

Introduction to Outbreak Investigation

Glossary



Active surveillance: process where health departments (or responsible agencies) actively initiate contact with clinicians, laboratories, or other data sources to seek out information about disease occurrence and cases

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.

Airborne transmission: infection spread by droplet nuclei or dust, with particle spread more than three feet through the air.

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.

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.

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 the 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.

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.



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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.

Communicable period: period of time during which an infected host remains capable of transmitting the infective agent.

Contact transmission: spread of an agent directly (person-to-person) or indirectly, or by airborne droplets (from less than three feet away).

Control: in a case-control study, comparison group of persons without disease.

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

Direct transmission: the immediate transfer of an agent from a reservoir to a susceptible host by direct contact or droplet spread.

Dot map or dot plot: a visual display of the actual data points of a noncontinuous variable.

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.

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.

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



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Foodborne transmission: a type of disease transmission in which the infectious agent (which can be bacteria, parasites, viruses, fungi and their products, toxic substances not of microbial origin) is transmitted via ingestion of food.

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.

Index case: the first case that is known to investigators. Determining the index case can be helpful in determining the origin of a disease outbreak.

Immunization: the process of introducing weakened or killed germs or toxins into the body to induce the immune system to produce protective antibodies that will destroy the disease-causing agent if it enters the body at a later time.

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 time period.

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.

Isolation: restriction of movement and/or separation of persons ill with a contagious disease.

Line listing: a list of cases containing demographic characteristics and other key descriptions, including components of the case definition and laboratory test results.

Medical surveillance: the monitoring of potentially exposed individuals to detect early symptoms of disease.

Mode of transmission: the way or ways in which a disease is transmitted. Can be direct (person-to-person) or indirect (common vehicle or vector).

Molecular epidemiology: Subset of epidemiologic investigation that utilizes molecular laboratory techniques to detect outbreaks due to related strains of common serotypes.



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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.

Passive surveillance: provider-based approach of data collection, in which health departments/CDC wait for disease reports to be submitted by laboratories, clinicians, and/or the public.

Point source outbreak: outbreak indicative of common exposure to a contaminated vehicle or reservoir.

Population at risk: the total number of inhabitants of a given area or country who may contract the disease of interest.

Primary case: a person who acquires a disease from an exposure (to contaminated food, for instance).

Propagated outbreak: an outbreak that does not have a common source, but instead spreads from person to person.

Public health surveillance: the systematic collection, analysis, interpretation, and dissemination of health data on an ongoing basis, to gain knowledge of the pattern of disease occurrence and potential in a community, in order to control and prevent disease in the community

Quarantine: restriction of movement and/or separation of well persons presumed exposed to a contagious disease..

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

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.

Screening: the use of tests or examinations to identify unrecognized disease.

Secondary attack rate: a measure of the frequency of new cases of a disease among the contacts of known cases.

Secondary case: a person who gets a disease from exposure to a primary case.

Sentinel surveillance: a surveillance system in which a pre-arranged sample of reporting sources agrees to report all cases of one or more notifiable conditions.

