

Week 1, lecture 1

Why study global health?

- Understand the *progress* that has already been made
- Understand the challenges that still remain
- Diseases are not limited by *national* boundaries
- Significant health disparities among groups
- Link between health and *development*

Key terms:

**Health-** Is a state of complete physical and mental and social state of well being, and not merely the absence of disease or infirmity

**Public Health-** The science and art of preventing disease, prolonging life, and promoting physical health and mental health and efficiency through organized community efforts towards a sanitary environment, control of community infections, education hygiene. **Focuses on entire population.**

**Global Health-** an area for study, research and practice that places a priority on improving health and achieving equity in health for all people worldwide. Health emphasized transnational health issues.

**First World-** Industrialized, capitalists countries that fall in the western european and US sphere of influence( Canada, Japan). They have market economies.

**Second World-** Those within the former soviet union sphere of influence( Poland, Cuba). They have planned market economies.

**Third World-** Low UN development index (parts of africa, latin america, asia).They have developing economies and this term is disliked by many.

**Fourth World-** Lack industrial infrastructure and is the poorest of third world nations.

**Two-thirds world-** Indicates the majority of countries are third world countries

**The South-** Synonym for two thirds, fourth world and third world.

**Developed and Developing Countries-**not a precise term, controversial, developed is relatively high income and developing is relatively low income per capita.

**Low income-** \$995 or less

**Lower middle income-** \$996-3,945

**Upper middle income-** \$3946-12,195

**High income-** \$12,196 or above

THIS IS BASED ON GROSS NATIONAL INCOME PER INDIVIDUAL

Week 1, 2

**Millenium Development Goals**

- In 2000, the global community committed to eliminating poverty and improving health and welfare of the world's poorest people by the year 2015.
- Health is at the core of the MDGs

## **Goal 1- Eradicate extreme poverty and hunger**

### ***Sport related-***

- Sport programs and sport equipment production provide jobs and skills development
- Sports can help prevent disease that impede (prevent or delay) people from working and impose health care costs on individuals and communities
- Participants and volunteers and coaches acquire transferable life skills which increases their employability
- Sports can help reduce stigma and increase self-esteem, self confidence and social skills leading to increased employability

## **Goal 2-Achieve universal primary education**

### ***Sport related-***

- School sport programs motivate children to enroll in and attend school and can help improve academic achievement
- Sport based community education programs provide alternative education opportunities for children who cannot attend school
- Sport can help erode stigma preventing children with disabilities from attending school.

## **Goal 3- Promote gender equality, and empower women**

### ***Sport related-***

- Sports helps improve female physical and mental health and offers opportunities for social interaction and friendship
- Sport participation leads to increased self esteem, self confidence and enhanced sense of control over one's body
- Girls and women access leadership opportunities and experience
- Sport can cause positive shifts in gender norms that afford girls and women greater safety and control over their lives
- Women and girls with disabilities are empowered by sport-based opportunities to acquire health information, skills, social networks, and leadership experience.

## **Goal 4- Reduce child mortality**

### ***Sport related-***

- Inclusive sport programs help lower the likelihood of infanticide by promoting greater acceptance of children with disabilities
- Sport can be used to educate and deliver health information to young mothers, resulting in healthier children
- Increased physical fitness improves children's resistance to some diseases
- Sport can help reduce the rate of higher risk adolescent pregnancies
- Sport based vaccination and prevention campaigns help reduce child deaths and disability from measles, malaria and polio

## **Goal 5- Improve maternal health**

### ***Sport related-***

- Sport for health programs offer girls and women greater access to reproductive health information and services

-Increases fitness levels help speed post natal recovery

### **Goal 6-Combat HIV/Aids, malaria or other diseases**

#### ***Sport related-***

-Sport programs are associated with lower rates of health risk behaviour that contributes to HIV infection

-Programs providing HIV prevention education and empowerment can further reduce HIV infection rate

-Sport can be used to increase measles, polio and other vaccination rates

-Involvement of celebrity athlete and use of mass sport events can increase reach and impact of malaria, tuberculosis, and other education and prevention campaigns.

-Sport programs can be used to reduce stigma and increase social and economic integration of people living with HIV and AIDS

### **Goal 7-Ensure environmental sustainability**

#### ***Sport related-***

-Sport based social mobilization initiatives can enhance participation in community action to improve local environment

-Sport based public education campaigns can raise awareness of importance of environmental protection and sustainability

### **Goal 8 -Develop a global partnership for development**

#### ***Sport related-***

-‘Sport for Development and Peace’ efforts catalyze global partnerships and increase networking among governments, donors , NGOS and sport organization worldwide

Week 2,1

### **Sustainable Development Goals**

-a way to build on the MDGS and complete those that were not achieved, the **UN developed 17 SDGS, and 169 targets.**

-Very ambitious

-The SDG focus on three dimensions, social, economical and environmental

-Released in 2015, the UN hopes to have initiated change and action over the next 15 years, so by the year 2030.

### **SDG #1: End poverty in all its forms everywhere**

#### ***Sport related-***

-vulnerable individuals are connected to community services and support through sport based outreach programs

-Sport programs and sport equipment production provide jobs and skills development

-Sport can help prevent disease that impede people from working and impose health care costs on individual and communities

-Participants, volunteers and coaches acquire transferable life skills which can increase their employability

-Sport can help reduce stigma and increase self esteem, self confidence and social skills leading to increased employability

**SDG #2 End hunger, achieve food security and improve nutrition and promote sustainable agriculture**

***Sport related-***

- Sport based programs that focus on nutrition and agriculture can also complement programs that tackle hunger and support education
- Sport is often linked to the nutrition and wellness of an individual/community
- Sport can be used as a mean of providing relief to those suffering from extreme hunger

**SDG #3: Ensure healthy lives and promote well-being at all ages**

***Sport related-***

- Sport can be used to educate and deliver health information to young mothers, resulting in healthier children
- Sport can help reduce the rate of higher risk adolescent pregnancies
- Sport health programs offer girls and women great access to reproductive health information and services
- Increased fitness levels help speed post-natal recovery
- Sport can be used to increase vaccination rates

**SDG #4: Ensure inclusive & equitable quality education, and promote lifelong learning opportunities for all**

***Sport related-***

- School sport programs motivate children to enroll in and attend school and can help improve academic achievement
- Sport based community education programs provide alternative education opportunities for children who cannot attend school
- Sport can help erode stigma preventing children with disabilities from attending school

**SDG #5: Achieve gender equality and empower all women & girls**

***Sport related-***

- Sport helps improve female physical and mental health and offers opportunities for social interaction and create friendships
- Sport participation leads to increased self-esteem, self-confidence and enhanced sense of control over one's body
- Girls and women access leadership opportunities and experiences
- Sport can cause positive shifts in gender norms that afford girls and women greater safety and control over their lives
- Women and girls with disabilities are empowered by sport based opportunities to acquire health information, skills, social networks and leadership experience

**SDG #6: Ensure availability & sustainable management of water & sanitation for all**

***Sport related-***

- Sport creates an ideal environment for education individuals about water sanitation and hygiene practices
- Sport can mobilize local resources that promote the sustainable management of water for all

-If health and safety is considered of utmost importance to sport organizations, they can make the effort to develop and promote policies that enforce high standards of water and sanitation.

### **SDG #7: Ensure access to affordable, reliable, sustainable, & modern energy for all**

#### ***Sport related-***

- Sport organizations/associated can promote the adoption of renewable energy initiatives
- Sport venues (stadiums) that are striving to use more renewable energy sources could lead the way in promoting better energy infrastructure

### **SDG #8: Promote sustained, inclusive & sustainable economic growth, full and productive employment, & decent work for all**

#### ***Sport related-***

- In terms of production and income, has the potential to encourage and increase economic growth within a country
- Sport based programs can help reduce stigma and discrimination associated with disabilities
- Sport based programs can be ideal platform to educate individuals on basic human rights, including workers rights

Week 2,2

### **SDG #9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation**

#### ***Sport related-***

- Sport organizations/associations can increase sustainability by building infrastructure that does not add an environment burden to communities
- Appropriate, accessible and well-distributed community sport and recreation facilities can foster social inclusion by welcoming peoples with disabilities, newcomers and low income individuals and families
- Sport venues(stadiums, rec centers) can encourage the development of new green technologies that could drastically reduce both economic and environmental costs

### **SDG #10: Reduce inequality within and among countries**

- Sport based programs can be an ideal environment for promoting the social inclusion and empowerment of marginalized individuals and communities

### **SDG #11: Make cities and human settlements inclusive, safe, resilient and sustainable**

#### ***Sport related-***

- Sport organizations (IOC, hosting cities committees) can work with communities to develop ways that prevent/limit their venues (stadiums, ski runs) from negatively impacting the environment
- Sport organizations can also work with communities to ensure that marginalized individuals are not displaced, as well as to prevent cultural. Heritage sites from being damaged
- Sport can be used as a catalyst that promotes green modes of transportation(walking, biking, carpooling) thus promoting ways to reduce carbon emissions.

### **SDG #12: Ensure sustainable consumption & production patterns**

#### ***Sport related-***

-Sporting venues (e.g., stadiums, etc.) and/or events can reduce their waste production by promoting recycling and other green methods

-Sporting organizations can encourage policies and mandates that regulate and reduce the use of chemicals and pollutants at their events

-Sporting organizations can also work with sponsors to promote the use of green technologies

### **SDG #13: Take urgent action to combat climate change & its impacts**

#### ***Sport related-***

Sport-based social mobilization initiatives can enhance participation in community action to improve local environment

Sport-based public education campaigns can raise awareness of importance of environmental protection and sustainability

### **SDG #14: Conserve & sustainably use the oceans, seas & marine resources for sustainable development (EXAMPLE- RIO DE JANEIRO HOW WATERS WERE FILTHY)**

Sport (especially water sports) can be an ideal platform for educating individuals on marine pollution, management, conservation, and sustainability

Sporting organizations can develop and encourage mandates that limit/prohibit the taking of water from the supply system and/or natural bodies of water

Sporting organizations can also take measures to protect drinking water, and enhance wastewater treatment when hosting sporting events

### **SDG #15: Protect, restore & promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, & halt and reverse land degradation and halt biodiversity loss**

#### ***Sport related-***

-Sporting organizations (e.g., IOC, etc.) can develop and enforce mandates that protect and prevent the destruction of native wildlife and plants at their events

-Sporting organizations can also prevent deforestation by doing their best to ensure venues (e.g., ski runs) do not destroy forests

-Sport-based programs can be used to educate individuals on environmental topics like reducing their environmental impact, green technologies, etc.

### **SDG #16: Promote peaceful & inclusive societies for sustainable development, provide access to justice for all & build effective, accountable & inclusive institutions at all levels**

#### ***Sport related-***

-High-profile athletes, sporting teams, and leagues that promote messages of peace,, inclusion, and tolerance can promote others to consider the same behaviours

-Major sporting events also have the potential to be used as a platform to promote and encourage peace and inclusion

-Sport offers communities a space that encourages interactions between different groups, as well as maximizes the promotion of respect and understanding

-Sport can also encourage discussions surrounding topics such as prioritizing safeguarding and child protection in sport, reducing gender-based violence in sport, and protecting the rights of communities and the labour force affected by major events

## **SDG #17: Strengthen the means of implementation & revitalize the global partnership for sustainable development**

### ***Sport related-***

-Sport for development and peace efforts catalyze global partnerships and increase networking among governments, donors, NGOs, and sport organizations worldwide

-It is crucial to clearly communicate that sport can be used as an effective means to achieve the previously mentioned targets (i.e., explain how it can address diverse societal problems, while also providing evidence)

### **Critiques-**

-A lot of them are unrealistic for the time frame they are working for or proposing

-they are broad, there are too many targets promising

-They don't break it down enough or take it piece by piece, they expect a large change

-Who is going to pay for these expenses? With the US cutting 65 million dollars towards Haitians?

-It is overwhelming, they say a lot, they want to accomplish a large scale or problems in the world.

Week 3,1

Key Terms

**Determinants of Health** - The interconnected factors that determine an individual's health status

Key determinants of Health-

- Individual characteristics

-Genetic Makeup: predisposed to diseases, health and problems

-Sex: different issues for sexes like prostate cancer

-Age: different risks

- Physical Environment

-Factors in the natural environment ( air quality, water equality, etc) and the human built environment (housing, road design, sanitation) that influence individual and public health

-Water Sanitation, air pollution,

-Indoor cooking (example)

- Employment and working Conditions

-Safety

-Ability to earn money

-Decent works and not indecent( sex working and child labour)

- Healthy behaviors and Coping Skills

-preventative behaviours and practices

-food

- smoking
- alcohol
- Driving
- Coping skills

- Access to Health Services

-Fairly clear

-If you are sick and cannot access services, it has a negative influence on health

-Health services can promote good health too

- Healthy child Development

-Care

-Nourishment: impact on meeting biological potential, enrolling in school and staying in school ( breakfast if there were clubs for breakfast because it is the most important for learning.

- Governance, policies and Interventions

-The approach that governments take to different policies and programs in the health sector and in other sectors

-If a government promotes high levels of education attainment and has universal health care, more like the citizens will have better health

(For example, bike lanes in quebec, snow tires in the winter)

- Social Environment

Key terms

**Socio Economic status-** An individual living conditions that are mostly based on income, occupation and education.

**Education-** linked with income and knowledge

**Social Capital-** relationships and social networks of reciprocity that enable social action ( you scratch my back i scratch yours)

**Culture-** A set of rules are standards given by the members of a society that when acted upon by the members, the behaviour is considered proper and acceptable.

**Gender Norms-**Different diseases, treatments by society, different incomes

**Infant Mortality Rate-** The number of deaths of infants under the age of 1 year per 1,000 live births in a given year

**Life expectancy at birth-** The average number of years a newborn baby could expect to live if the current mortality trends were to continue for the rest of the newborn's life.

**Maternal Mortality Ratio-** The number of women who die from a pregnancy or childbirth complications per 100,00 live births in a given year.

**Neonatal Mortality Rate-** The number of deaths to infants under 28 days of age per 1,000 live births in a given year

**Under -5 Mortality rate( children mortality rate) -**The probability that a newborn baby will die before reaching the age of 5, expressed per 1,000 live births

**Morbidity-**Sickness or departure due to subjective or objective physiological or psychological state of well being

**Mortality**-Death

**Prevalence**- Number of people suffering from a certain health condition over a specified time period

**Incidence**-the RATE at which new cases of a disease occur in a population

Measuring the Burden of Disease

**Health -Adjusted Life Expectancy (HALE)**

- Expected number of years to believe in what might be termed equivalent of good health
- Health subtracted expectancy measure
- Free from defect or diseases

To calculate HALE, the years of ill health are weighted according to severity then subtracted from overall life expectancy

**Disability-Adjusted Life Year( DALY)**

- The sum of years lost due to premature death and years lived with disability.
- DALYS are also defined as years of healthy life lost
- A health - gap measure
- Indicates losses due to illness, disability and premature death in a population

Burden of Disease Data

- leading cases of illness, disability and death in the world
- Variations in these causes by age, sex, ethnicity and socioeconomic status
- Changes over time and how these causes might change in the future

Overview patterns and trends in the Burden of Disease

- People in much of the world are living longer than before and are dying at lower rates than earlier
- As people live longer, there is an increase in the years people live with disability
- The burden of disease is predominantly **Non -communicable in all World Bank regions, except sub-saharan africa.**
- Over the last few decades, the burden of disease has shifted increasingly towards non communicable disease in all World Bank regions
- This shift has been fuelled among other things, by a reduction in communicable diseases and the aging of populations, because they are either smoking more, driving cars, junk foods and working out less.

Causes of Death by Region

- Higher income countries tend to have a greater burden of noncommunicable diseases
- The lowest income countries have a greater burden of communicable diseases
- Africa and South Asia are set apart by their large burdens of communicable disease

The Burden of Deaths and Disease Within Low and Middle Income Countries

- Rural people will be less healthy
- Disadvantaged ethnic minorities will be less healthy
- Females will suffer from their weak social positions
- Poor people will be less healthy
- Uneducated people will be less health

Risk Factors

Key terms

**Risk Factor**-An aspect or personal behaviour or lifestyle, environmental exposure or in an born or inherited characteristic that on the basis of epidemiological evidence, is known to be associated with health related conditions considered important to prevent

Most important risk factors in low and middle income countries are malnutrition, high blood pressure, high cholesterol, smoking and unsafe sex.

Population Growth

- Current world population is 7.2 billion and growing
- Majority of population growth will occur in low and middle income countries
- Puts pressure on the environment
- Creates need for more infrastructure and services

Demography and Health -Population Aging

- Population of the world is aging
- Affects burden of disease because people will be living longer with morbidity and disabilities
- Affects healthcare financing because of costs of caring for older people

Urbanization

- In the last decade most of the world's population has lived their entire life in urban areas
- People are continuing to move from rural to urban areas especially in low and middle income countries
- There is enormous population pressure on urban infrastructure such as water and sanitation (cape town in africa will be running out of water in the summer)

The Demographic Divide

- Highest income countries- low fertility, often declining populations, aging populations
- Lowest income countries- relatively high fertility, growing populations

Key Term

**\*\*The Demographic Transition**-Shift from pattern of high fertility and high mortality to low fertility and low mortality

- Mortality declines with better hygiene and nutrition

- Population grows with gaps between births and deaths
- Fertility declines
- Populations growth slows and older share of population increases as births and deaths equalize

**\*\*The Epidemiologic Transition-** Shift from burden of disease dominated by communicable to burden of diseases dominated by non communicable disease

- Low income countries are going through it now
- First and historically, high fluctuating mortality, related to very poor health conditions , epidemics and famine
- Then progressive declines in mortality as epidemics become less frequent
- Finally future declines in mortality increases in life expectancy and the predominance of noncommunicable diseases
- The pace of this transition depends on factors related to the determinants of health

Projecting The Burden of Disease

- Difficult to predict but can use models to project
- Substantial changes projected to 2030
- Low and lower middle income countries will shift away from communicable disease
- Causes associated with aging will increase in importance
- Mental health issues will increase in importance for all income groups

The development Challenge of Improving Health

- Health usually increases as national income increases
- Some countries have achieved higher life expectancies than their incomes would predict
- This is possible with investments in healthcare, education, good hygiene and low cost services that have a high impact such as vaccination programs

Week 3,2

The Development Challenge of Improving Health

- Health usually increases as national income increases
- Some countries have achieved higher life expectancies than their incomes would predict ( upper north canada, us slums)
- This is possible with investments in nutrition, education , good hygiene, and low cost services that have a high impact such as vaccination programs
- Need a functioning health system

What is Health system?

- Agencies that plan, fund and regulate health care
- The money that finances health care
- Those who provide preventive health services
- Those who provide clinical services

-Those who provide specialized inputs into health care, such as the education of healthcare professionals and the productions of drugs and medical devices

## The Goals and Functions of a Health System

### Goals:

- Good health
- Responsiveness to the expectations of the population
- Fairness of financial contribution

### Functions:

- Provide health services
- Raise money that can be spent on health, referred to as "resource generation"
- Pay for health services, referred to as "financing"
- Govern and regulate the health system, referred to as "stewardship"

## Categorizing Health Services

-Some dimensions used to examine health systems:

- Approach of each type of health system to providing a basic package of health services as a 'right'
- Who owns health facilities (hospitals in Canada, who owns them? Its provincially owned)
- Manner in which insurance is operated
- Manner in which insurance schemes are financed

## Categorizing Health Services

- Most low income countries have fragmented health systems that include both public and private providers
- Many **middle income countries** have a system organized around a **national insurance scheme**
- Almost all high income countries have a national health insurance system (Canada)

Three countries-

- UK
- US
- Canada

Levels of Care

Key Terms

**Primary Care**-First point of contact( nurse or family doctor)

**Secondary Care**-Provided by some specialists physicians and general hospitals, where you go if your primary care provider can't do it

**Tertiary care**- Provided by an array of specialists physicians and specialized hospitals (places where people go where things are wrong like civic hospital).

-Many low and middle income countries have these levels organized by geographic area

### **The Roles of Public , Private and NGO sectors**

-Public Sectors are responsible for-

- Stewardship of the system
- Raising funds for the health system
- Making decisions about allocating those funds
- Establishing approaches to health insurance

-Private, For-profit Sector are responsible for-

- Involved in provision (providing supplying) of services including non licensed “medical practitioners”
- Involved in the operation of health clinics, hospitals, services and laboratories
- Can partner with the public sector or work under contract to the public sector
- Is involved in all countries

-NGO, Private, Not for Profit Sector-

- Often Involved in community based efforts to promote better health through education, improved water and sanitation
- Often carry out health services
- Can partner with the public sector or work under contract to the public sector

Health Sector Expenditure

Key Term

**Health Sector Expenditure-** Total health expenditure as a share of GDP, varies across countries ( gross domestic product)

- Wide range of private sector expenditure as share of total expenditure on health
- Poorer countries have the highest private expenditure

Key Health Sector Issues

- In general health systems in high income countries perform better than those in low and middle income countries
- Health systems of small groups of middle income countries rate higher in the WHO ranking than countries with higher incomes
- All systems struggle with a variety of challenges and constraints
- World health Organization( WHO)

Canada Health Act

-Tommy Douglas (Socialist, Saskatchewan) introduced universal public healthcare to Canada

-Adopted in 1984

-Does not say how healthcare should be delivered, so long as criteria and conditions are met

-There are 5 criteria and 2 conditions

**Criteria 1- Public administration**

- Intent: Provincial and Territorial health care insurance plans are operated on a non profit basis
- Operated by public authority, accountable to Provincial and Territorial Govts
- Record publicly audited

### **Criteria 2- Comprehensiveness**

-Must ensure all insured health services provided by hospitals, doctors and dentists( surgical dentists) or similar services are given by other healthcare providers (eg, nurse practitioners)

### **Criterion 3- Universality**

- All residents must be covered
- New Canadians may have to wait up to 3 months

### **Criterion 4- Portability**

- Can move from P/T to P/T and receive emergency services (billed to home province)
- Need permission for non-emergency visits

### **Criterion 5- Accessibility**

- Need reasonable access
- Not impeded by fees or discrimination
- Must provide compensation to doctors, dentists and hospitals

### **Conditions (2)**

- 1) Information: govts, must give info to federal ministry of health in relation to health care services
- 2) Recognition: govts must recognize federal financial contributions to health care services

Week 4,1

### **Non communicable Disease and Communicable Disease**

The Importance of Non Communicable Disease

-Burden of non communicable diseases are **greater** than burden of communicable diseases in low and middle and high income countries!

- The burden of NCDS will continue to increase as countries develop economically
- The risk factors relate in significant ways to lifestyle, much of which is within peoples control
- Often prevented at low cost, but expensive to treat

Key terms

**Non Communicable Diseases-** Cannot be spread by an infectious agent, they last a long time and they are often disabling and lead to death if not treated appropriately

-Also referred to as chronic diseases and degenerative diseases (diseases that get worse over time)

The costs and Consequences

- Direct costs of treatment
- Indirect costs from low productivity

-Low income countries are simultaneously facing burden of communicable diseases and noncommunicable diseases

### Cardiovascular Disease

-Ischemic Heart disease and stroke referred to as a cardiovascular disease and makes up 25% of global deaths

- Ischemic heart disease caused about 7 million deaths in 2010 and is the **leading specific cause of death globally for all age groups and both sexes**

Key term

**Ischemic Heart Disease-** a disturbance of the heart function due to inadequate oxygen supply to the heart muscle

-Risk Factors include, sex, ethnicity, hypertension, tobacco use, high cholesterol , lack of physical activity, excessive alcohol consumption

### Diabetes

-382 million people and 8.3% of adults worldwide had diabetes in 2013

-**About 80% of all deaths from diabetes are in low and middle income countries**

-Costly complications: blindness, kidney failure, amputation at lower extremities and stroke

-Family history is a risk factory for both types, types 1 and 2

-Diet and obesity are also risk factors for type 2

### Addressing Diabetes

-Avoiding being overweight is the single most important way to prevent type 2 diabetes

-**Treating people with type 1 diabetes with insulin is a cost effective investment, although difficult to afford or manage in the poorest countries**

-For all diabetics, it is cost-effective to control hypertension because of complications (hypertension is high blood pressure)

### Cancer

-Unique challenge because there are many forms and each may have different characteristics

-All forms of cancer made up about 15% of all deaths and 7.6% of DALYS and for all age groups and both sexes in 2010

-**Breast cancer is the leading cause of cancer death in low and middle income countries and for women globally**

### Addressing Cancer

-Tobacco control is **first priority**

-Address infectious agents associated with cancer like hepatitis, H.pylori and schistosomiasis( hepatitis is an inflammation in the liver)

-Prevention is the most cost effective method because cancer treatment can require expensive interventions over a long period of time

-Early detection is also very important

## Mental Disorders

- Caused 7.4% of DALYs lost in low and middle income countries in 2010
- Unipolar depressive disorders (depression) , schizophrenia, anxiety disorders, and bipolar affective disorder contribute the largest share
- Associated directly with a low burden of deaths
- Start at a young age, are chronic and often cannot be cured and produce large amounts of disability  
*WHO recommends that countries ...*
- Have mental health policy and ensure there is a unit of government responsible for mental health
- Budget for mental health programs
- Train primary healthcare workers in mental health
- Integrate mental health into the primary healthcare program
- Community-based approaches to psychosocial support, basic treatment and referral

## Vision and Hearing Loss

- Aging of populations globally and improved life expectancy increase importance
- Over 80% of vision loss can be prevented or cured
- About 90% of those who suffer visual impairment live in low and middle income countries
- In 2014, 5% of the world's population had disabling hearing loss including 328 million adults and 32 million children.
- The World Health Assembly approved in 2013 a global action plan for universal eye health
- No coherent plan for hearing loss yet but half of all cases of hearing loss can be addressed by primary prevention

## Tobacco Use

- Third leading attributable risk factor for death globally
  - About 5 million deaths annually associated with tobacco use, half of those in low and middle income countries
  - Most common tobacco-related deaths are CVD(cardiovascular), diseases of the respiratory system and cancer
  - Usage increasing in men in low and middle income countries and women in all regions
- How to prevent:
- The 'Framework Convention on Tobacco' (2003)
  - Taxing cigarettes at higher rates would be effective for reducing consumption
  - Legal restrictions on smoking
  - Ban on cigarette advertising
  - Biggest impact in high income settings has come from comprehensive control programs

## Alcohol

- Alcohol use disorders make up 0.7% of all DALYS globally
- Ninth leading attribute risk factor for global deaths
- High risk drinking increases risk for hypertension heart disease, hormonal problems and liver and pancreatic damage

-Intoxication associated with injuries and "high risk" sexual encounters

How to prevent:

-Very few countries have made coherent efforts to reduce alcohol consumption

-Ta, but beware of illicit (illegal) alcohol consumption

-Limiting hours when alcohol can be bought or sold and checking sobriety of drivers has shown some success

-Countries should take "step-wise" approach to reducing alcohol by adding policies over time

High Blood Pressure, High Cholesterol and Obesity

-Food labelling

-Work with producers to reduce sugar and salt in food

-Mass health education programs combined with interventions involving direct communication

-Public policies and community layouts that promote physical activity

**Future challenges with Non communicable Diseases:**

-Number of new cases of non communicable diseases will grow because of aging, urbanization, globalization and lifestyle changes

-Number of people with disease will also rise because the disease are chronic

-Low income countries will have to deal with communicable and non communicable disease simultaneously, as well as with injuries

**Communicable Diseases**

The importance of Communicable Diseases

-Causes of 31% of deaths and 40% of DALYS in low and middle income countries

-Disproportionately affect the poor

-Enormous economic consequences

-Relevance to MDGS and SDGS

**-Much of the burden of communicable disease is avoidable many can be prevented or treated**

Key Terms

**Communicable Disease**-Synonymous with infectious disease, can be transmitted human to human , animal to animal , human to animal and includes infectious and parasitic diseases

**Case**-An individual with a particular disease

**Case fatality rate**- The proportion of people with a particular condition (Cases) who die from that condition

**Control (Disease Control)**- reducing the incidence and prevalence of a disease to an acceptable level

**Elimination(of disease)**-Reducing the incidence of a disease in a specific area to zero

**Emerging Infectious Disease**-A newly discovered disease

**Eradication**-Termination of all cases of a disease and its transmission globally (like small pox)

**Parasite**- An organism that lives in or on another organism and takes its nourishment from that organism (mosquito)

**Reemerging infectious disease**- An existing disease that has increased in incidence, spread to new places or has taken on new forms

### Transmission paths for Communicable Diseases

- Foodborne - Salmonella, E.coli
- Waterborne- Cholera, rotavirus
- Sexual or blood borne- Hepatitis, HIV
- Vector-borne- Malaria, onchocerciasis-river blindness
- Inhalation-Tuberculosis, Influenza, meningitis
- Nontraumatic contact- Anthrax
- Traumatic contact- Rabies

### Different Control Measures

- Vaccination
- Mass chemotherapy
- Vector control
- Improved water, sanitation hygiene
- Improved care seeking, disease recognition
- Case management (treatment) and improved caregiving
- Case surveillance, reporting and containment
- Behavioural change

### The cost and consequences of Communicable Diseases

- Constrain health and development of children, affecting schooling and adulting productivity
- Strong stigma and discrimination associated with HIV, TB and others such as leprosy
- Limit productivity and income of adult workers
- Cost of treatment burden families
- High rates of communicable diseases reduce investment in a country's development

### The Burden of HIV/AIDS (2013)

- Number of people living with HIV/AIDS is 35 million
- Prevalence among adults aged 15-49 is 0.8%
- Number of new HIV infections is 2.1 million
- Number of HIV-related deaths is 1.5 million
- Proportion of all adults living with HIV receiving ART is 38%
- When HIV first appears in a population, it is generally concentrated in sex workers, men who have sex with men, or injection drug users
- Highest prevalence rate of HIV/AIDS is sub Saharan Africa is 4.7% of the adults aged 15-49
- New HIV infections predominantly in people aged 15-24 or infants from mother to child transmission

### HIV treatment

- Global community has made a commitment to trying to ensure that all people with HIV are placed on treatment when clinically eligible
- Clinically eligible- CD4 count is below 500
- By the end of 2012, about 9.7 million people were on treatment
- About 34% of the eligible adults in low and middle income countries are being treated

#### The Costs and Consequences of HIV/AIDS

- Enormous impacts in high prevalence countries that go beyond morbidity and mortality
- A person with full blown, untreated AIDS cannot work and will become dependent on others for care
- Created exceptional number of orphans
- Highly stigmatized condition
- Direct cost of treatment high for the poorest countries

#### Addressing the Burden of HIV/AIDS

- Need for a vaccine
- Successful efforts have included strong political leadership and open communication
- Approach to prevention must vary with nature of epidemic
- Efforts need to combine education and behavioural change, biomedical approaches, structural approaches and early treatment

Successful efforts will involve:

- Condom promotion
- Screening and treatment for STIS
- Prevention of mother-to child transmission
- Voluntary male medical circumcision
- Interventions that target populations that transmit the virus from high risk to low risk populations

#### 90-90-90 Goals by 2020

- 90 percent of the people with HIV will know their HIV status
- 90 percent of those with HIV will be receiving antiretroviral therapy
- 90 percent of those being treated will have suppressed viral loads

#### Critical Challenges in HIV/AIDS

- Developing a vaccine
- Cost effective approaches to prevention in different settings
- Universal treatment for all those who are eligible
- Financing treatment
- Management of TB and HIV co infection

END OF HIV/AIDS

#### The Burden of TB(2013)

- Number of people living with TB is 11 million
- Number of new cases is 9 million
- Number of TB deaths is 1.5million
- Proportion of new cases with multidrug resistant TB is 3.5%
- India had 24% of all global cases and China had 11%

#### The Burden of TB

- An untreated person with active pulmonary TB can infect 10-15 people annually
- About two-thirds of those with active TB disease will die of the disease if not treated properly
- TB remains latent in the bodies (existing but not yet developed) about 90% of those infected and they are not sick but can develop TB later

#### The costs and Consequences of TB

- TB patients lose about 60% of their individual annual income and 40% of household income due to falling ill with TB
- Could be financially catastrophic to many families
- Stigmatized condition
- Economic growth of a country inversely correlated with the rate of TB

#### Addressing the Burden of TB

- Bacillus Calmette-Guerin (BCG) vaccine has limited impact on incidence or prevalence
- Control of TB depends on effective treatment of active tuberculosis and social determinants
- WHO recommends a 6 month regimen for drug-susceptible disease, including four drugs, highly cost effective, 5-50\$ per DALY averted
- Patient adherence with TB regimen is essential

#### Management of TB/HIV co infection

- TB is an opportunistic infection of HIV

##### "Scaling up the three I's"

- Intensified case finding
- Giving Isoniazid (antibiotic) to people with HIV to help prevent them getting TB
- Enhancing infection control in healthcare settings so that TB does not spread

#### Challenges in TB control

- Need for more effective vaccines, inexpensive and rapid diagnostics and drug therapy that will lessen duration of treatment
- Improving identification and treatment of MDR-TB and XDR-TB
- Further efforts at linking all providers of TB diagnosis and treatment with national TB control programs

### The Burden of Malaria(2013)

- Number of people at risk of infection is 3.2 million
- Number of malaria cases-198 million
- Number of malaria related deaths-548,00
- Burden of malaria-related deaths is 90% in Africa, 78% occurred in children under 5
- Proportion of households owning at least one insecticide-treated bed net is 67%
- In 2014, 97 countries had ongoing transmission
- Leading cause of DALY in sub Saharan African among all age groups
- The most important risk factor for malaria is being bitten by a mosquito that carries the malaria parasite
- Pregnant women who contract malaria are at high risk of giving birth to low birth weight children

### Costs and Consequences of Malaria

- Individuals often have malaria up to 5 times per years
- Indirect costs are greater than direct costs of treatment due to lost days of work
- 'Roll Back Malaria' (partnership) suggests that economic costs in countries with a high burden are equal to 1.3% of GDP per year (gross domestic product)

### Addressing the Burden of Malaria

#### Key interventions:

- Prompt treatment of those infected, based on confirmed diagnosis
- Intermittent preventive therapy for pregnant women
- Long lasting insecticide treated bed nets for people living in malarial zones
- Indoor residual spraying in malarial zones

### The Burden of Diarrheal Disease

- Mortality has decreased significantly in the past 30 years, from an estimated 4.6 million deaths in the 1980s to 740,00 deaths in 2013
- Most significantly impacts the poor
- Fourth leading cause of death for children under 5 in low and middle income countries
- Third leading cause of DALYS among children under 5

### Addressing the Burden of Diarrhea

#### -Disease Prevention Strategies:

- Promotion of exclusive breastfeeding for the first 6 months
- Improved complementary feeding, after six months
- Rotavirus and measles immunization
- Improving access to clean water supply and sanitation
- Case management interventions include oral rehydration therapy, Zinc supplementation and selective antibiotics as appropriate
- Oral Rehydration Therapy (ORT) is the most cost effective but only about 49% of cases are managed with ORT or home fluids

- Zinc supplementation for 10-14 days during and after diarrhea could prevent 300,00 deaths per year

#### Future Challenges

- Strengthening the surveillance of disease at the local, national and global levels
- The lack of adequately trained and appropriately deployed human resources for health
- The challenge of financing enhanced efforts
- Scientific and technical challenges
  - Develop models in low and middle income countries to provide chronic care of people with HIV/AIDS

#### Week 4,2

#### Child Health

- United Nations International Children's Emergency Fund

#### The Importance of Child Health

- 8.8 million children under the age of 5 die each year
- Many of these deaths are preventable
- Children are particularly vulnerable population
- Closely linked with poverty
- Insufficient progress has been made in certain parts of the world in reducing childhood morbidity and mortality

#### Key Terms

**Perinatal**-first week of life

**Neonatal**-referring to the first months of life

**Infant**-Referring to the first year of life

**Under 5**-Referring to children 0-4 years old

#### Children under 5 years old

- 99% of childhood deaths are in low and middle income countries
- Half of these deaths occur in India, Nigeria, Democratic Republic of the Congo, Pakistan and China
- 44% of under 5 child deaths occur among neonates
- Rates and causes vary across and within countries
- General trend is decline, but rates of decline also vary considerably by region

#### Pneumonia

- Children under 5 in low and middle income countries average 3-6 acute respiratory infections per years
- More severe and cause higher rates of death in low and middle income countries
- Leading infectious cause of death globally in children under 5

-Upper respiratory tract infectious include the common cold and ear infections and lower respiratory infections include bronchiolitis and pneumonia

#### Diarrhea

- Second -leading infectious cause of young child death
- Caused dehydration, loss of nutrition or wasting (no nutrition in the muscles) and damage to the intestines
- Children under 5 in low and middle income countries have around 3-4 cases per year, those aged 6-11 months have almost double that

#### Malaria

- Cause of almost 600,000 child deaths per year
- Leading cause of death in children under 5 in Sub Saharan Africa
- Extremely high morbidity , estimate some people in sub saharan africa have about five episode per year

#### HIV/AIDS

- In 2013, there were 200,000 newborns infected with HIV and more than 90% of them were in Sub saharan Africa
- Causes 2% of deaths in children under 5
- A newborn has a 15-49% chance of being infected from an HIV positive woman who is not receiving antiretroviral

#### Measles

- Children under 5 years and either vitamin A deficient or HIV infected are more vulnerable to complications
- Deaths decreased by 75% globally 2000-2013
- Still a leading cause of death of children under 5**
- Caused 2% of deaths in children under 5

#### Soil Transmitted Helminths (Worms that affect humans intestines)

- Roundworm, hookworm and whipworm
- 880 million children were at risk of infection with soil transmitted helminths in 2012
- Infections can lead to severe morbidity, such as iron deficiency anemia
- Burden of several worms highest for 6 or 7 years old
- Worms that affect humans intestines

#### Additional Comments on Neonatal Mortality

- 44% of annual under 5 deaths occur within the first month ( neonates) of life
- 73% of deaths in first month occur in first week

- Insufficient progress in reducing neonatal death rate
- Every day that a child lives increases the likelihood that he or she will stay alive

#### Risk factors for Neonatal, Infant and Child Deaths

- Social determinants of health and poverty
- Mothers nutritional and health status, and education
- Access to trained healthcare provider to attend birth and provide counselling
- Water quality and sanitation
- War and conflicts, this interferes with food and nutrition and hospital care

#### Critical Child Health Interventions

- Life course approach to think about interventions
- Ensuring a healthy and well nourished mother
- Prenatal care and micronutrient supplementation for the mother to be
- Prevention of mother to child transmission of HIV
- Attendance at delivery by a skilled birth attendant and referral for emergency obstetric care if needed
- Appropriate care of the newborn and referral if needed
- Kangaroo mother care( holding infant close to you ,skin to skin contact, keeping the baby warm)
- Early and exclusive breastfeeding for six months
- Hygienic introduction of diverse complementary foods
- Managing pneumonia and diarrhea
- Immunization
- Bednets for malaria and regular drug administration for worms

#### Community Based approaches to Improving Child Health

- Women's groups to raise awareness of maternal, fetal and neonatal issues
- Community based promotion of hygiene, umbilical cord care, keeping the newborn baby warm, exclusive breastfeeding can reduce neonatal mortality 10-40%

#### Integrated Management of Childhood Illness

- Recognized the importance of looking at the whole child and not just treating one symptom or providing one intervention screen for other symptoms
- Recognized need for multilevel care: health system, local health center, family and community

#### The Cost and Consequences of Child Morbidity and Mortality

- High cost of caring for a sick child
- Potential long term disability
- Poor school attendance and performance

Week 5, 1

Gender and Health, Poverty , Education and Health

## Gender and Health

- Focus more on women: greater marginalization, example drug trials because prescription drugs are tried more on men than they are on women)
- Gender-Masculine, Feminine: socially constructed/culturally constructed, not biologically given (between the ears)
- Sex-Man, woman, male, female, biologically given(between the legs)

## Robertson (2002)

- Health practices 'cannot be fully understood outside of the social contexts within which they emerge
- Men die sooner (1-7 years earlier), kill themselves more often, more likely to smoke, less likely to see a doctor
- Tied to masculinity? Men are more likely to see a doctor when they are married

## Masculinity Robertson (2002)

- Seen as binary to femininity
- Masculinity linked to lower levels of social support:
  - Less help seeking for psych problems
  - Lower levels of same sex intimacy
  - Higher rates of homophobia
  - Increased drug and alcohol use
  - Less consistent use of homophobia
  - Increased cardiovascular stressors
  - More sexual partners
  - Belief that relations between men and women are inherently adversarial (hostile)

## Genetic Link-Nature vs Nurture argument

## More Masculinity-

### Key Term

**Role theory-** Social expectations about a status in society that produces conformity to a role and its functions

- Get rewarded or sanctioned for behaviour, but can be difficult to fill/maintain roles (sex roles strain from unemployment for man)
- 'Being a man' can kill you
- Role theory challenged by other researchers, challenge binaries: masculinities

## Differences between the Health of Men and Women

- Women have higher life expectancy
- 19 conditions that disproportionately affect women
- Some that are specific to women:
  - Maternal conditions
  - Cancers that affect females
  - Discrimination, such as fire or burns
- Some related to females living longer:

- Alzheimer's disease
- Cardiovascular disease
- Cerebrovascular disease
- Osteoarthritis
- Age-related vision disorders

### Determinants of Women's Health

-Related to sex or gender

-Biological Determinants-

- Unique risks: due to menstruation or pregnancy
- Increased susceptibility to STDs

-Social Determinants

- Gender norms that put females at a disadvantage
- Inferior status leading to social, health and economic problems

### The Burden of Health Conditions for Females

-Sex selective abortion of females: Prevalent in china and india

-Deaths of young girls due to male sex preference: Receive less attention, poorer nutrition, less access to healthcare

-Female genital cutting- You will not marry because you are not circumcised

-Increased susceptibility to sexually transmitted infections

### Additional Conditions

-Violence and Sexual Abuse- Rape as a tool of war, within the home

-Maternal morbidity and mortality- 50 times the risk of dying in Sub Saharan Africa

-Unsafe abortion -13% of maternal deaths

### Key Term

**(burden of health condition for females)Obstetric Fistula-** A hole in a females vagina, uterus (birth canal) caused by the female being in prolonged labour, leaving her incontinent of urine or feces. This leads to isolation from her family and exclusion from community. There is a lack of emergency care and prolonged labour can continue.

-Cardiovascular disease- leading cause of death worldwide, increasing in women

### The Costs and Consequences of Women's Health Problems

-Social isolation is a social cost of violence against women

-Social impacts of maternal mortality during birth:women are primary caregivers for children and if a mother dies, her young children can die as well

-Economic costs:

-Direct costs of care for women who experience violence and health problems

-Indirect costs of lost productivity and contribution to family both inside and outside the home

### Key Interventions

- Family planning: only 8% of sterilizations worldwide are in men
- Behaviour change to promote safer sexual practices
- Measure to reduce intimate partner violence
- Reduce three delays to cut maternal death:
  - Delay in transporting women to the hospital
  - Delay in identifying complications and seeking care
  - Delay in emergency obstetric care in hospitals
- Enhancing ability to deal with unsafe abortion

#### Addressing Future Challenges

- Improve nutritional status of females
- Enhance access to education
- Encourage communities and populations to put a greater value on women's health and women
- Put a greater emphasis on females as people rather than as child bearers

#### Week 5, 2

#### Poverty, Education and Health

#### Health and Education

- Three ways health and Education are connected :
  - Intergenerational links- Health and Education of the parents will affect the Health and Education of their children
  - Prevention and Illness- Child's mother education is a predictor to the child's ability to prevent illness(knowledge of immunizations)
  - Malnutrition and Disease- Affect cognitive development and school performance

#### Health, Productivity and Earnings

- Longevity and higher lifetime earnings
- Increased productivity among healthy workers
- Less absence from work due to illness ability to continue earning

#### The Costs of Illness

- Treatment and Drugs- can force people under poverty line
- Absence from work
- Transportation to and from provider
- Cost of living with disability: polio can cause paralysis, leprosy deformity

#### Health and Equity

- Access to health services: poor, ethnic minorities, Aboriginal people, women
- Responsiveness to the needs of the people: above groups lack political voice

- Extent to which financing of health systems is fair: Low income countries( AND US to an extent) fail to protect citizens from healthcare costs
- Public subsidies sometimes received by better off people( India)

#### Cost -Effective Analysis

- Important tool for setting priorities for public health expenditure
- Method for comparing the cost of an investment with the amount of health that can be purchased with that investment
- Depends, among other things, on the cost of the intervention, the extent to which it can reduce morbidity, mortality, and disability and how effectively it can be implemented
- Rarely the only tool in making healthcare decisions

#### Week 6, 1 (Sarah Giles)

Social Determinants of Health:Not a life choice but a living condition we experience

- Housing
- Aboriginal Status
- Income
- Gender
- Early Childhood development
- Disability
- Food insecurity
- Health Services
- Race
- Education
- Unemployment ,job security

#### SDOH in Action

- Can't afford healthy food
- Malnourished but obese
- Type 2 diabetes have it harder to treat
- Can't work at all

#### Education

-Oxytocin Clinics

(These clinics proved a large dose of oxytocin to women in labour. More oxytocin allows for frequent contractions of the uterus to allow the baby to come out quicker. This is bad because it can rupture the uterus and it can rip itself open. They give the women opim or valium for the pain. When the babies are born, they are either unconscious or non breathing or both. Which can lead to the mother dying. These clinics can not be shut down because they have power.)

#### Religion

- If you're a Rohingya Muslim in Myanmar
- 12 year old girl, diarrhea and malnutrition-Received plumpy nut( a nutrition supplement )
- German nurse in van to give antibiotics to the girl. Van had blacked out windows

#### Gender

(Pakistan)

- More boys than girls
- Referrals were given to 31% of the girls, this is a low number
- Boys inherit the money, receive an education, take care of the parents

#### Food Insecurity

(Nigeria)

- Drought
- Boko Haram, people flee
- Fuel burns from the boats