Disease Detectives Cheat Sheet

by SESITH01 via cheatography.com/111028/cs/21608/

Epidemology Terms

Cluster- An aggregation of cases over a particular period closely grouped in time and space, regardless of whether the number is more than the expected number

Endemic Disease- Present at a continuous level throughout a population/geographic area; constant presence of an agent/health condition within a given geographic area/population; refers to the usual prevalence of an agent/condition.

Epidemic- Large numbers of people over a wide geographical area are affected.

Etiology- Study of the cause of a disease.

Fomite- A physical object that serves to transmit an infectious agent from person to person. An example of this is lice on a comb. The comb is the fomite and the lice are the agent that can make your hair itch.

Incubation Period- Time in between when a person comes into contact with a pathogen and when they first show symptoms or signs of disease.

Index Case- First patient in an epidemiological study (also known as patient zero or primary case).

Latent Period- Time in between when a person comes into contact with a pathogen and when they become infected.

Morbidity- Rate of disease in a population.

Mortality- Rate of death in a population.

Outbreak- More cases of a particular disease than expected in a given area or among a specialized group of people over a particular period of time.

Epidemology Terms (cont)

Pandemic- An epidemic occurring over several countries or continents and affecting a large proportion of the population.

Plague- A serious, potentially life-threatening infectious disease that is usually transmitted to humans by the bites of rodent fleas. It was one of the scourges of our early history. There are three major forms of the disease: bubonic, septicemic, and pneumonic.

Nosocomial Disease- An infection that is acquired in a hospital.

Risk- The probability that an individual will be affected by, or die from, an illness or injury within a stated time or age span.

Surveillance- The systematic and ongoing collection, analysis, interpretation, and dissemination of health data. The purpose of public health surveillance is to gain knowledge of the patterns of disease, injury, and other health problems in a community so that we can work towards their prevention and control.

Vector- An animal that transmits disease. For example, a mosquito is a vector for malaria.

Zoonosis- An infectious disease that is transmissible from animals to humans.

Symptomatic- Showing symptoms or signs of injury.

Asymptomatic- Showing no signs or symptoms, although can be carrier of disease.

Ten Steps to Investigating an Outbreak

Prepare the Field Work

Establish the Existence of an Outbreak

Verify the Diagnosis

Define and Identify Cases

Describe in Terms of Times, Place, and Person

Develop Hypothesis (Agent/host/environment)

Evaluate Hypothesis

Refine Hypothesis and do Additional Studies

Implement Control and Preventative Measures

Communicate Findings

Epidemiology Types

Classical Epidemiology- population oriented, studies community origins of health problems related to nutrition, environment, human behavior, and the psychological, social, and spiritual state of a population. The event is more aimed towards this type of epidemiology.

Clinical Epidemiology- studies patients in health care settings in order to improve the diagnosis and treatment of various diseases and the prognosis for patients already affected by a disease. These can be further divided into:

Infectious Disease Epidemiology- heavily dependent on laboratory support

Chronic Disease Epidemiology- dependent on complex sampling and statistical methods

By **SESITH01**
cheatography.com/sesith01/

Not published yet.
Last updated 24th January, 2020.

2 x 2 Table

	Disease	No Disease
Exposure	a	b
No Exposure	c	d

2 x 2 Equations

Odds Ratio - used in case-control study, $\frac{a \cdot d}{b \cdot c}$

Relative Risk - used in cohort study, $\frac{a/(a+b)}{c/(c+d)}$

Attack Rate - the rate that a group experienced an outcome or illness equal to the number sick divided by the total in that group. (There should be a high attack rate in those exposed and a low attack rate in those unexposed.)

For the exposed: $\frac{a}{a+b}$

For the unexposed: $\frac{c}{c+d}$

The P-value tells us whether the results of the study can be used. The P-value is the measure of how confident you are that your findings are correct. You can only trust your findings to be correct if the P-value is less than .05.

Study Designs Pros/Cons

Study Designs	Advantages	Disadvantages
Trial	Most Scientifically Sound Best Measure of Exposure	Time Consuming Unethical for Harmful Exposures Most Expensive
Cohort Study	Most Accurate Observational Study Good Measure of Exposure Correct Time Sequence Good for Rare Exposures Easy Risk Calculation	Time Consuming Expensive Bad for Rare Diseases Possible Loss of Follow-up
Case-Control Study	Can Study Rare Diseases Relatively Less Expensive and Relatively Fast Good for Rare Diseases Good for Long Latency Periods	Possible Time-Order Confusion Error in Recalling Exposure Only 1 outcome
Cross-Sectional Study	Fastest Least Expensive Good for more than 1 Outcome	Possible Time-Order Confusion Least Confidence in Findings

Five Step Process for Surveillance

1. Identify, define, and measure the health problem of interest

2. Collect and compile data about the problem (and if possible, factors that influence it)

3. Analyze and interpret these data

Five Step Process for Surveillance (cont)

4. Provide these data and their interpretation to those responsible for controlling the health problem

5. Monitor and periodically evaluate the usefulness and quality of surveillance to improve it for future use. Note that surveillance of a problem does not include actions to control the problem

Epidemiological Study Designs

Ecological- comparisons of geographical locations

Cross Sectional- a survey,health questionnaire, "snapshot in time"

Case-Control- compare people with and without disease to find common exposures

Cohort- compare people with and without exposures to see what happens to each

Randomized Controlled Trial- human experiment

Quasi Experiments - research similarities with traditional experimental design or RCT, but lack element of random assignment to treatment/control

Characteristics of Agents

Infectivity - capacity to cause infection in a susceptible host

Pathogenicity - capacity to cause disease in a host

Virulence - severity of disease that the agent causes to host

Disease Prevention

Primary prevention - early intervention to avoid initial exposure to agent of disease preventing the process from starting

Secondary prevention - during the latent stage (when the disease has just begun), process of screening and instituting treatment may prevent progression to symptomatic disease

Tertiary prevention - during the symptomatic stage (when the patient shows symptoms), intervention may arrest, slow, or reverse the progression of disease

Quaternary prevention - set of health activities to mitigate or avoid consequences of unnecessary/excessive intervention of the health system.

Methods of Reducing Risk

Cook meat, poultry, and eggs thoroughly.

Don't cross-contaminate one food with another.

Chill and refrigerate leftovers promptly.

Clean and wash all produce.

Report suspected foodborne illnesses to the local health department.