Demography: The study of populations, especially with reference to size and density, fertility, mortality, growth, age, distribution, migration, vital statistics and the interaction of these with social and economic conditions.

Last, JM. A Dictionary of Epidemiology
World Demographics Profile (1)

**Population**: 6,928,198,253 (July 2011 est.)

**Age structure**

0-14 years: 26.3% (male 944,987,919/female 884,268,378)
15-64 years: 65.9% (male 2,234,860,865/female 2,187,838,153)
65 years and over: 7.9% (male 227,164,176/female 289,048,221)

(2011 est.)

**Median age**

Total: 28.4 years
Male: 27.7 years
Female: 29 years (2009 est.)
World Demographics Profile (2)

**Population growth rate**
1.092% (2011 est.)

**Birth rate**
19.15 births/1,000 population (2011 est.)

**Death rate**
8.12 deaths/1,000 population (July 2011 est.)
World Demographics Profile (3)

**Sex ratio**

*At birth:* 1.07 male(s)/female  
*Under 15 years of age:* 1.07 male(s)/female  
*15-64 years:* 1.02 male(s)/female  
*65 years and over:* 0.79 male(s)/female  
*Total population:* 1.01 male(s)/female (2011 est.)

**Infant mortality rate**

*Total:* 41.61 deaths/1,000 live births  
*Male:* 43.52 deaths/1,000 live births  
*Female:* 39.55 deaths/1,000 live births (2011 est.)
World Demographics Profile (4)

Life expectancy at birth

Total population: 67.07 years
Male: 65.21 years
Female: 69.05 years (2011 est.)

Total fertility rate: 2.46 children born/woman (2011 est.)

Religions

Christian 33.35% (of which Roman Catholic 16.83%, Protestant 6.08%, Orthodox 4.03%, Anglican 1.26%), Muslim 22.43%, Hindu 13.78%, Buddhist 7.13%, Sikh 0.36%, Jewish 0.21%, Baha'i 0.11%, other religions 11.17%, non-religious 9.42%, atheists 2.04% (2009 est.)
**Languages**

Mandarin Chinese 12.44%, Spanish 4.85%, English 4.83%, Arabic 3.25%, Hindi 2.68%, Bengali 2.66%, Portuguese 2.62%, Russian 2.12%, Japanese 1.8%, Standard German 1.33%, Javanese 1.25% (2009 est.)

(Percents are for "first language" speakers only; the six UN languages - Arabic, Chinese (Mandarin), English, French, Spanish (Castilian), and Russian - are the mother tongue or second language of about half of the world's population, and are the official languages in more than half the states in the world)
World Demographics Profile (6)

**Literacy** (definition: age 15 and over can read and write)
Total population, 83.7%; male, 88.3%; female: 79.2%
(Over 2/3rd of the world's 793 million illiterate adults are found in only eight countries (Bangladesh, China, Egypt, Ethiopia, India, Indonesia, Nigeria, Pakistan); of all the illiterate adults in the world, 2/3rd are women)

**School life expectancy** (primary to tertiary education):
Total, 11 years; male, 11 years; female, 11 years (2008)

**Education expenditures**: 4.4% of GDP (2007)
World population distribution, 2011

World population/age pyramid, 2010 (6,908,689,000 total)

http://populationpyramid.net/?country=World&year=2010
Population/Age Pyramids of the Developed vs Developing World

World population

By five-year age group, m

Source: UN

*Projection

Population pyramids for developing vs developed countries; projections of worker per older adult.

Number of Working-Age Adults per Older Adult, 2010 and 2050

World

Developed Countries 2010

Developed Countries 2050

More developed

Less developed

Least developed

SOURCE: PRB, 2010

Young and growing: aging and stable. In developing countries, the large proportion of young people ensures rapid population growth. The aging population in more developed countries, with few future parents, spells little or no growth.

By the numbers

16% Population 65+
North America

16% Population <15
Europe

3% Population 65+
sub-Saharan Africa

43% Population <15
sub-Saharan Africa

SOURCE: PRB, 2010
Percent of population under the age of 15 years, 2010

The majority of population growth occurs in developing countries

Science 333:542, 2011
Total fertility rate (children per woman), 2011

Strong predictors. High fertility rates are associated with poverty and low levels of educational attainment for girls.

Fertility and Education, 2007
Percentage of girls enrolled in secondary school

Fertility and Poverty, 2007
Percentage of population living on <$2 per day

SOURCE: PRB, 2007

Association of education and poverty with fertility

Science 333:541, 2011
More women, fewer kids. The global fertility rate has dropped from 5 to 2.5 in roughly 50 years, and the average woman in developing countries (outside of China) now has three children, down from six.

Global Decline in Fertility, 1950–2010

- Less developed countries (excluding China)
- World
- More developed countries

SOURCE: UNPD, 2011
Population growth, historic and projected, and trends in life expectancy

Science 333:540, 2011
Global Aging

% >60 years old: 10% in 2000
    21+% in 2015

Effect of Aging: <60 versus >60 years:
    Health care use 3- to 5-fold greater
    50% have two or more chronic conditions
The World Ahead

By the numbers

**2:1** Population of developing to developed countries, 1950

**6:1** Population of developing to developed countries, 2050

*Source: UNPD, 2011*

Sheer numbers.* Because of sub-Saharan Africa's high fertility rate, the fastest growth will occur there. But even with its slower growth rate, Asia—largely India and China—will still account for the bulk of the world's population in 2050.

*Numbers in thousands

<table>
<thead>
<tr>
<th>Region</th>
<th>Population 2010</th>
<th>Projected 2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>1,022,234</td>
<td>2,191,599</td>
</tr>
<tr>
<td>Asia</td>
<td>4,164,252</td>
<td>5,142,220</td>
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<tr>
<td>Europe</td>
<td>738,199</td>
<td>719,257</td>
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<tr>
<td>Latin America</td>
<td>590,082</td>
<td>750,956</td>
</tr>
<tr>
<td>North America</td>
<td>344,529</td>
<td>446,862</td>
</tr>
</tbody>
</table>

*Source: UNPD, 2011*
Percent of population living in urban areas, 2010

Urban population: 50.5% of total population (2010)
Rate of urbanization: 1.85% annual rate of change (2010-15 est.)

10 largest urban agglomerations: Tokyo (Japan) - 36,669,000; Delhi (India) - 22,157,000; Sao Paulo (Brazil) - 20,262,000; Mumbai (India) - 20,041,000; Mexico City (Mexico) - 19,460,000; New York-Newark (US) - 19,425,000; Shanghai (China) - 16,575,000; Kolkata (India) - 15,552,000; Dhaka (Bangladesh) - 14,648,000; Karachi (Pakistan) - 13,125,000 (2009)

Rural vs. Urban

- Poorer health
- Less access to health care
- Poorer quality of health care
- Higher proportion of elderly, due to industrialization and requisite migration to urban areas
- Slower epidemic potential (population density), but lower rates of immunity
- Higher cost of providing services; e.g., water, electricity, waste disposal
Percent of Poor Households with Access to Services (continued)

<table>
<thead>
<tr>
<th>DHS COUNTRIES IN REGION</th>
<th>PIPED WATER ON PREMISES</th>
<th>WATER IN NEIGHBORHOOD</th>
<th>FLUSH TOILET</th>
<th>PIT TOILET</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOUTH, CENTRAL, WEST ASIA</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Rural</td>
<td>28.1</td>
<td>53.6</td>
<td>4.3</td>
<td>55.4</td>
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<tr>
<td>Urban poor</td>
<td>58.0</td>
<td>36.3</td>
<td>39.8</td>
<td>34.1</td>
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<tr>
<td>Urban nonpoor</td>
<td>80.2</td>
<td>17.7</td>
<td>64.0</td>
<td>23.2</td>
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<tr>
<td>LATIN AMERICA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>31.4</td>
<td>36.4</td>
<td>12.6</td>
<td>44.0</td>
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<tr>
<td>Urban poor</td>
<td>58.7</td>
<td>35.2</td>
<td>33.6</td>
<td>47.0</td>
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<tr>
<td>Urban nonpoor</td>
<td>72.7</td>
<td>24.9</td>
<td>63.7</td>
<td>31.6</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Rural</td>
<td>18.5</td>
<td>50.7</td>
<td>7.5</td>
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<tr>
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<td>41.5</td>
<td>49.4</td>
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<td>51.7</td>
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<tr>
<td>Urban nonpoor</td>
<td>61.5</td>
<td>34.0</td>
<td>48.4</td>
<td>46.5</td>
</tr>
</tbody>
</table>


http://www.prb.org/pdf09/64.2urbanization.pdf
Impact of Poor Water and Sanitation

• Causes 88% of diarrhea cases; 1.5 million deaths annually

• High infant mortality due to dehydration resulting from diarrhea

• No access to improved water – 884 million (13% of the global population)
Percentages of population with sustainable access to an improved water source, 2008

Percent of population with access to improved sanitation, 2008

Countries reporting cholera in 2009

http://gamapserver.who.int/mapLibrary/Files/Maps/global_cholera_cases_2009.jpg
Death rate (deaths per 1000 population), 2011

Child mortality (deaths under the age of five years per 1000 live births), 2009

Maternal mortality (adjusted per 100,000 live births), 2008

Female life expectancy at birth (years), 2008

Male life expectancy at birth (years), 2008

GDP per capita, 2009

Percent of population living on less than $1.25/day (varying years of data availability)

Poverty

Globally, 1.2 billion (17.4%) of the world’s population live on <$US1 per day

Poor versus rich countries:
- Deaths of children under 5 years of age: 20:1
- Malnutrition: 10:1
- Life expectancy: -16 years
- Internal country disparities (e.g. 39.8 million Americans live below the poverty level; >20% among Hispanics and African-Americans
Some Conclusions from Demographic Studies (1)

- The majority of the world’s population lives in developing countries.
- Although fertility is declining, increases in population will occur primarily in developing countries in coming decades.
- Developed countries must cope with a shrinking productive age population and a burgeoning elderly population.
- The majority of the global population will live in urban areas in coming decades.
Some Conclusions from Demographic Studies (2)

- The world’s wealth is concentrated in a minority of countries.
- Poor sanitation and hunger are concentrated primarily in countries in sub-Saharan Africa and South Asia.
- Population density (which promotes emerging diseases) is greatest in developing countries, particularly China and India.
- Global inequity remains a major problem.