Health: Is It a Personal, Public, or Social Issue?

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Alaska World Affairs Council
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What is *Health*?

- "State of complete physical, mental, and social well being, and not merely the absence of disease or infirmity."
  
  – Preamble to the Constitution of the WHO, 1948
"Death is a fact. All else is inference."

William Farr
(1807–1883)
Some Measures of Health

• Life expectancy
• Causes of death
• Premature Death: Years of potential life lost (YPLL)
• Healthy life expectancy: Disability-Adjusted Life Years (DALYs) lost
  – YPLL + years of disability
Leading Causes of Death, Low-Income and High-Income Countries, 2011

• Low Income
  1. Pneumonia
  2. HIV/AIDS
  3. Diarrheal Diseases
  4. Stroke
  5. Ischemic Heart Disease
  6. Prematurity
  7. Malaria
  8. Tuberculosis
  9. Malnutrition
  10. Birth asphyxia/trauma

• High Income
  1. Ischemic Heart Disease
  2. Stroke
  3. Lung Cancer
  4. Alzheimer’s Disease
  5. COPD
  6. Pneumonia
  7. Colon Cancer
  8. Diabetes
  9. High Blood Pressure
  10. Breast Cancer
Ten Leading Causes of Disability-Adjusted Life Years Lost in the World, 2010

- Heart Disease: 130
- Pneumonia: 115
- Stroke: 102
- Diarrheal Diseases: 90
- HIV/AIDS: 82
- Malaria: 82
- Low Back Pain: 81
- Preterm Birth: 77
- COPD: 77
- Road Traffic Injury: 75

Four Realms of Influence For Improving Health

1. *Personal* Medical Care: individual provider uses clinical training and experience to treat the individual patient

2. *Personal* Responsibility: the individual utilizes available knowledge and alters behavior to improve and maintain health

3. *Public* Health: addresses issues that influence the health status of the population

4. *Social* Determinants of Health: includes broader range of factors that affect health
Five Domains Shaping Health

Essential Public Health Services

- **Monitor** health status to identify community health problems.
- **Diagnose and investigate** health problems and health hazards in the community.
- **Inform, educate, and empower** people about health issues.
- **Mobilize** community partnerships to identify and solve health problems.
- **Develop policies and plans** that support individual and community health efforts.
- **Enforce** laws and regulations that protect health and ensure safety.
- **Link** people to needed personal health services and assure the provision of health care when otherwise unavailable.
- **Assure** a competent public health and personal healthcare workforce.
- **Evaluate** effectiveness, accessibility, and quality of personal and population-based health services.
- **Research** for new insights and innovative solutions to health problems.

Source: American Public Health Association
Disease Elimination and Eradication

• Elimination
  – Zero disease in a defined geographic area
  – Control measures still needed to prevent re-establishment of transmission

• Eradication
  – Zero disease globally
  – Control measures no longer needed
Smallpox, 1967
Smallpox Eradication Strategy

Surveillance and Containment

• Search for cases
• Vaccinate case contacts and their contacts
Working to stamp out cattle plague by 2010

The Global Rinderpest Eradication Programme

Contact the GREP Secretariat

FAO EMPRES, Viale delle Terme di Caracalla, 00100 Rome, Italy
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www.fao.org/EMPRES/GREP

Food and Agriculture Organization of the United Nations
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EMPRES: Emergency Prevention System
OIE: Office International des Epizooties
EU: European Union
USAID: United States Agency for International Development
Africa: African Union
Guinea Worm (Dracunculiasis): Eradication Through Information

ERADICATING Guinea Worm Disease
3.5 million cases in 1986
542 cases in 2012
Larvae undergo two molts in the copepod and becomes a L3 larvae.

1. Human drinks unfiltered water containing copepods with L3 larvae.

2. Larvae are released when copepods die. Larvae penetrate the host's stomach and intestinal wall. They mature and reproduce.

3. Fertilized female worm migrates to surface of skin, causes a blister, and discharges larvae.

4. L1 larvae released into water from the emerging female worm.

5. L1 larvae consumed by a copepod.

6. Larvae undergo two molts in the copepod and becomes a L3 larvae.

i = Infective Stage

d = Diagnostic Stage
Social Determinants of Health Defined in the 21st Century

“...the conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels. The social determinants of health are mostly responsible for health inequities...”

World Health Organization
Examples of Social Determinants of Health

- Employment and working conditions
- Poverty and socioeconomic factors
- Education and literacy
- Transportation
- Housing
- Discrimination (e.g., race, gender, or class)
- Political unrest and war
Social Determinant Impact on the Personal Realm: The Story of Jason

• "Why is Jason in the hospital? He has an infection in his leg.
• Why does he have an infection? He cut his leg and it got infected.
• Why does he have a cut on his leg? He was playing in the junk yard next to his apartment building and fell on a sharp, jagged piece of steel.
• Why was he playing in a junk yard? A lot of kids play there. There is no playground in his neighborhood.
• Why does he live in that neighborhood? His parents can't afford a nicer place to live.
• Why can't his parents afford a nicer place to live? His Dad is unemployed and his Mom is sick.
• Why is his Dad unemployed? He doesn't have much education and where he used to work has closed.
• But why ...?"

Based on a story in Toward a Healthy Future: Second Report on the Health of Canadians
Social Determinant Impact on the Public Realm: The Global Polio Eradication Initiative

GPEI Founding Partners: Rotary, CDC, WHO, UNICEF

1988

Countries that have never eliminated polio
Countries that have eliminated polio

350,000 Cases

2012*

Countries that have never eliminated polio

223 Cases

*As of May 3, 2012
Global Polio, Jan-Sept 2012 and 2013

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<th>Country</th>
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<td><strong>Total</strong></td>
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Independent Monitoring Board of the Global Polio Eradication Initiative, 2013
Gunmen in Pakistan Kill Women Who Were Giving Children Polio Vaccines
Re-Emergence of Polio in Syria, 2013

• Over 4,000,000 people have been displaced by the war in Syria

Photo: New York Times

As of November 11, 2013
• 13 cases of confirmed polio
• First cases in 1999
Is Health a Personal, Public, or Social Issue?

- Personal Responsibility
- Personal Access to Medical Care
- Public Health
- Social Determinants of Health
World: Urban and rural Population: 2010-2100

World: Mega-Cities with 10+ Million Inhabitants

Number

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<thead>
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<th>Year</th>
<th>1970</th>
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<td>23</td>
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Population (millions)

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<td></td>
<td>40</td>
<td>145</td>
<td>359</td>
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Effects of Urbanization on Health

• Opportunities
  – Utilities
  – Employment
  – Education
  – Health services
  – Entertainment
  – Political participation

• Challenges
  – Air and water quality
  – Crowding
  – Land use impact
  – Microclimate
  – Housing
  – Traffic/transportation
Proportion of the Global Population Aged < 5 Years and ≥65 Years

Global Deaths Due to Chronic (Non-communicable) Diseases

Projected Global Population With Dementia, 2010-2050

• "Predictions are hard to make, especially about the future"

• Niels Bohr
• “The future ain't what it used to be.”
  — Yogi Berra