Glossary

Abscess A localized collection of purulent material contained within a fibrin membrane.

Acquired immunity Immunity (usually long-lasting) that is stimulated by exposure to a microbial antigen. It results from having the disease or receiving a vaccine containing antigenic substances, which leads to the production of antibodies or specific T cells.

Acute bronchitis Inflammation of the bronchi. *See* Bronchitis.

Aerobe A microorganism able to grow in oxygen. Strict (obligate) aerobes must have oxygen for their growth and survival.

Agar Inert polysaccharide (complex carbohydrate) derived from seaweed, solid at room temperature; it is used to solidify culture media.

Agglutination The aggregation or clumping together of cells or particles.

Agranulocyte A white blood cell without granules in its cytoplasm.

Allergic reaction Hypersensitivity to a specific allergen (an antigen that produces allergy), for example pollen, dust, drugs or food. An abnormal immune response occurs that results in the release of chemical mediators such as histamine, prostaglandins and 5-hydroxytryptamine (5-HT), inflammation and an anaphylactic reaction. There are usually local effects such as bronchospasm, rashes and diarrhoea, or, rarely, a widespread systemic reaction – anaphylactic shock.

Amoeba A microscopic unicellular protozoon. Some species have evolved as human parasites.

Anaerobe A microorganism that can grow and flourish without the presence of oxygen. Strict (obligate) anaerobes cannot grow in the presence of oxygen, whereas some facultative microbes can grow with or without oxygen.

Anaphylactic shock A severe hypersensitivity reaction to a foreign protein mediated by mast cells and basophils.

Angiogenesis The formation of new blood capillaries, such as during wound healing.

Antibiotic-associated diarrhoea Also known as 'pseudomembranous colitis'. A serious condition linked to superinfection with *Clostridium difficile* in patients who have received broad-spectrum antibiotics, which suppress the normal intestinal flora. Large areas of the intestinal epithelium undergo necrosis causing profuse watery diarrhoea. Antibiotic-associated colitis causes intestinal ulceration that can lead to potentially life-threatening perforation and peritonitis.

Antibiotics Strictly speaking, they are chemicals produced by living organisms, which are able to inhibit the growth of other organisms. In common usage, the term refers to antibacterial drugs whatever their source.

Antibodies (immunoglobulins) Proteins secreted by B lymphocytes that are able to bind to antigens during the immune response. They appear in the blood and tissue fluids of the host in the presence of specific antigens.

Antigenicity The ability of microorganisms and their products to induce antibody production, a property that is utilized during immunization.

Antigens Foreign cells or molecules that stimulate the immune system of the host and bind to antibodies or lymphocytes.

Antimicrobial agent Any substance that destroys microorganisms or inhibits their growth.

Aseptic technique Procedures that exclude pathogenic microorganisms from a particular environment, for example the use of sterile equipment and non-touch technique.

Atelectasis Collapse of the alveoli.

Attenuation The process by which vaccines are produced that retain microbial antigenicity without pathogenicity; that is, they induce antibody production without causing the disease.

Autoclaving The application of moist heat (steam under pressure) to achieve sterilization.

Autolysis The self-destruction of an organism through the release of its own enzymes.

Bacillus A genus of Gram-positive microorganisms. Also a general name for any rod-shaped bacterium.

Bacteraemia The presence of bacteria in the blood (bloodstream infection).

Bacteria Unicellular microorganisms, widely distributed within a variety of environments. Some may be pathogenic (disease-producing), whereas others perform useful functions, for example producing an environment that is hostile to harmful pathogens in the body.

Bactericidal agent A substance able to kill bacteria.

Bacteriological growth curve A typical sequence of events through which a newly inoculated culture of bacterial cells passes. It encompasses an initial lag phase (without multiplication, as the cells adapt to their new surroundings), a logarithmic phase (of optimal growth), a stationary phase (the total number of cells present remaining static as the rate of multiplication equals the number of cells dying through lack of nutrients) and a final decline phase (the number of cells decreasing as the nutrient supply is expended).

Bacteriophage (phage) A virus that parasitizes bacteria.

Bacteriostatic agent A substance able to prevent bacterial replication but unable to kill bacteria.

Bacteriuria The presence of bacteria in the urine – 100,000 or more pathogens per ml of freshly voided urine representing an infection.

Barrier nursing *See* Isolation.

Basophil A phagocytic granulocyte present in the blood, which contains heparin and histamine.

B cells B lymphocytes. Part of the humoral immune response, these become plasma cells, which produce antibodies (immunoglobulins).

Binary fission A method of microbial reproduction in which the microorganism divides into two genetically identical 'daughter' cells.

Biofilm A collection of microorganisms and their extracellular products, for example proteins, bound to a solid surface.

Blood–brain barrier The arrangement of capillary endothelial cells and specialized cells (astrocytes) surrounding the brain and spinal cord that allows the passage of some but not all chemical substances. This selective chemical permeability is commonly referred to as the blood–brain barrier.

Body fluids These include blood, all blood products (for example plasma, plasma-depleted blood and white cell infusions), cerebrospinal fluid, amniotic fluid, pleural fluid, peritoneal fluid, pericardial fluid, synovial fluid, semen, vaginal fluid, saliva, unfixed tissues and organs, urine and faeces.

Bradykinin A chemical (peptide) mediator of the inflammatory response. It causes vasodilation, contraction of involuntary muscle, increased blood vessel permeability and pain.

Bronchitis Inflammation of the bronchial mucosa. Acute bronchitis is caused by a variety of viruses and bacteria. Chronic bronchitis, which is classified as a chronic obstructive pulmonary disease (COPD), is characterized by inflammation, excess mucus production, reduced mucociliary clearance and the eventual impairment of gaseous exchange. The chronic condition is made worse by repeated respiratory infections.

Capsule A mucus layer surrounding the cell wall of some types of bacterium. Helps to prevent desiccation when adverse environmental conditions are encountered.

Carrier An individual harbouring microorganisms and able to transmit them without manifesting the signs and symptoms of infection.

Cell-mediated immunity Part of the immune response involving the action of T lymphocytes, which release regulatory chemicals and destroy foreign or abnormal cells.

Cellulitis The diffuse inflammation of connective tissue.

Cellulose A polysaccharide (complex carbohydrate) found as a component of plant cell walls.

Cell wall The outer layer that surrounds the cell membrane of certain cell types: some bacteria and all plant cells.

Chancre The primary lesion of syphilis; a hard, painless, highly infectious ulcer.

Chemoprophylaxis The prevention of infection by administering antibacterial drugs before signs and symptoms appear.

Chemotaxis The movement – attraction (positive) or repulsion (negative) – of cells in response to chemicals, for example leucocytes (white blood cells) are attracted to areas of infection by the release of bacterial substances.

Chemotherapy The use of chemical substances to treat disease in palliation and cure. Covers antimicrobial drugs and drugs used to treat malignancy. In common usage, chemotherapy has come to mean the cytotoxic drugs used in cancer treatment.

Cilia Microscopic 'hair-like' processes found on the surface of some cells, for example respiratory mucosa and uterine tubes. Their ability to beat in a rhythmic way enables mucus to be cleared from the lungs, the process of mucociliary clearance.

Cleaning A procedure to remove vegetative microorganisms in order to maintain the appearance, structure and effective functioning of the clinical environment and its contents.

Clinical infection Pathogenic invasion eliciting a response from the host (pyrexia and inflammation).

Clinical waste Waste generated by healthcare facilities (both human and animal). Disposal by incineration reduces the risk associated with hazardous waste, be it toxic or infectious.

Coagulase A bacterial enzyme capable of clotting plasma. It is produced by some staphylococci.

Coccus A general name for any spheroidally shaped bacterium, for example *Streptococcus* and *Staphylococcus*.

Cohort A group of individuals sharing a particular characteristic. Infection control in healthcare facilities is assisted by 'cohorting' similarly infected individuals together during outbreaks of infection.

Collagen Strong fibres giving strength to connective tissues such as skin, bone and tendons.

Colonization The establishment of pathogenic microorganisms at a particular body site with little or no host response to the pathogen. Colonization can lead to a large number of microorganisms, which form a reservoir for infection and cross-infection.

Colony A collection of bacteria growing on a solid culture medium that is large enough to be seen by the naked eye.

Commensals Microorganisms that live in close association with their host. In their correct location, they do no harm and may even have a beneficial effect.

Communicable An infectious disease, one that is transmitted directly or indirectly from one person or animal to another.

Complement proteins A group of proteins that are activated on exposure to components in bacterial cell walls and parasites. They enhance phagocytosis and some complement proteins perform additional functions important in the overall immune response.

Condylomata lata Flattened, wart-like lesions appearing during the secondary stage of syphilis at anatomical sites that are usually moist.

Conjugation A method by which bacteria exchange genetic material via sex pili. It is of particular importance in Gram-negative bacilli.

Contagious *See* Communicable.

Creutzfeldt-Jakob disease (CJD) One of a range of diseases, known collectively as the 'transmissible spongiform encephalopathies' (TSEs). It is caused by abnormal prion proteins.

Cross-infection An infection acquired from outside the individual. *See* Exogenous infection.

Croup Laryngeal spasm associated with a viral infection involving the larynx and trachea.

Cystitis Inflammation of the urinary bladder, usually caused by bacteria such as *Escherichia coli*.

Cytokines A generic term used to describe cellular signalling molecules, such as the interferons and interleukins, involved in the modulation of body defences. Cytokines produced by lymphocytes are sometimes called lymphokines.

Cytotoxic Describes the ability to kill or destroy cells.

Decontamination Encompasses cleaning, disinfection and sterilization.

Dermatophyte Superficial fungal infection of the skin involving the hair and nails.

Diploid Describes a cell containing a full set of paired chromosomes.

Disinfection Process causing the destruction of vegetative microorganisms but not their spores.

Ectoparasite A parasite that lives upon the surface of the host, for example the flea. *Compare* Endoparasite.

Electron microscopy Using a beam of electrons rather than light to produce images of extremely small particles such as virus particles.

ELISA (enzyme-linked immunosorbent assay) A method that utilizes enzyme-labelled antibodies to detect and measure other antibodies and antigens.

Encrustation The deposition of crystalline solids, mainly calcium and magnesium salts, on the surface of a urinary catheter and drainage apparatus.

Endemic disease A disease always present in a given population.

Endocarditis Inflammation of the endocardium (the lining of the heart) and heart valves. Bacterial endocarditis is commonly caused by staphylococci and streptococci.

Endogenous infection Self-infection, the organisms responsible originating from the same individual. *Compare* Exogenous infection.

Endoparasite A parasite that lives within the host, for example a tapeworm. *Compare* Ectoparasite.

Endotoxin An intracellular toxin contained in the cell wall of some Gram-negative bacteria, the toxin being released only when the bacterial cell is destroyed. The effects may include fever, malaise and inflammation. *Compare* Exotoxin.

Eosinophil A weakly phagocytic granulocyte playing a role in the allergic response and protecting the body against parasites.

Epidemic The same condition simultaneously affecting several people.

Epidemic infection A substantial increase in the number of people becoming carriers or infected with a particular organism.

Epithelialization The growth of epithelium over the surface of a wound.

Epithelium The tissue that covers the external body surfaces, forms glands and lines the body cavities. It is one of the four basic tissues.

Eukaryotic Desribes a cell with a true nucleus. The genetic material is enclosed within a nuclear membrane. *Compare* Prokaryotic.

Exogenous infection (cross-infection) Caused by organisms originating from an external source – other patients, staff or the environment. *Compare* Endogenous infection.

Exotoxin A toxin released through the bacterial cell wall into the extracellular fluid. These are secreted by Gram-positive bacteria and can have widespread effects. For example, the toxin of *Clostridium botulinum* inhibits the transmission of nerve impulses to cause paralysis. *Compare* Endotoxin.

Extensively drug-resistant tuberculosis (XDR-TB) Tuberculosis caused by bacterial strains that exhibit the drug resistance pattern of MDR-TB with additional resistance to any fluoroquinolone antibacterial drugs, and at least one of three second-line anti-TB drugs amikacin, capreomycin or kanamycin given by intramuscular injection (WHO, 2007).

Facultative Describes a microorganism that can adapt and survive in different environmental conditions. *See* Anaerobe.

Fibroblast A connective tissue cell producing collagen.

Flagellum A microscopic projection from the surface of some cells, such as spermatozoa, and some microorganisms. It is concerned with cell movement.

Fluorescent antibody technique A method of detecting antibodies by the use of fluorescent dyes. The antibody, when attached to the dye, can be seen by using ultraviolet light with a special fluorescent microscope.

Fomite Any item that has been in contact with an infectious source and is in turn able to transfer infection.

Food-borne infection (invasive intestinal gastroenteritis) An infective condition caused by the activity of bacteria multiplying within the gastrointestinal tract.

Food intoxication Food-borne disease caused by bacterial toxins present in food.

Fungus A diverse group of simple plants that includes mushrooms, moulds and yeasts. Some are human pathogens, but many others are used in the food and pharmaceutical industries.

Gangrene Massive tissue death (necrosis) resulting from loss of blood supply. Infection may be present in some types.

General paralysis of the insane A manifestation of tertiary syphilis involving the nervous system (neurosyphilis), characterized by

memory loss, incontinence and disintegration of the personality, with a sudden or insidious onset.

Genus A biological subdivision of a family of plants or animals. A genus may contain several related species.

Gram staining A staining method used to identify and classify some bacteria. Gram-positive microorganisms stain violet and Gram-negative ones pink.

Granulation tissue The new moist, red/pink tissue that forms in the wound bed.

Granulocyte A leucocyte (white blood cell) containing granules of enzymes within its cytoplasm. Includes basophils, neutrophils and eosinophils.

Gummata The lesions of tertiary syphilis. Obstruction to the blood supply results in necrosis and the formation of chronic ulcers that are probably not infectious.

Haemolysin A chemical produced by many bacteria that causes disruption of the red blood cell membrane.

Healthcare-associated infection (HCAI) An infection not present or incubating at the time of admission or healthcare intervention (Bennett and Brachman, 1979).

Hepatitis Inflammation of the liver often caused by viruses, for example hepatitis B virus.

Histamine A powerful chemical mediator released by many tissues and blood cells. Released during inflammation, it causes vasodilation, increased blood flow and increased blood vessel permeability. It is also implicated in the signs and symptoms of some allergic conditions, for example hay fever.

Hospital-acquired infection (HAI) Infection arising from hospital stay or treatment. Also known as nosocomial infection. *See* Healthcare-associated infection.

Humoral immunity Part of the immune response involving B lymphocytes, plasma cells and the production of antibodies.

Hypersensitivity reaction Abnormal sensitivity to an allergen.

Immunity A state of resistance to an infectious agent, either intrinsic or acquired.

Immunization The administration of antigens to induce a state of immunity.

Immunocompromised person An individual whose immune system is prevented from responding to pathogens in the normal way, through poor health or the action of drugs, or because he or she is undergoing an invasive procedure.

Immunodeficiency An impairment of humoral or cell-mediated immunity, which may be congenital or acquired. Causes include a failure to produce antibodies, HIV/AIDS and chemotherapy.

Immunoglobulins *See* Antibodies.

Immunosuppression The condition in which the activity of the immune system is depressed through treatment (radiotherapy or drugs) or disease.

Incidence The number of new cases of a disease occurring in a population over a specific period of time.

Incubation period The time from contact with an infectious disease until the signs and symptoms appear.

Infection The successful invasion, establishment and growth of microorganisms within the tissues of a host.

Infectious *See* Communicable.

Inflammation The response of the tissues to trauma (physical, chemical, extremes of temperature, or pathogenic invasion). The classic hallmarks of inflammation are erythema (redness), heat, swelling, pain and possible loss of function (depending on the site and extent of the injury).

Inoculum The material, such as urine or sputum, containing microorganisms that is used to inoculate culture medium in the laboratory.

Interferons (IFNs) Antiviral proteins produced by T lymphocytes and other cells. They act as cellular signalling chemicals to modulate the immune response by stimulating other immune cells; macrophages, for example, are activated to become killer cells. *See* Cytokines.

Interleukins (ILs) A group of cellular signalling chemicals. They are produced by a variety of cells involved in immune processes, for example macrophages. Interleukins also act as growth factors needed for the production of blood cells. *See* Cytokines.

Invasive device/procedure One that bypasses the body's natural defences against infection, for example urinary catheterization, intravenous cannulation, intubation or incision.

Isolation Various measures used to contain an infectious disease or protect vulnerable individuals. *See* Protective isolation.

Kaposi's sarcoma A malignant neoplasm in which there is growth of new blood vessels first appearing as brown, red or purple lesions on the skin. Spread occurs to other areas with metastasis to the lymph nodes and viscera. Often occurs in immunocompromised individuals, such as those with HIV disease.

Latent infection An infection in which the individual is infected by the microorganism without the signs of disease being obvious.

Leucocytes Generic name for all white blood cells: neutrophils, eosinophils, basophils, monocytes and lymphocytes.

Leucopoiesis The formation of leucocytes.

Live attenuated vaccine A vaccine produced from living microorganisms, for example that for MMR (measles, mumps and rubella). The microorganisms are changed to remove their ability to cause disease while still being able to stimulate antibody production. *See* Attenuation.

Lymphocytes Agranulocytic leucocytes (white blood cells), types include T and B cells.

Lymphokines Chemicals released by T cells. They control all the cells of the immune system by activating or suppressing other cells involved in the immune response.

Lysozyme A bactericidal enzyme found in many body fluids, for example tears, saliva and nasal secretions.

Macrophages Large phagocytic cells derived from monocytes. They play an important nonspecific scavenging role in the inflammatory response, and are also involved in many specific immune responses.

Malaise A general (nonspecific) feeling of illness or discomfort.

Mast cell A tissue cell with granules containing histamine and other chemicals. Mast cells have similarities with basophils and both are involved in the initiation of inflammation by the release of histamine.

Memory cells Cells derived from B and T lymphocytes, which persist in the body. They 'remember' a specific antigen and are able to respond quickly if that antigen is encountered again.

Meningitis Inflammation of the meninges (the three membranes covering the brain and spinal cord). Meningitis may be bacterial or viral.

Meticillin-resistant *Staphylococcus aureus* (MRSA) A strain of *Staphylococcus aureus* that is resistant to most antimicrobial agents, including meticillin (not used clinically) and flucloxacillin.

Microbe *See* Microorganism.

Microorganism An organism, usually too small to be seen without a microscope, for example bacteria, viruses, fungi and protozoa.

Monocyte A type of phagocytic leucocyte (white blood cell). Some are able to move into the tissues from the blood to become macrophages.

Multidrug resistant-tuberculosis (MDR-TB) Tuberculosis caused by organisms that are resistant to at least rifampicin and isoniazid (WHO, 2007).

Multiple organ dysfunction syndrome (MODS) A syndrome affecting critically ill people. Organ function is impaired and there may be kidney failure, abnormal blood coagulation (disseminated intravascular coagulation – DIC), acute respiratory distress syndrome (ARDS) and gastrointestinal failure. *See* Systemic inflammatory response syndrome.

Mycelium Filaments produced by moulds (a type of fungus). It is these filaments that can be seen on mouldy food.

Myocarditis Inflammation of the myocardium, the muscle layer of the heart.

Natural killer (NK) cell A type of lymphocyte able to destroy virus infected cells and those showing malignant change.

Necrosis The localized death of tissue in response to injury, poor blood supply or disease.

Neutrophil A phagocytic granulocyte playing a key role in the inflammatory response.

Nonspecific urethritis Nongonococcal urethritis. Urethritis associated with infection with *Chlamydia trachomatis.*

Normal flora The microorganisms that normally colonize the body.

Nosocomial infection *See* Hospital-acquired infection, Healthcare-associated infection.

Obligate Of a microorganism, requiring specific environmental conditions for its survival. *See* Aerobe and Anaerobe.

Opportunistic infection Infection caused by organisms that do not usually exhibit pathogenic properties but which become pathogenic in patients who are seriously ill, immuno-compromised, or undergoing invasive treatment.

Opsonin An antibody or complement protein that recognizes a foreign molecule (antigen). It attaches to the foreign molecule and labels it to enhance phagocytosis.

Opsonization The process by which bacteria are marked as foreign cells, rendering them more susceptible to phagocytosis.

Otitis media Acute otitis media is inflammation of the middle ear.

Pandemic The simultaneous occurrence of a large number of infections of the same kind.

Parasite An organism that lives in or on another living organism (the host). It confers no benefit upon the host, which it exploits for its physical needs.

Parenteral Literally meaning 'outside the alimentary tract'. Applies to therapy such as fluids, nutrients or drugs given via a route other than the alimentary tract, for example by injection.

Parenteral transmission Literally, the delivery of a substance by any route other than via the alimentary tract. Usually now taken to mean transmission via blood.

Pathogen An agent able to cause disease.

Pathogenicity The capacity of microorganisms to cause disease.

Pericarditis Inflammation of the pericardium (the double serous membranous sac enveloping the heart). This can be caused by bacteria or viruses.

Peritonitis Inflammation of the peritoneum (the two-layer serous membrane lining the abdominal cavity and covering some of the organs). It may be caused by bacterial infection or chemical irritation.

Petri dish A plastic dish that, when filled with agar, is used to grow bacteria in the laboratory.

pH The hydrogen ion concentration. A method of expressing acidity (hydrogen ions) or alkalinity (hydroxyl ions). It utilizes a logarithmic scale with a range from 0 to 14 (pH 0 representing the greatest concentration of hydrogen ions, pH 7 neutrality, the number of hydrogen and hydroxyl ions being equal, and pH 14 the greatest concentration of hydroxyl ions).

Phage *See* Bacteriophage.

Phagocytes Cells that are capable of phagocytosis, for example the white blood cells (neutrophils and monocytes) and the macrophages in the tissues.

Phagocytosis The cellular engulfment of bacteria and particulate matter.

Phlebitis Inflammation of the vein. Usually caused by chemical or mechanical irritation but may become complicated by infection.

Plasma cells Transient immune cells derived from B lymphocytes. They produce specific antibodies.

Plasmid Extrachromosomal DNA present in the cytoplasm of some bacteria.

Pleomorphism A state in which the size and shape of bacterial cells becomes highly variable, sometimes ceasing to display the typical morphological characteristics of the species and thus making identification difficult.

Pneumonia Inflammation of the lung. In bronchopneumonia, the affected tissue is distributed widely around the bronchi. In lobar pneumonia, the area of consolidation is localized. Nosocomial pneumonia is a hospital-acquired infection of the lower respiratory tract developing at least 72 hours after admission.

Polymorphonuclear leucocyte A leucocyte (white blood cell) containing a many-lobed nucleus. This can be a neutrophil, an eosinophil or a basophil.

Prevalence The total number of cases of a disease present in a population at a single point in time.

Primary intention The type of healing that occurs in clean surgical wounds where the skin edges are in apposition.

Primary response The immune response that results from the first contact with an antigen. There is an initial lag phase of 2–3 weeks before antibody production reaches a protective level.

Prion An infectious agent that consists of protein but no nucleic acids. Prions are responsible for the transmission of the transmissible spongiform encephalopathies, such as Creutzfeldt–Jakob disease, bovine spongiform encephalopathy and scrapie in sheep.

Prokaryotic Describes a cell that lacks a true nucleus and nuclear membrane, the genetic material lying within the cytoplasm. *See* Eukaryotic.

Prophylaxis Measures taken to prevent disease, for example immunization and perioperative antimicrobial drug therapy. *See* Chemoprophylaxis.

Protective isolation Special measures taken to protect immunocompromised individuals from infection.

Protozoa Microscopic unicellular animals. Many are harmless, but others are responsible for human diseases including malaria, toxoplasmosis and cryptosporidiosis, which affect immunocompromised individuals.

Pseudomembranous colitis *See* Antibiotic-associated diarrhoea.

Puerperal sepsis A local infection, which results from childbirth, arising in the genital tract leading to septicaemia.

Pus Matter resulting from infection. It consists of bacterial cells, leucocytes, cell debris and tissue fluid.

Pyelonephritis (acute) Ascending urinary tract infection spreading outwards from the pelvis of the kidney to its cortex. In some cases, the source of infection is the blood rather than the lower urinary tract.

Reservoir of infection A source of microorganisms, for example a human carrier of the microorganism *Salmonella enterica* serovar Typhi that causes typhoid fever.

Reverse transcriptase A viral enzyme that catalyses the synthesis of nucleic acids.

Rickettsia A group of microorganisms that have the characteristics of both bacteria and viruses. They cause diseases such as typhus and Rocky Mountain spotted fever.

Risk assessment A method of identifying and assessing a particular risk or hazard. Subsequent management seeks to minimize the potential risk by the use of specific precautions, for example handwashing protocols.

Saprophyte A free-living microorganism obtaining nourishment from decaying animals and plant tissue.

Screening A preventive measure employed to identify potential or incipient disease.

Secondary intention The type of healing that occurs in a wound where there is tissue loss, for example a pressure ulcer. Here, the wound heals from the base.

Secondary response The immune response occurring when B lymphocytes encounter an antigen on a second or subsequent occasion. The memory cells produce antibodies very quickly (without a lag phase).

Septicaemia Multiplication of bacteria in blood. Septicaemia is a very serious condition, which can lead to overwhelming sepsis and systemic inflammatory response syndrome (SIRS).

Seroconversion The secretion of specific antibodies following exposure to an antigen.

Serology The study of blood sera with particular emphasis on the reactions concerned with immunological function and diagnosis.

Serotyping A method of classifying microbial strains based on their antigenic characteristics. The surface antigens are identified in the laboratory by using the specific antibodies.

Serum The plasma component of coagulated blood with all the cellular elements removed.

Severe acute respiratory syndrome (SARS) A highly infectious viral pneumonia caused by a coronavirus. It is an important emerging infectious disease first identified in Hong Kong in 2003. The mortality rate is high and outbreaks have been reported from Asia, North America and Europe.

Sharp Any item – needles, razors, lancets, scalpel blades, microscope slides, ampoules, wires and stitch-cutters – able to cut or penetrate skin or mucous membranes.

Slough Necrotic tissue that detaches from healthy tissue following infection.

Source of infection The site from which a microorganism responsible for an infection has emanated.

Species Smaller subdivisions within a genus.

Spirochaetes An order of slender, spiral-shaped bacteria. Genera included in the order are *Treponema*, *Leptospira* and *Borrelia*.

Spore A bacterial adaptation to unfavourable environmental conditions. Cells survive as their metabolism slows, and they become surrounded by a thick capsule. When favourable conditions return, the spore is able to germinate.

Standard (universal) precautions/ principles The measures taken to prevent and/ or control infection – environmental cleaning, personal protective equipment, fundamental hygiene, including handwashing and decontamination, and proper handling and disposal of sharps. Also the procedures to be followed in the case of accidents, especially needlestick injury and exposure to blood and body fluids.

Sterilization The destruction of all microorganisms and their spores.

Stevens–Johnson syndrome An adverse, potentially fatal reaction to co-trimoxazole characterized by a bullous rash, fever and ulceration of the mouth.

Strain Microorganisms of the same species that have different physical and chemical features.

Subclinical infection The presence of infection without any obvious signs or symptoms of the disease.

Superinfection A situation that occurs when the body's normal commensal flora is suppressed by antibiotics and replaced by drug-resistant microorganisms. *See* Antibiotic-associated diarrhoea.

Surveillance The process of monitoring the occurrence of diseases, for example notifiable infectious diseases, within a population.

Systemic inflammatory response syndrome (SIRS) A life-threatening condition, which can be triggered by overwhelming sepsis, major trauma, severe haemorrhage, acute pancreatitis and conditions that result in poor tissue perfusion and so on (Adams, 2003). The release of inflammatory mediators into the blood lead to an abnormal response with widespread effects and organ damage. *See* Multiple organ dysfunction syndrome (MODS).

Tabes dorsalis A manifestation of tertiary syphilis affecting the nervous system (neurosyphilis). It involves the posterior columns of the spinal cord and the associated sensory nerve roots, resulting in disordered gait and a loss of sense of position in the legs (locomotor ataxia).

T cells T lymphocytes that facilitate cell-mediated immunity. They differentiate into active T cells that destroy foreign cells carrying specific antigens and regulate the immune response.

Titre The measurement of antibody concentration, for example in the blood.

Toxin A poisonous substance, usually of microbial origin.

Toxoid A microbial toxin that has been modified to retain antigenicity without pathogenicity. It is used to produce immunity against specific diseases, for example tetanus. *See* Attenuation.

Transduction The transfer of genetic material from one bacterium to another by a bacteriophage.

Transformation The transfer of genetic material from one bacterium to another through the cell wall into the cytoplasm.

Universal precautions *See* Standard (universal) precautions/principles.

Vaccine An extract prepared from inactivated or weakened microorganisms that is used to induce a state of immunity to the pathogen in the recipient.

Vibrio A genus of comma-shaped bacteria. *Vibrio cholerae* causes cholera.

Virulence The ability of a microorganism to cause infection.

Virus A microorganism containing either DNA or RNA. Can only replicate inside a living host cell. Visualization is only possible using electron microscopy.

White blood cell *See* Leucocytes.

Yeast A simple, single-celled fungus, for example *Candida albicans.*

Ziehl–Neelsen stain A staining technique used in the identification of acid-fast bacilli such as *Mycobacterium tuberculosis.*

Zoonoses Diseases transmitted from animals to humans, for example anthrax and rabies.

References

Adams S. (2003) Shock, systemic inflammatory response and multiple organ dysfunction. In C Brooker and M Nicol (eds) *Nursing Adults: The Practice of Caring.* Mosby, Edinburgh, pp. 157–9, 167–9.

Bennett JV and Brachman PS (1979) *Hospital Infections.* Little, Brown, Boston.

World Health Organization (WHO) (2007) *XDR-TB Extensively Drug-resistant Tuberculosis: What, Where, How and Action Steps.* Available www.who.int.