Population Geography Class 1.5

Last Time

1) Understand the historical and regional phases (including causes and timing) of the Epidemiological Transition and its implications for future mortality trends
Population Geography Class 1.5
Global mortality today and into the future

Today’s Objective
1) Understand ways in which the epidemiological transition in the developing world is similar and dissimilar to the historical transition
2) Consider conditions that foster other factors (political, socio-economic, ecological) to relate to mortality
3) Relate how AIDS is like/unlike other epidemics and its manifold political, social, and economic causes and consequences
Global Life Expectancy

Figure 12.
Life Expectancy at Birth Across the Globe: 2002
Sub-Saharan African countries had by far the lowest life expectancy at birth of any region on the globe in 2002.

Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.
MODELS OF THE EPIDEMIOLOGIC TRANSITION

Western Models

Model 1
Classical

Birth Rate
Death Rate

1750 1800 1850 1900 1950 2000

Model 2
Accelerated/
Semi-Western

Birth Rate
Death Rate

Model 3
Rapid

Birth Rate
Death Rate

Delayed Models (20th Century)

Model 4
Intermediate

Birth Rate
Death Rate

Model 5
Slow

Birth Rate
Death Rate
Causes of Death
Least Developed Countries (LDCs)

- LDCs = 85% of world’s population
- 99% of World’s population Growth
- >90% of world’s births
- >98% of world’s deaths to children < age 5 (95% of these are preventable)
- Wide range of E0 – from 40-70.
- What are people dying from?
Deaths among children under five global, 1999

- Acute respiratory infections: 20%
- Diarrhea: 12%
- Measles: 5%
- Malaria: 8%
- HIV/AIDS: 4%
- Perinatal causes: 22%
- Deaths associated with malnutrition: 60%
- Other: 29%

http://www.developmentgoals.org/Child_Mortality.htm#top
Percentage of Children Under 5 Years Who Are Moderately and Severely Underweight Major World Regions 1990-1997

- Developing Countries: 31%
- Least Developed Countries: 40%
- South Asia: 51%
- Sub-Saharan Africa: 31%
- East Asia and the Pacific: 22%
- Middle East and North Africa: 18%
- Latin America and the Caribbean: 10%

Nutrition and Disease

Not just infants and young children:

- 33-57% of world suffers from micronutrient deficiency.
- ~18% of world’s pop. suffer from deficiency of calories and protein.
- 14% of world’s pop. have food insufficient for min. adult activity & healthy adolescent growth.
Figure 1.2 Age distribution of global mortality: developed and developing countries, 2002
Figure 1.8 Disease burden (DALYs) among adults (aged 15 years and over) by broad cause, selected epidemiological subregions, 2002

See List of Member States for an explanation of subregions.
Figure 1.9 Adult mortality: probabilities of death between 15 and 60 years of age by cause, selected epidemiological subregions, 2002

See List of Member States for an explanation of subregions.
Other factors in mortality transition & pattern

Evolution
- Natural and human-induced pathogen evolution
- Mosquitos and Aids
other factors in mortality transition & pattern

Transnational Corporations
- Infant formulas
- Junk Food
- Pharmaceuticals
- Tobacco
other factors in mortality transition & pattern

Socio-economic Status

• Education

• Social Class
other factors in mortality transition & pattern

Spatial patterns and Ecology (Geography!)
- Malaria
- Schistosomiasis
A Special Case: AIDS

- AIDS (acquired immune deficiency syndrome)

- HIV (human immunodeficiency virus)

- The immune system is said to be "deficient" when it can no longer fulfill its role of fighting off infection and cancers.

- Immune deficient patients are vulnerable to infections from diseases that are very rare among people without immune deficiency.
A global view of HIV infection

38 million people [range: 35-42 million] living with HIV as of end 2003
Adults and children estimated to be living with HIV as of end 2003

Total: 37.8 (34.6 – 42.3) million
Estimated number of adults and children newly infected with HIV during 2003

Total: 4.8 (4.2 – 6.3) million
Estimated adult and child deaths from AIDS during 2003

Total: 2.9 (2.6 – 3.3) million
What is the economic impact of AIDS?

- AIDS deaths are clustered around working-aged individuals
- Impacts the basic foundations of a development and living standards
  - Workforce fluxes
  - Weakening governance
  - Discourages investment
  - Loss of productivity
What is the social impact of AIDS?

• AIDS taxes social systems.
• Life expectancy has plummeted by 20 years in some countries.
• Unprecedented social welfare demands.
• Whole families dissolve.
• In education, teachers and students are dying or leaving school.
• Health care systems in many countries are stretched beyond their limits.
Impacts to Women

- Women, especially girls, are at higher risk of HIV/AIDS infection.
- Many shoulder the burden of caring for infected family members.
- School-aged girls are often removed from schools.
- Reduced education for women impedes national development.
Today’s Review

1) Understand ways in which the epidemiological transition in the developing world is similar and dissimilar to the historical transition

2) Consider conditions that foster other factors (political, socio-economic, ecological) to relate to mortality

3) Relate how AIDS is like/unlike other epidemics and its manifold political, social, and economic causes and consequences
Mortality Summary

1) Change over time and space

2) Societal and Technological Developments

3) Human-environment interactions

4) Socio-economic and political links to Mortality
End of Mortality
Next week’s sexy topic...
Fertility