

Glossary

A

AGENT: A factor, such as a microorganism, chemical substance, or form of radiation, whose presence, excessive presence, or (in deficiency diseases) relative absence is essential for the occurrence of a disease.

ANAEROBIC: An organism that grows best in the absence of oxygen. An obligate anaerobe can only grow in the absence of oxygen.

ANALYTIC EPIDEMIOLOGY: The aspect of epidemiology concerned with the search for health-related causes and effects. Uses comparison groups, which provide baseline data, to quantify the association between exposures and outcomes, and test hypotheses about causal relationships.

ANALYTIC STUDY: A comparative study intended to identify and quantify associations, test hypotheses, and identify causes. Two common types are cohort study and case-control study.

ANTITOXIN: A medication that contains antibodies against a specific toxin and neutralizes the effects of the toxin. Administration of an antitoxin does not always lead to full recovery of the patient because antitoxin (such as botulinum antitoxin) may only bind to circulating toxin and not toxin already bound to the tissue.

ASSOCIATION: Statistical relationship between two or more events, characteristics, or other variables.

ATTACK RATE: A variant of an incident rate, applied to a narrowly defined population observed for a limited period of time, such as during an epidemic.

B

BAR CHART: A visual display of the size of the different categories of a variable. Each category or value of the variable is represented by a bar.

BIAS: Deviation of results or inferences from the truth, or processes leading to such systematic deviation. Any trend in the collection, analysis, interpretation, publication, or review of data that can lead to conclusions that are systematically different from the truth.

BIOLOGICAL TRANSMISSION: The indirect vector-borne transmission of an infectious agent in which the agent undergoes biologic changes within the vector before being transmitted to a new host.

BOILING: Boiling occurs at 100 C (or 212 F).

C

CARRIER: A person or animal without apparent disease who harbors a specific infectious agent and is capable of transmitting the agent to others. The carrier state may occur in an

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individual with an infection that is inapparent throughout its course (known as asymptomatic carrier), or during the incubation period, convalescence, and postconvalescence of an individual with a clinically recognizable disease. The carrier state may be of short or long duration (transient carrier or chronic carrier).

CASE: In epidemiology, a countable instance in the population or study group of a particular disease, health disorder, or condition under investigation. Sometimes, an individual with a particular disease.

CASE-CONTROL STUDY: A type of observational analytic study. Enrollment into the study is based on presence (“case”) or absence (“control”) of disease. Characteristics such as previous exposure are then compared between cases and controls.

CASE DEFINITION: A set of standard criteria for deciding whether a person has a particular disease or health-related condition, by specifying clinical criteria and limitations on time, place, and person.

CASE-FATALITY RATIO: The proportion of persons with a particular condition (cases) who die from that condition. The denominator is the number of incident cases; the numerator is the number of cause-specific deaths among those cases.

CAUSE OF DISEASE: A factor (characteristic, behavior, event, etc.) that directly influences the occurrence of disease. A reduction of the factor in the population should lead to a reduction in the occurrence of disease.

CHI-SQUARE TEST: A test of statistical significance that is used to determine how likely it is that an observed association between an exposure and a disease could have occurred due to chance alone, if the exposure was not actually related to the disease. The Chi-Square test is the test of choice when the expected values for each cell in a two-by-two table are at least 5.

CLINICAL CHARACTERISTICS: Information about the illness including signs and symptoms, time of onset, and results of tests and examinations.

CLUSTER: An aggregation of cases of a disease or other health-related condition, particularly cancer and birth defects, which are closely grouped in time and place. The number of cases may or may not exceed the expected number; frequently the expected number is not known.

Cohort: A well-defined group of people who have had a common experience or exposure, who are then followed up for the incidence of new diseases or events, as in a cohort or prospective study. A group of people born during a particular period or year is called a birth cohort.

COHORT STUDY: A type of observational analytic study. Enrollment into the study is based on exposure characteristics or membership in a group. Disease, death or other health-related outcomes are then ascertained and compared.

COMMON SOURCE OUTBREAK: An outbreak that results from a group of persons being exposed to a common noxious influence, such as an infectious agent or toxin. If the group is exposed over a relatively brief period of time, so that all cases occur within one incubation period, then the common source outbreak is further classified as a point source outbreak. In some common source outbreaks, persons may be exposed over a period of days, weeks, or longer, with the exposure being either intermittent or continuous.

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CONTACT: Exposure to a source of an infection, or a person so exposed.

Continuous common source outbreak: An outbreak in which persons are exposed to the same source but exposure is prolonged over a period of days, weeks, or longer.

CONTROL: In a case-control study, comparison group of person without disease.

CRANIAL NERVE DYSFUNCTION: Abnormal function of one or more of the 12 nerve pairs that originate from the base of the brain and brain stem (as opposed to the spinal cord). The cranial nerves innervate primarily the head and neck region (including the eyes, ears, mouth, tongue, pharynx, and larynx).

CRITICAL CONTROL POINT: Steps in the preparation of a food item where action can be taken to prevent or eliminate a food safety problem or reduce it to an acceptable level. Control of the problem at the critical control point is necessary because it will not be addressed in subsequent steps in the preparation of the food.

D

DEMOGRAPHIC INFORMATION: The “person” characteristics – age, sex, race, and occupation – of descriptive epidemiology used to characterize the population at risk.

DENOMINATOR: The lower portion of a fraction used to calculate a rate or ratio. In a rate, the denominator is usually the population (or population experience, as in person-years, etc.) at risk.

DESCRIPTIVE EPIDEMIOLOGY: The aspect of epidemiology concerned with the organizing and summarizing health-related data according to time, place, and person.

DIPLOPIA: Double vision. A common symptom of botulism.

DIRECT TRANSMISSION: The immediate transfer of an agent from a reservoir to a susceptible host by direct contact or droplet spread.

DISTRIBUTION: In epidemiology, the frequency and pattern of health-related characteristics and events in a population. In statistics, the observed or theoretical frequency of values of a variable.

DROPLET NUCLELI: The residue of dried droplets that may remain suspended in the air for long periods, may be blown over great distances, and are easily inhaled into the lungs and exhaled.

DROPLET SPREAD: The direct transmission of an infectious agent from a reservoir to a susceptible host by spray with relatively large, short-ranged aerosols produced by sneezing, coughing, or talking.

DYSARTHRIA: Difficulties in speech. A common symptom of botulism.

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DYSPHAGIA: Difficulties swallowing. A common symptom of botulism.

E

ENDEMIC DISEASE: The constant presence of a disease or infectious agent within a given geographic area or population group; may also refer to the usual prevalence of a given disease within such area or group.

ENVIRONMENTAL FACTOR: An extrinsic factor, (geology, climate, insects, sanitation, health services, etc.), which affects the agent and the opportunity for exposure.

ENVIRONMENTAL HEALTH ASSESSMENT: A focused investigation of a food or meal implicated in a foodborne disease outbreak. The assessment follows the implicated item from its raw ingredients to consumption by the consumer and considers how the causative agent, the host, and environmental conditions interacted to result in a foodborne disease.

EPI INFO: Epi Info is a series of program for use by public health professionals in conduction outbreak investigations, managing databases for public health surveillance, and general database and statistics applications. Epi Info can be used to develop a questionnaire, customize the data entry process, and enter and analyze data.

EPIDEMIC: The occurrence of more cases of disease than expected in a given area or among a specific group of people over a particular period of time.

EPIDEMIC CURVE: A histogram that shows the course of a disease outbreak or epidemic by plotting the number of cases by time of onset.

EPIDEMIOLOGY: The study of the distribution and determinants of health-related states or events in specified populations, and the application of this study to the control of health problems.

EPIDEMIOLOGIC TRIAD: The traditional model of infectious disease causation. Includes three components: an external agent, a susceptible host, an environment that brings the host and agent together, so that disease occurs.

EVALUATION: A process that attempts to determine as systematically and objectively as possible the relevance, effectiveness, and impact of activities in the light of their objectives.

EXPOSED (GROUP): A group whose members have been exposed to a supposed cause of disease or health state of interest, or posses a characteristic that is a determinant of the health outcome of interest.

F

FISHER EXACT TEST: A test of statistical significance that is used to determine how likely it is that an observed association between an exposure and a disease could have occurred due to

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chance alone, if the exposure was not actually related to the disease. The Fisher Exact Test is the test of choice when the expected values in a two-by-two table are less than 5.

FLOW DIAGRAM: A diagram of the steps used in the preparation of a food item. Each operation is represented by a rectangle and arrows indicate the flow of the process.

G

GRAM-POSITIVE: One of two large groups of bacteria based on their reaction to the Gram stain. Gram-positive bacteria appear purple as the result of staining; gram-negative bacteria appear pink. Gram staining is important in taxonomy and reflects differences in cell wall structure.

GRAPH: A way to show quantitative data visually, using a system of coordinates.

H

HEAT-LIABLE: Can be destroyed by heating.

HEAT-STABLE: Is not destroyed by heating.

HIGH-RISK GROUP: A group in the community with an elevated risk of disease.

HISTOGRAM: A graphic representation of the frequency distribution of a continuous variable. Rectangles are drawn in such a way that their bases lie on a linear scale representing different intervals, and their heights are proportional to the frequencies of the values within each of the intervals.

HOST: A person or other living organism that can be infected by an infectious agent under natural conditions.

HOST FACTOR: An intrinsic factor (age, race, sex, behaviors, etc.) which influences an individual's exposure, susceptibility, or response to a causative agent.

HYPOTHESIS: A supposition, arrived at from observation or reflection, that leads to refutable predictions. Any conjecture cast in a form that will allow it to be tested and refuted.

I

IMMUNITY, ACTIVE: Resistance developed in response to stimulus by an antigen (infecting agent or vaccine) and usually characterized by the presence of antibody produced by the host.

IMMUNITY, HERD: The resistance of a group to invasion and spread of an infectious agent, based on the resistance to infection of a high proportion of individual members of the group.

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The resistance is a product of the number of susceptible and the probability that those who are susceptible will come into contact with an infected person.

IMMUNITY, PASSIVE: Immunity conferred by an antibody produced in another host and acquired naturally by an infant from its mother or artificially by administration of an antibody-containing preparation (antiserum or immune globulin).

IMPACT MEASURES: One of the types of measures used to monitor the effectiveness of a program or intervention. Impact measures help describe the immediate results of a program such as changes in patient or physician knowledge or behavior (as opposed to changes in health status of the target population).

INCIDENCE RATE: A measure of the frequency with which an event, such as a new case of illness, occurs in a population over a period of time. The denominator is the population at risk; the numerator is the number of new cases occurring during a given period of time.

INCUBATION PERIOD: Time period between exposure to an infectious agent or toxin and the first appearance of symptoms of the infection or intoxication.

INDIRECT TRANSMISSION: The transmission of an agent carried from a reservoir to a susceptible host by suspended air particles or by animate (vector) or inanimate (vehicle) intermediaries.

L

LATENCY PERIOD: A period of subclinical or inapparent pathologic changes following exposure, ending with the onset of symptoms of chronic disease.

LINE LIST: A list of selected information about each case in an outbreak. Each column represents an important variable (e.g., patient identifier, age, sex) while each row represents a different case.

M

MATAMBRE: A traditional Argentinian dish prepared from meat, vegetables, spices and eggs.

MATE: Green tea.

MEAN, ARITHMETIC: The measure of central location commonly called the average. It is calculated by adding together all the individual values in a group of measurements and dividing by the number of values in the group.

MEASURE OF ASSOCIATION: A quantified relationship between exposure and disease; includes relative risk, rate ratio, odds ratio.

MEDIAN: The measure of central location which divides a set of data into two equal parts.

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MULTIPLE COMPARISONS: When a large number of associations are evaluated for a particular disease or outcome. Multiple comparisons are of concern because as the number of comparisons increases, the probability of finding a “statistically significant association” grows due to chance alone.

N

NUMERATOR: The upper portion of a fraction.

O

OBLIGATE ANAEROBE: An organism that can only grow in the absence of oxygen.

ODDS RATIO: A measure of association which quantifies the relationship between an exposure and health outcome from a comparative study; also known as the cross-product ratio.
OUTBREAK: Synonymous with epidemic. Sometimes the preferred word, as it may escape sensationalism associated with the word epidemic. Alternatively, a localized as opposed to generalized epidemic.

OUTCOME MEASURES: One of the types of measures used to monitor the effectiveness of a program or intervention. Outcome measures examine changes in the health status of the target population as the program is implemented such as mortality, morbidity, disability, or the quality of life.

P

PANDEMIC: An epidemic occurring over a very wide area (several countries or continents) and usually affecting a large proportion of the population.

PERCENTAGE The number of patients which a characteristic divided by the total number of patients with the characteristic.

pH: A measure of the acidity or alkalinity of a substance. A pH of 7 is considered neutral, a pH of less than 7 is acidic, and a pH of greater than 7 is alkaline.

POINT SOURCE OUTBREAK: An outbreak in which persons are exposed to the same source over a relatively brief period.

PREVALENCE: The number or proportion of cases or events or conditions in a given population.

PRION – A small proteinaceous particle that is believed to be responsible for the class of central nervous system diseases known as spongiform encephalopathies in animals and humans.

PROCESS MEASURES: One of the types of measures used to monitor the effectiveness of a program or intervention. Process measures help determine if a program has been implemented

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as planned. Process measures tend to count services and activities that result from the program.

PROPAGATED OUTBREAK: An outbreak that does not have a common source, but instead spread from person to person.

PROPORTION: A type of ratio in which the numerator is included in the denominator. The ratio of a part to the whole, expressed as a “decimal fraction” (e.g., 0.2), as a fraction (1/5), or, loosely, as a percentage (20%).

PROTECTIVE FACTOR: An aspect of personal behavior or lifestyle, an environmental exposure, or an inborn or inherited characteristic that is associated with a decreased occurrence of disease or other health-related event or condition.

PTOSIS: Drooping eyelids. A common symptom of botulism.

PULSED FIELD GEL ELECTROPHORESIS: A method of subtyping microorganisms based on their DNA composition. In pulsed field gel electrophoresis, the bacterial DNA is cut into pieces. The pieces are separated by placing them in a jelly-like substance (i.e., the gel) to which a pulsing electric field is applied. The electric field separates the DNA pieces across the gel based on size. The resulting DNA bands are made to fluoresce and are read under ultraviolet illumination.

p-VALUE: The probability that an observed association between an exposure and a disease could have occurred due to chance alone, if the exposure was not actually related to the disease.

R

RATE: an expression of the frequency with which an event occurs in a defined population.

RATIO: The value obtained by dividing one quantity by another.

RELATIVE RISK: A comparison of the risk of some health-related event such as disease or death in two groups.

RETROSPECTIVE COHORT STUDY: A cohort study in which data collection occurs after exposure has occurred. Unlike other cohort studies, retrospective cohort studies rely on historical exposure information.

RISK: The probability that an event will occur, e.g. that an individual will become ill or die within a stated period of time or age.

RISK FACTOR: An aspect of personal behavior or lifestyle, an environmental exposure, or an inborn or inherited characteristic that is associated with an increased occurrence of disease or other health-related event or condition.

RISK RATIO: A comparison of the risk of some health-related event such as disease or death in two groups.

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S

SEQUELA: (plural is sequelae) A disability or complication following as a consequence of a disease.

SPORADIC: A disease that occurs infrequently and irregularly.

SPORE: Reproductive cells produced by some bacteria. Spores are highly resistant to heat and other conditions and, therefore, allow the organism to survive during poor growth conditions.

T

TABLE: A set of data arranged in rows and columns.

TABLE SHELL: A table that is complete except for the data.

TREND: A long-term movement or change in frequency, usually upwards or downwards.

V

VARIABLE: Any characteristic or attribute that can be measured.

VITAL STATISTICS: Systematically tabulated information about births, marriages, divorces, and deaths, based on registration of these vital events.

W

WATER CONTENT: The amount of moisture in a substance that is readily available for a microorganism to grow. Water content can be limited by dehydration but is usually controlled by the addition of NaCl (i.e. table salt).

X

X-AXIS: The horizontal axis in a rectangular coordinate graph.

Y

Y-AXIS: The vertical axis in a rectangular coordinate graph.