

Health Terminology & Concepts

(Very Rough definitions of terms used in Class)

CMPT 858

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Conditions

- Chronic disease/condition
 - Longstanding
- Infectious disease
 - Caused by a pathogen (agent) invading organism
 - Example pathogens: Bacteria, Viruses, Parasites, Prions, Protozoa, Fungi
 - Some of these are *communicable*(contagious) disease (Agent of infection can be passed on)
- Zoonotic Diseases (Zoonoses): Diseases caught from animals (West Nile Virus, Lyme's Disease, Avian flu, etc)

Epidemiological Concepts

- Epidemiology: Study of development, distribution of disease (illness, health) in population
- Incidence: Acquisition of a new illness/disease/condition
- Prevalence: Level of illness present in the population
- Population “at risk”: Population in danger of developing condition
- Risk factors: Things that increase likelihood of developing the condition

Intervention Stages

- Prevention
 - Primary Prevention: Prevent disease from occurring
- Finding cases followed by Treatment
 - Options
 - Wait for “Presentation” to healthcare system
 - Screening (looking for in seemingly healthy people)
 - Secondary prevention (early disease prevention)
 - Contact tracing (infectious diseases)

Multiple Conditions & Development

- Co-morbidities: Two diseases/conditions occurring together in the same person
- Co-infection: Two infections in same person
- Super-infection: One infection coming in after another was established
- Sequelae/Complications: Downstream consequences of a condition (slight differences)
- “Natural History” of illness: Stages of progression

Incidence

- Incident Cases: # of new cases occurring over some period of time
- Incidence Rate: Fraction of those at risk who become ill over some period of time
 - Example computation: $\frac{\# \text{ becoming ill in Year 2008}}{\# \text{ of those who were at risk in 2007}}$
 - Occasionally will see this over the entire population

Prevalence

- Prevalent Cases: # of cases in the population
- Prevalence Rate: Fraction of the population that has cases of the condition
- Example calculation:
 $\# \text{ of diabetics} / \# \text{ of people in the population}$

Relative Risk

- Risk of condition: Fraction of a group that has a condition (roughly, the likelihood of having the condition)
- Relative risk: The ratio of the risk of the condition in one group to that in a reference group
- Example: Relative Risk of gestational diabetes (GDM) for Aboriginal peoples compared to whites might be calculated as

Fraction of pregnancies leading to GDM in AB/

Fraction of pregnancies leading to GDM in whites

Odds Ratio

- Suppose p_X is chance of having condition for group X. Odds of having condition are $p_X/(1-p_X)$
- Odds ratio gives ratio of odds in two different groups (group X compared to reference group R)
 $(p_X/(1-p_X))/(p_R/(1-p_R))$

Sets of People for Infectious Diseases

- Susceptible: Can catch infection
- Infecteds (carriers): Those who have “caught” infection
- Infectives: Those who can spread infection
- Latent Infected: Those who have caught infection but are not infectious
- Asymptomatic Infectives: Those who have caught but are not showing signs
- Immune: Protected by immune system
 - May be protected through past “natural exposure” or through vaccination (innoculation)
- Quarantined: People (typically believed to be infected) that are taken away so can’t “mix” with remainder of population

*Note that these sets are not meant to be disjoint

Infectious Disease Terms

- Latent period: Period between infection and onset of infectiousness (infectivity)
- Infectious period: Period of time that infectious (communicable – can spread infection)
- Incubation period: Period between infection and onset of symptoms
 - This is sometimes the same as the latent period

Infectious Disease Terms

- Notifiable (reportable) infection: Infection that has to be reported to centralized healthcare system
- Cases: People with the infection who have been recognized by the medical care system
- Contacts: People who are believed to have come into contact with cases
- Contact tracing: Locating contacts based on case information

Things You Should Know about Particular Conditions Discussed

- Diabetes
 - Overweight/obesity is major risk factor for diabetes
 - Diabetes greatly elevates risk of kidney (renal) problems, heart disease, eye problems, ...
- Tuberculosis
 - Latent phases (dormant, contained) – may last entire life
 - Active phases (active coughing, can spread)

Data Sources

- Administrative data: Data captured by the healthcare system for the sake of operations
- Clinical data: Data from medical/nursing offices
- Surveillance data: Data deliberately collected to better understand health context
- Clinical trials
- Intervention studies

Characteristics of Data

- Longitudinal data: Data sets that follow individuals over time [at several points of follow-up]
- Cross-sectional data: “Snapshot” of a population at a particular point in time
 - No ability to trace an individual’s evolution

Other Terms

- Mortality: Death
- Morbidity: Illness
- Natality: Birth
- In Utero: In the womb (during pregnancy)