

# Health Issues in the Developing World

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# Overall Goals

- Review causes of death in developing world
- Discuss cases on needs and contributing factors
- Brainstorm about engineering and health
- Summarize main points

# Health as a Human Right

- Disparities within countries and between countries
- Availability of health services
- Access to services
- Contributing factors

# Where to start...

- Most countries do not collect data
- Certain organizations (UN, WHO) create reports based on samples
- All developing countries are not the same
- Many issues faced are similar

# The Leading Causes of Death

- For children under 5 in Developing World:

- Perinatal Diseases,
- Respiratory Infections,
- Diarrhea,
- Malaria,
- Measles
- (all affected by nutritional state)

- For children under 5 in High Income Countries:

- Perinatal conditions
- Congenital diseases
- Traffic Injuries
- Respiratory Infections
- Nutritional/Endocrine Disorders

# Leading Causes of Death cont...

- For young adults (15-44) developing world
  - HIV/AIDS
  - Violence
  - War
  - Tuberculosis
  - Traffic Injuries
- For young adults (15-44) high income countries
  - Traffic Injuries
  - Self Inflicted Injuries
  - HIV/AIDS
  - Violence
  - Ischemic Heart Disease

# Background for cases

- Cases are based on prior experience abroad, reading of reports with no patient identifiers included.
- As framework will create a 'team' of physician and engineer partnership working in same village.

# The children can't breathe...

- On first day of team's arrival to the village, the physician is brought to the hospital and asked to see a few patients.
- The engineer is brought to the same hospital and given a tour of the facilities with attention drawn to broken instruments.

# The children can't breath cont...

- At the end of the day, the physician reports being quite affected by the number of children who came to the clinic with 'bad coughs' and the number of children in the hospital with labored breathing.
- Puzzled, not by the medical etiology but by the cause, the physician has a few questions for the engineer.

# Questions

- What could be causing these respiratory problems?
- Who should be asked?
- What are the possible solutions?

# Respiratory Diseases

- Airways get irritated by foreign substances
- Most caused by Infections
- Many secondary to Pollution
  - Charcoal
  - Industry
  - Other
- Mortality is high- especially in infants

# Not enough to eat

- On day 3, the engineer and the physician who had spent most of their first 2 days at the hospital seeing patients or fixing pipes, decided to go on a walk around the village
- Something drew their attention, the children had very skinny arms and legs but big bellies

# Questions

- Why?
- How can they learn more about the problem?
- What are the consequences of such a problem?
- What are some of the solutions?

# Kwashiorkor : a type of malnutrition

- Protein Malnutrition
- Causes:
  - Protuberant belly
  - Fatigue
  - Skin problems
  - Diarrhea
  - Low Immune System
  - Death
- Preventable and Treatable

# The leading cause of death for those 15-59

- During the second week, the physician was asked to leave the pediatric ward and spend some time in the adult section of the hospital.
- The engineer had met with some of the elders and had a few suggestions/tips that could help address some of the issues that had come up so far

# Where is everybody?

- The engineer needed 3 groups of young healthy people to work on a water filtration system, and on testing the windmill.
- The physician sat by the side of a 16 year old who had given birth 3 months before and was brought in for uncontrollable diarrhea and weight loss.

# Questions

- What is the 16 year old suffering from?
- Why is it so hard to find available young and healthy volunteers?
- What has happened to this community?

# HIV/AIDS

- The leading cause of death in most developing countries for those between 15 and 59
- Long lasting social and structural impact
- Affecting the quantity and the quality of life of millions

## Adults and children estimated to be living with HIV/AIDS as of end 2003

- North America: 790 000 to 1.2 mil
- Caribbean: 350 000 to 590 000
- Latin America: 1.3 to 1.9 mil
- South East Asia: 4.6 to 8.2 mil
- Sub-Saharan Africa: 25 to 28.2 mil
  
- TOTAL: 34 to 46 million

## Estimated number of adults and children newly infected with HIV during 2003

- North America: 36 000 to 54 000
- Caribbean: 45 000 to 80 000
- Latin America: 120 000 to 180 000
- South East Asia: 610 000 to 1.1 mil
- Sub-Saharan Africa: 3.0 to 3.4 mil
  
- TOTAL: 4.2 to 5.8 million

## Estimated adult and child deaths from HIV/AIDS during 2003

- North America: 12 000 to 18 000
- Caribbean: 30 000 to 50 000
- Latin America: 49 000 to 70 000
- South East Asia: 330 000 to 590 000
- Sub-Saharan Africa: 2.2 to 2.4 mil
  
- TOTAL: 2.5 to 3.5 million

# Impact of HIV on Population

- Loss of youth (15-49)
- Higher proportion of children
- Elderly caring for children/orphans

# HIV/AIDS

- Virus
- Transmitted through bodily fluids
  - Semen
  - Vaginal Secretions
  - Blood
- Impact:
  - Social
  - Stigma
  - Economic

# HIV/AIDS: Some Possible Interventions

## ■ Medical:

- Prevention
- Improved Access
- Psychological Care
- Treatment
- Nutritional Support

## ■ Non-Medical:

- Clean water
- Support tools: pill boxes, wheelchairs
- Safe Housing
- Advocacy

# Summary

- Leading causes of death vary by age and region
- Top 5 leading causes of death are either preventable or treatable
- Solutions to address them should come from interdisciplinary collaborations with active participation of those affected
- Health is a human right.

# References

- [http://www.prb.org/Content/NavigationMenu/PRB/Educators/Human\\_Population/Health2/World\\_Health1.htm](http://www.prb.org/Content/NavigationMenu/PRB/Educators/Human_Population/Health2/World_Health1.htm)
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