

## SIDARTHa GLOSSARY

The SIDARTHa Glossary is compiled to support the work of the project consortium and to generate a common understanding and language among the project participants and all interested stakeholders. It contains terms and definitions used in the SIDARTHa project. The definitions were derived by a systematic internet search and only from accredited sources in the fields of public health, epidemiology, emergency care, emergency preparedness and related fields. The specificity of the project and therefore the glossary is bridging different disciplines, mainly emergency medical care and public health. This explains that some terms have two meanings as they are used in these two different disciplines. The glossary can contain more than one definition per term. In general, the definitions were ranked/selected by usefulness for the SIDARTHa context and by source (1. World Health Organization, 2. European Union, 3. Centres for Disease Control and Prevention, 4. Worldbank, 5. Governmental bodies, universities and scientific/ professional groups).

The SIDARTHa glossary is continuously updated throughout the project time and is available in the latest version from the project's website: [www.sidartha.eu](http://www.sidartha.eu).

Please give reference to the SIDARTHa project group if you use terms from this glossary.

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### **Active surveillance**

The dynamic seeking of data from participants in the surveillance system on a regular basis. [1]

### **Acceptability**

The acceptability of a surveillance system for early outbreak detection is reflected by the willingness of participants and stakeholders to contribute to the data collection and analysis. [2]

### **Advanced Life Support (ALS)**

Medical interventions used to treat victims of respiratory and/or cardiac emergencies and stroke, including invasive techniques such as intubation and administration of drugs. [3]<sup>1</sup>

### **Advanced Medical Priority Dispatch System (AMPDS)**

Medically-approved, unified system used by medical dispatch centres to dispatch appropriate aid to medical emergencies, which includes: 1. Standardized caller interrogation; 2. Standardized Pre-Arrival Instructions (Dispatch Life Support); 3. Protocols for the dispatcher's evaluation of the injury or illness type and severity Includes a program of total quality management and a standards maintaining process. The system was created by Dr. Jeff J. Clawson and is now maintained/approved by the National Academies of Emergency Dispatch, USA. [4, changed by SIDARTHa consortium]

### **Agent**

A factor (e.g., a microorganism or chemical substance) or form of energy whose presence, excessive presence, or in the case of deficiency diseases, relative absence is essential for the occurrence of a disease or other adverse health outcome. [5]

### **Avian influenza (or avian flu/bird flu)**

A highly contagious viral disease, with up to 100% mortality in domestic fowl, caused by influenza A virus subtypes H5 and H7. All types of birds are susceptible to the virus, but outbreaks occur most often in chickens and turkeys. The infection may be carried by migratory wild birds, which can carry the virus but show no signs of disease. Humans are only rarely affected. [6]

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<sup>1</sup> Definitions of the European Emergency Data Project Glossary are also based on [4] and [7] but selected for and/or adjusted to the European context.

**Basic Life Support (BLS)**

Non-invasive assessments and interventions used to treat victims of respiratory and/or cardiovascular emergencies and stroke. This term has become synonymous with cardiopulmonary resuscitation (CPR) and can include automated external defibrillation (AED). [3]

**Bias**

A systematic deviation of results or inferences from the truth or processes leading to such systematic deviation; any systematic tendency in the collection, analysis, interpretation, publication, or review of data that can lead to conclusions that are systematically different from the truth. In epidemiology, does not imply intentional deviation. [5]

**Bioterrorism**

The intentional use of micro-organisms, toxins, genetic material or substances derived from living organisms to produce death or disease in humans, animals, or plants. [6]

**Call**

A request for assistance that activates the emergency medical service system. It may come through a variety of mechanisms: voice, regular telephone, [emergency telephone number]<sup>2</sup>, radio, telefax. [7]

**Case**

A person in the population identified as having a particular disease, health disorder, or condition under surveillance or investigation. [6]

An instance of a particular disease, injury, or other health conditions that meets selected criteria [...]. Using the term to describe the person rather than the health condition is discouraged [...]. [5]

**Case definition**

The criteria that describe a case (i.e. patient) under surveillance or investigation. [6]

A set of uniformly applied criteria for determining whether a person should be identified as having a particular disease, injury, or other health condition. In epidemiology, particularly for an outbreak investigation, a case definition specifies clinical criteria and details of time, place, and person. [5]

**Cause of disease**

A factor (e.g., characteristic, behavior, or event) that directly influences the occurrence of a disease. Reducing such a factor among a population should reduce occurrence of the disease. [5]

**CBRN (chemical, biological, radiological or nuclear) event**

The intentional use of microorganisms, toxins, genetic material, radioactive material or chemical substances to produce death or disease in humans, animals, or plants. [6]

**Chief complaint**

Reason the patient is seeking medical care (in some cases only the mechanism of injury). It must contain sufficient information to allow categorization [...]. [4]

**Computer-aided dispatch (CAD)**

The process of directing EMS resources to caller locations with the assistance of electronic data concerning system status. [7]

Public safety computer systems often linked to universal emergency service number systems that manage various functions of call-reception, unit status and resource deployment. Also referred to as command and control device. [4]

**Confounding**

The distortion of the association between an exposure and a health outcome by a third variable that is related to both. [5]

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<sup>2</sup> Squared brackets within the definitions are included by the authors of the SIDARTHa glossary as adjustment to the citation of the original definition to the SIDARTHa context.

**Costs**

Direct costs [of a surveillance system] include the fees paid for software and data, the personnel salary and support expenses (e.g., training, equipment support, and travel), and other resources needed to operate the system and produce information for public health decisions (e.g. office supplies, Internet and telephone lines, and other communication equipment). Fixed costs for running the system should be differentiated from the variable costs of responding to system alarms. Variable costs include the cost of follow-up activities (e.g., for diagnosis, case-management, or community interventions). The cost of responding to false alarms represents a variable but inherent inefficiency of an early detection system that should be accounted for in the evaluation. Similarly, variable costs include the financial and public health costs of missing outbreaks entirely or recognizing them late. [...] Cost savings should be estimated by assessing the impact of prevention and control efforts (e.g., health-care costs and productivity losses averted). [2]

**Crisis**

An unstable or crucial time or state of affairs in which a decisive change is impending, especially one where a highly undesirable outcome is distinctly possible. [6]

**Cluster**

The occurrence of an unusual number of cases in persons, places, or time. [1]

An aggregation of cases of a disease, injury, or other health condition [...] in a circumscribed area during a particular period without regard to whether the number of cases is more than expected (often the expected number is not known). [5]

**Data quality**

Data quality reflects the completeness and validity of the data recorded in the public health surveillance system. [8]

**Disaster**

A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses that exceed the ability of the affected community or society to cope using its own resources. [6]

A situation in which the severity of damage or the number of patients exceeds the ability to provide immediate management. Also called catastrophic event. [7]

**Disease**

The IHR (2005) define "disease" very broadly, as "an illness or medical condition, irrespective of origin or source, that presents or could present significant harm to humans"; this term hence covers diseases of biological, chemical or radio-nuclear origin. [9]

**Distribution**

In epidemiology, the frequency and pattern of health-related characteristics and events in a population. In statistics, the frequency and pattern of the values or categories of a variable. [5]

**Early warning systems**

These include three primary elements:

1. Forecasting impending events
2. Processing and dissemination of warnings to political authorities and populations
3. Undertaking appropriate and timely action.

[6]

**Emergency (Emergency Care)**

A combination of circumstances resulting in a need for immediate medical intervention. [3]

**Emergency (Public Health)**

A sudden occurrence demanding immediate action, which may arise as a result of epidemics, natural or technological catastrophes, civil strife, or other human-generated causes. [6]

**Emergency Department (ED)**

An area of the hospital dedicated to offering emergency medical evaluation and initial treatment to individuals in need of emergency care. [3]

**Emergency Medical Dispatch Centre (EMD)**

Any agency that routinely accepts calls for emergency medical assistance from public and/or that dispatches prehospital emergency medical personnel pursuant to such request. [3]

**Emergency Medical Services (EMS)**

A collective term describing the many agencies, personnel, and institutions involved in planning for, providing and monitoring emergency care. Frequently refers only to prehospital care. [3]

**Emergency Medical Services System**

The arrangement of personnel, facilities and equipment for the effective and coordinated delivery of EMS required in the prevention and management of incidents which occur either as a result of a medical emergency or of an accident, natural disaster or similar situation. [3]

**Emergency Physician (EP)**

Pre-hospital emergency physicians treat patients with life-threatening conditions at the scene and during transport. The emergency physician has a specific training in emergency medicine that ranges from advanced trainings to a full specialization in emergency medicine. [SIDARTHa Consortium]

**Endemic**

The constant presence of an agent or health condition within a given geographic area or population; can also refer to the usual prevalence of an agent or condition. [5]

**Epidemic**

The occurrence of more cases of disease, injury, or other health condition than expected in a given area or among a specific group of persons during a particular period. Usually, the cases are presumed to have a common cause or to be related to one another in some way (see also outbreak). [5]

**Epidemic Intelligence**

Epidemic intelligence encompasses all activities related to the early identification of potential health hazards that may represent a risk to health, and their verification, assessment and investigation so that appropriate public health control measures can be recommended.

The scope of Epidemic Intelligence includes risk monitoring and risk assessment and does not include risk management. [10]

**Epidemiologist**

A professional skilled in disease investigation. Epidemiologists design and conduct epidemiological studies, analyze data to detect patterns and trends in disease, establish and maintain surveillance systems, monitor health status, and evaluate the performance and cost-effectiveness of public health programme. [6]

**Epidemiology**

The study of the distribution and determinants of health conditions or events among populations and the application of that study to control health problems. [5]

**Event (Emergency Care)**

A prehospital occurrence, generally considered by an observer or patient to require emergency medical service assistance. [7]

**Event (Public Health)**

Manifestation of disease or an occurrence that creates a potential for disease. [9]

**Event based surveillance**

Refers to unstructured data gathered from sources of intelligence of any nature. [10]

**Exposure**

Having come into contact with a cause of, or possessing a characteristic that is a determinant of, a particular health problem. [5]

**False-negative**

A negative test result for a person who actually has the condition similarly, a person who has the disease (perhaps mild or variant) but who does not fit the case definition, or a patient or outbreak not detected by a surveillance system. [5]

**False-positive**

A positive test result for a person who actually does not have the condition. Similarly, a person who does not have the disease but who nonetheless fits the case definition, or a patient or outbreak erroneously identified by a surveillance system. [5]

**Flexibility**

The flexibility of a surveillance system refers to the system's ability to change as needs change. [2]

A flexible public health surveillance system can adapt to changing information needs or operating conditions with little additional time, personnel, or allocated funds. [8]

**Generic Preparedness**

Involve not only medical counter-measures, such as diagnosis, isolation and treatment of cases and the administration of vaccines and prophylactic drugs to at-risk groups and the population at large, but also public order measures, such as restriction of movement and border controls, the closing down of premises and the cordoning off of specific areas, civil protection measures such as rescue operations, the provision of food, water, shelter and other essential items, market and trade measures concerning food, animals, plants and goods, as well as external affairs measures concerning their nationals abroad and international cooperation to help stopping the spread of diseases or pathogens. Most importantly, infrastructures and equipment and materials must be in place and benefit from proper protection, whereas the persons with duties in the implementation of plans must be trained and be protected through appropriate personal and collective means to do their job properly. [11]

**Geographic Information System (GIS)**

A geographic information system integrates hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information. GIS allows [...] to view, understand, question, interpret, and visualize data in many ways that reveal relationships, patterns, and trends in the form of maps, globes, reports, and charts. [12]

**Glasgow Coma Scale (GCS)**

Clinical score used to evaluate the neurological situation. [3]

**Hazard**

A potentially damaging physical event or phenomenon and/or human activity which may cause loss of life or injury, property damage, social and economic disruption, and/or environmental degradation. [6]

**Highest Priority Response (HPR)**

The situation in which the dispatch centre selects a unit that can provide the higher level of care in a specific emergency medical service, despite the unit they send. [3]

**Incidence**

A measure of the frequency with which new cases of illness, injury, or other health condition occurs among a population during a specified period. [5]

**Incident**

A situation occurring during a planned event that requires a response by the relevant authorities. Incidents may result in injury, illness, death, or the need for law enforcement or other response agency action. [6]

**Indicator based surveillance**

Structured data collected through routine surveillance systems. [10]

**International Health Regulations 2005 (IHR 2005)**

The international legal agreement, binding upon 194 states parties throughout the world, to prevent, control and respond to international spread of disease. [6]

**Infectious disease**

An illness due to a specific infectious agent or its toxic products that arises through transmission of that agent or its products from an infected person, animal, or reservoir to a susceptible host, either directly or indirectly through an intermediate plant or animal host vector, or inanimate environment. [1]

**Laboratory surveillance**

Surveillance where the starting point is the identification or isolation of a particular organism in a laboratory (for example, surveillance of salmonellosis). [1]

**Mandatory surveillance**

A surveillance where participants must report to the system. Notifiable diseases are one example of a mandatory system where reporting is mandated by law. In another example, health authorities may require that all public laboratories report specified diseases. This is usually not by law, but is linked to their contractual duties. [1]

**Mainz Emergency Evaluation Score (MEES)**

A clinical score specifically designed for prehospital care. Useful in medical and trauma patients. [3]

**Mass Casualty Incidents**

Situations in which demands of care are bigger than the resources. Usually other social structures are affected like communications, transport, security etc. [3]

**Mass gathering (or mass gathering event)**

A gathering of persons usually defined as "more than a specified number of persons (which may be as few as 1000 persons although much of the available literature describes gatherings exceeding 25 000 persons<sup>1</sup>) at a specific location for a specific purpose (a social function, large public event or sports competition) for a defined period of time". In the context of this document, an organised or unplanned event can be classified as a mass gathering if the number of people attending is sufficient to strain the planning and response resources of the community, state or nation hosting the event. [6]

**Morbidity**

Disease; any departure, subjective or objective, from a state of physiological or psychological health and well-being. [5]

**Mortality rate**

A measure of the frequency of occurrence of death among a defined population during a specified time interval. [5]

**Notifiable disease**

A disease that must be reported to the authorities by law or ministerial decree. [1]

A disease that, by law, must be reported to public health authorities upon diagnosis. [5]

**Outbreak**

The occurrence of more cases of disease, injury, or other health condition than expected in a given area or among a specific group of persons during a specific period. Usually, the cases are presumed to have a common cause or to be related to one another in some way. Sometimes distinguished from an epidemic as more localized, or the term less likely to evoke public panic [...]. [5]

Used synonymously with "epidemic", usually to indicate localized as opposed to generalized pandemics. [6]

The occurrence of two or more linked cases of a communicable disease. [1]

**Pandemic**

A worldwide outbreak of a disease in humans in numbers clearly in excess of normal. [6]

An epidemic occurring over a widespread area (multiple countries or continents) and usually affecting a substantial proportion of the population. [5]

**Passive surveillance**

Surveillance where reports are awaited and no attempt made to actively seek reports from the participants in the system. [1]

**Portability**

The portability of a surveillance system addresses how well the system could be duplicated in another setting. [2]

**Predictive value negative (PVN)**

Reflects the probability that no outbreak is occurring when the system does not yield a signal. [2]

**Predictive value positive (PVP)**

The proportion of cases identified by a test, reported by a surveillance system, or classified by a case definition that are true cases, calculated as the number of true-positives divided by the number of true-positives plus false-positives. [5]

Reflects the probability of a system signal being an outbreak. [2]

**Preparedness** (e.g. for outbreak, crisis, disaster)

Arrangements to ensure that, should a situation occur, all necessary resources (e.g. financial, human, technical), expertise and services that may be required to cope with the effects of that situation can be mobilized rapidly and deployed (includes the issuing of effective early warnings and the temporary removal of people and property from threatened locations). [6]

**Prevalence**

The number or proportion of cases or events or attributes among a given population. [5]

**Prevention**

Activities to provide outright avoidance of the adverse impact of hazards and the means to minimize related environmental, technological and biological disasters. [6]

**Prospective study**

An analytic study in which participants are enrolled before the health outcome of interest has occurred. [5]

**Paramedic**

An individual trained and licensed to perform advanced life support procedures under the direction of a physician. [3]

**Representativeness**

A public health surveillance system that is representative accurately describes the occurrence of a health-related event over time and its distribution in the population by place and person. [8]

**Response (Emergency Care)**

Unit mobilisation to a destination as result of a call. [3]

**Response (Public Health)**

Actions taken before, during and immediately after the occurrence of a disaster, to ensure that the effects of that disaster are minimized and people are given immediate relief and support. [6]

**Response Time Interval**

Time interval from the call is received in the dispatch centre to arrival of the ambulance on scene, specifically to patient contact. This interval reflects the system response capability. [3]

**Retrospective study**

An analytic study in which participants are enrolled after the health outcome of interest has occurred. Case-control studies are inherently retrospective. [5]

**Risk**

The probability of harmful consequences or expected losses (deaths, injuries, damage to property and livelihoods, disruption of economic activity and environmental damage, etc.) resulting from interactions between natural or human-induced hazards and vulnerable conditions. Risk = hazard x vulnerability) [6]

The probability that an event will occur (e.g., that a person will be affected by, or die from, an illness, injury, or other health condition within a specified time or age span). [5]

**Risk assessment**

The process used to determine risk management priorities by evaluating and comparing given levels of risk to pre-determined standards, target risk levels, or other criteria. [6]

**Risk communication**

The interactive exchange of information and opinions concerning hazards and risks and risk-related factors. [6]

**Risk management**

A systematic approach to identifying, addressing and reducing risks of all kinds associated with hazards and human activities. Risk management is divided into risk assessment, risk communications and risk preparedness/response. [6]

**Routine (emergency) data**

Data collected as byproducts of clinical care by the clinician and as an integral part of the process of care. [13]

**Scene**

Geographical area where the [emergency] event occurred. [7]

**Service Area**

Geographical definition of the area in which an emergency medical service is providing service. [3]

**Sensitivity**

The sensitivity of a surveillance system can be considered on two levels. First, at the level of case reporting, sensitivity refers to the proportion of cases of a disease (or other health-related event) detected by the surveillance system (43: Weinstein MC, Fineberg HV. Clinical decision analysis. Philadelphia, PA: W.B. Saunders, 1980:84–94.) ). Second, sensitivity can refer to the ability to detect outbreaks, including the ability to monitor changes in the number of cases over time. [8]

**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. [6]

**Simplicity**

The simplicity of a public health surveillance system refers to both its structure and ease of operation. Surveillance systems should be as simple as possible while still meeting their objectives. [8]

**Specificity**

The ability of a test, case definition, or surveillance system to exclude persons without the health condition of interest; the proportion of persons without a health condition that are correctly identified as such by a screening test, case definition, or surveillance system. [5]

**Stability**

The stability of a surveillance system refers to its resilience to system changes. [2]

Stability refers to the reliability (i.e., the ability to collect, manage, and provide data properly without failure) and availability (the ability to be operational when it is needed) of the public health surveillance system. [8]

**Standard deviation**

A statistical summary of how dispersed the values of a variable are around its mean, calculated as the square root of the variance. [5]

**Surveillance**

The systematic ongoing collection, collation and analysis of data for public health purposes and the timely dissemination of public health information for assessment and public health response as necessary. [9]

**Syndrome**

A combination of symptoms characteristic of a disease or health condition; sometimes refers to a health condition without a clear cause (e.g., chronic fatigue syndrome). [5]

### **Syndromic Surveillance**

Surveillance using health-related data that precede diagnosis and signal a sufficient probability of a case or an outbreak to warrant further public health response. [14]

An investigational approach where health department staff, assisted by automated data acquisition and generation of statistical signals, monitor disease indicators continually (real-time) or at least daily (near real-time) to detect outbreaks of diseases earlier and more completely than might otherwise be possible with traditional public health methods. [2]

The use of health-related data based on clinical observations rather than laboratory confirmation of diagnoses. Such data can be used to signal sufficient probability of a case or outbreak to warrant further public health response. [6]

(1) the monitoring of the frequency of illnesses with a specified set of clinical features among a given population without regard to the specific diagnoses, if any, that are assigned to them by clinicians. (2) A system for early detection of outbreaks whereby health department staff, assisted by automated acquisition of data routinely collected for other purposes and computer generation of statistical signals, monitor disease indicators, particularly those associated with possible terrorism-related biologic and chemical agents, continually or at least daily to detect outbreaks earlier than would otherwise be possible with traditional public health methods. [5]

### **Timeliness**

The timeliness of surveillance approaches for outbreak detection is measured by the lapse of time from exposure to the disease agent to the initiation of a public health intervention. [2]

Timeliness reflects the speed between steps in a public health surveillance system. [8]

### **Triage**

To assign victims a priority for care and transport based on the degree of injury and the individual salvageability in a given situation. [3]

### **Usefulness**

A surveillance system is useful for outbreak detection depending on its contribution to the early detection of outbreaks of public health significance that leads to an effective intervention. [2]

### **Validity**

The degree to which a measurement, questionnaire, test, or study or any other data-collection tool measures what it is intended to measure. [6]

### **Variable**

Any characteristic or attribute that can be measured and can have different values. [5]

### **Vulnerability**

The degree to which a community is susceptible to hazards. This is the result of physical, social, economic and environmental factors. [6]

### **Zero reporting**

The reporting of zero cases when the participant has detected no cases. This allows the next level of the system to be sure that the participant has not sent incomplete or lost data. [1]

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