- Western 'biomedical medical' doesn't necessarily help.

- Global variations in mortality rates, life expectancy & 'life loss' (DALYs) are frequently related in the literature to:

  - demographic processes
  - epidemiological processes
  - summarised by the demographic & epidemiological transition models

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## Demographic transition

- Population growth results from a lag in decrease in birth rates during a social change

- Process is known as demographic transition - Movement through the transition doesn't necessarily mean 'progress' (nor need it be linear & uni-directional)

- It is a generalised model - there are inevitably exceptions

## Epidemiological transition

- Epidemiological Transition model was proposed by Omran (1971, 1983)

- Sometimes known as Health Transition

- Links epidemiological change with social & economic development

- Processes / stages of model vary both spatially & temporally (relating to time)

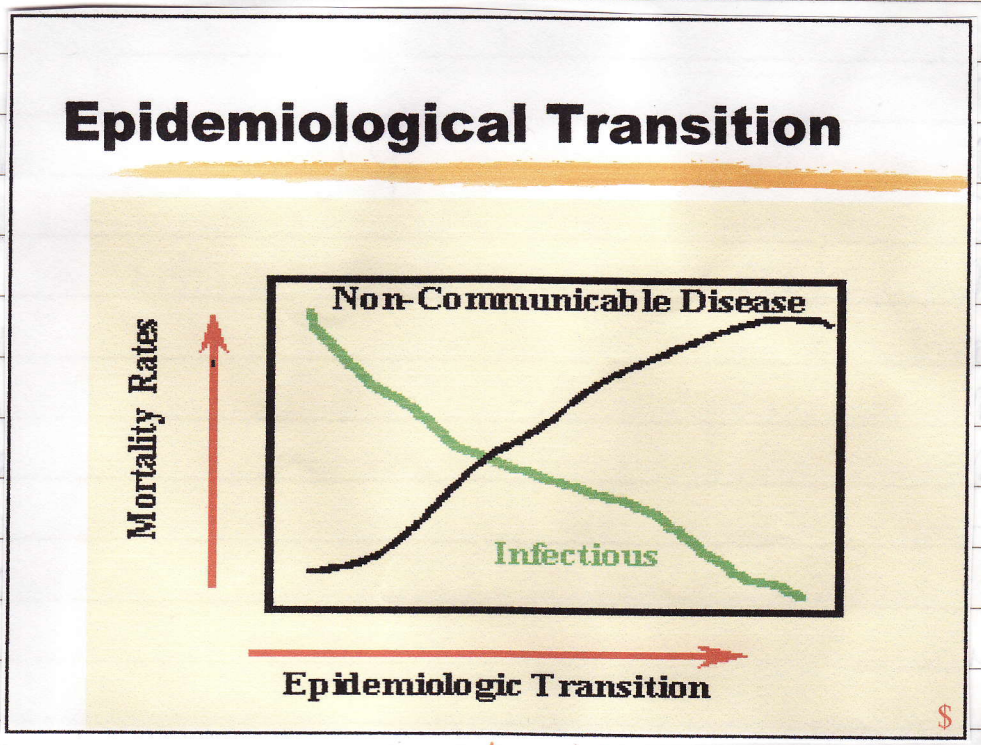
- It reflects and bench marks the past/historical experiences of EMEs (Established Market Economies)
  - Western centric?

- Transition from communicable disease to dominance of non-communicable disease

Epidemiological Transition: maps the transition from dominance of **communicable** to **non-communicable** disease in EMEs

- **Communicable disease**: is an infection, passed person-to-person or animal to human disease
  eg. influenza, cholera, polio, AIDS, TB, CJD

- **Non-communicable disease**: is a diverse group of chronic degenerative conditions
  eg. cancer, stroke, heart disease, bronchitis, genetic diseases




- Model typically has 3 phases:

1. Pestilence & famine
2. Receding pandemics
3. Degenerative / human made

## Established Market Economies

- Transition took 200 years
- Eg. UK, Western Europe, North America.

## Before transition

- Countries typified by high levels of mortality due to infectious diseases and their poor management
- High levels of fertility, young population
- Susceptible to communicable / infectious diseases

## Introduction of disease control

- Mortality rate declines, especially for children
- Size of population increases
- Postulated fertility declines, rate of population growth slows
- Mortality & fertility 'balance'
- Non-communicable diseases become more significant
  - most of them are common in old age
  - welfare dependency/health service resource implications

Phillips (1990) suggest that the Epidemiological Transition model should be used as a planning tool

- re-orientation of resources in developing countries
- respond to modernization & disease profile
- "investigate whether places or people are on cusp in development, epidemiologically speaking..." (Phillips, 1991, Soc Sci Med 32, p.403)

## Modifications (not that simple)

- Classic/Western model for EMEs needs modification for some other countries (Omran, 1983)

- Acceleration transition in Japan, Eastern Europe

- Delayed transition after improvement in mortality
  - also know as 'protracted polarised' model

- eg. Mexico
- re-emergence of malaria & dengue fever
- Limitations of social & economic development
- Limitations of health care system

- Delayed model: transitional variant
- eg. Jamaica, Singapore, Hong Kong, Korea
- Medical system means 'western' levels of mortality are achieved

## Why has the ET model broken down?

- Past 25 years hopes of conquering major infectious diseases not met
  - re-emergence of malaria, TB & cholera
  - emerging pathogens such as HIV, Ebola, CJD, Hep C
  - 4th Stage?

- Reasons:
  - Biological mutation of existing pathogens
  - Drug and insecticide resistance
  - Compromised immune systems
  - Population ageing
  - Rapid urbanization, poor sanitation, poor health infrastructure & paucity
  - Increased international travel

## Why a 4th Stage?

- Evolution of microbes
- Over-use of antibiotics
- Urbanization
- Mobility

- Expansion into previously unpopulated areas
- Climatic change
- Poverty
- Globalization