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# Glossary

- Air-emboli:** A bubble of air obstructing a blood vessel.
- Anaphylaxis:** An unusual or exaggerated allergic reaction.
- Antibodies:** The chemicals in the human body's defense system that identify foreign substances, lock onto them, and trigger the body's immune attack on foreign substances. The body makes more than a million antibodies, each different and each capable of recognizing and attacking only one substance—one type virus, one type of bacteria, and so on.
- Anticoagulant:** Substances inhibiting normal blood clotting.
- Antigen:** A large molecule, usually a protein or carbohydrate, which when introduced in the body stimulates the production of an antibody that will react specifically with the antigen.
- Atrophy:** A wasting away; a diminution of the size of a cell, tissue, organ, or part.
- Autoimmune:** Directed against the body's own tissue. In autoimmune diseases, pathological antibodies are produced that attack the body's own normal tissue, such as kidney cells in glomerulonephritis or the nerve/muscle junction in myasthenia gravis.
- Cost-benefit analysis (CBA):** An analytical technique that compares the costs of a project or technological application to the resultant benefits, with both costs and benefits expressed by the same measure. This measure is nearly always monetary.
- Cost-effectiveness analysis (CEA):** An analytical technique that compares the costs of a project or of alternative projects to the resultant benefits, with costs and benefits/effectiveness expressed by different measures. Costs are usually expressed in dollars, but terms such as "lives saved," "disability avoided," "quality-adjusted life years saved," or any other relevant objectives. Also, when benefits/effectiveness are difficult to express in a common metric, they may be presented as an "array."
- CEA/CBA:** A composite term referring to a family of analytical techniques that are employed to compare costs and benefits of programs or technologies. The terms as used in this case study means "cost-effectiveness analysis/cost-benefit analysis."
- Cytapheresis:** A type of therapeutic apheresis involving the selective removal of specific blood cells (red cells, white cells, and/or platelets).
- Cytotoxic:** A specific toxic action on cells of special organs.
- Discounting:** A procedure used in economic analysis to reduce to present value those costs and effects that occur in future years. Discounting is based on two premises: 1) individuals prefer to receive benefits today rather than in the future, and 2) resources invested today in alternative programs could earn a return over time.
- Drug:** Any chemical or biological substance that may be applied to, ingested by, or injected into humans, in order to prevent, treat, or diagnose disease or other medical conditions.
- Effectiveness:** Same as efficacy (see below) except that it refers to average or actual conditions of use.
- Efficacy:** The probability of benefit to individuals in a defined population from a medical technology applied for a given medical problem under ideal conditions of use.
- Erythrocytapheresis:** A type of cytapheeresis involving the removal of red cells.
- Extracorporeal:** Outside the body, as in extracorporeal tubing for membrane apheresis equipment.
- Glomerulonephritis:** A variety of nephritis characterized by inflammation of the capillary loops in the glomeruli of the kidney.
- Granulocytes:** Any cell containing granules, especially a leukocyte containing certain types of granules in its cytoplasm.
- Hemolysis:** Separation of the hemoglobin from the red cells and its appearance in the plasma.
- Hybridoma:** A hybrid cell resulting from the fusion of two cells: a lymphocyte producing an antibody and a myeloma (or tumor cell), which grows well in culture and allows hybridoma to be established permanently. The antibodies from a given hybridoma are identical ("monoclonal").
- Hyperviscosity:** Excessive thickness of blood.
- Hypocalcemia:** Reduction of the blood calcium below normal.
- Immune complexes:** Antigen-antibody complexes that can be deposited in tissue. In immune-complex related diseases, such as rheumatoid arthritis, this deposition occurs and produces severe inflammation and tissue damage.
- Immunoglobulin:** A protein of animal origin endowed with known antibody activity. Immunoglobulins function as specific antibodies and are responsible for the humoral aspects of immunity. They are found in the serum and in other body fluids and tissues. There are five basic classes of immunoglobulins—IgA, IgD, IgE, IgG, and IgM.
- Immunosuppressive:** The artificial prevention or diminution of the immune response.
- Incidence:** In epidemiology, the number of cases of disease, infection, or some other event having its onset during a prescribed period of time, in relation to the unit of population in which it occurs. Incidence is a measure of morbidity or other events as they happen over a period of time.

**Inpatient care:** Care that includes an overnight stay in a medical facility.

**Leukocytes:** The white cells of blood.

**Leukapheresis:** A type of cytappheresis involving the reduction of excess white cells, as in leukemia.

**Locke's solution:** A solution of sodium chloride, calcium chloride, potassium chloride, sodium bicarbonate, and dextrose.

**Lymphapheresis:** A type of cytappheresis involving the removal of lymphocytes (certain white cells) without depletion of plasma components, making any plasma replacement, therefore, unnecessary.

**Lymphocytes:** A type of leukocyte, chiefly a product of lymphoid tissue, which participates in humoral and cell-mediated immunity.

**Lymphokines:** The biologically active soluble factor produced by white blood cells.

**Lymphoplasmapheresis:** A type of cytappheresis involving a combination of lymphopheresis and plasmapheresis: the removal of both lymphocytes and plasma, usually during a single procedure, and requiring the use of replacement fluids.

**Medicaid:** A Federal program that is administered and operated individually by each participating State government that provides medical benefits to certain low-income persons in need of health and medical care.

**Medical technology:** The drugs, devices, and medical and surgical procedures used in medical care.

**Medicare:** A nationwide, federally administered health insurance program authorized in 1965 to cover the cost of hospitalization, medical care, and some related services for eligible persons over age 65, persons receiving Social Security Disability Insurance payments for 2 years, and persons with end-stage renal disease. Medicare consists of two separate but coordinated programs—hospital insurance (Part A) and supplementary medical insurance (Part B). Health insurance protection is available to insured persons without regard to income.

**Monoclonal antibodies:** Antibodies derived from a single source or clone of cells which recognize only one kind of antigen.

**Myeloma:** A malignant disease in which tumor cells of the antibody-producing system synthesize excessive amounts of specific proteins.

**Outpatient care:** Care that does not include an overnight stay in the facility in which care is provided.

**Paraproteinemias:** Presence in the blood of a paraprotein (immunoglobulin produced by a clone of neoplastic plasma cells proliferating abnormally), such as a cryoglobulin or a macroglobulin, in amounts not normally observed.

**Pathogen:** A specific causative agent of disease.

**Plasma:** The fluid portion of blood in which particulate components are suspended.

**Plasma exchange:** An often used therapeutic application of apheresis, in which a large volume (up to

5 liters) of plasma is removed and replaced by an equivalent volume of fluids such as fresh frozen human plasma, plasma substitute, or combination of albumin, calcium, and normal saline, depending on the need of the individual patient. Some researchers make a distinction between *plasma exchange* and *plasma infusion*. In the former case, plasma is removed and replaced by a colloid solution, commonly albumin, fresh frozen plasma, or simple donor plasma. Although the plasma replacement in early cases was initiated only for purposes of expansion of the blood vessel "intravascular" volume, later investigators suggested that the administration of fresh frozen plasma had an independent therapeutic effect. This led some investigators to administer it without apheresis; this is described in the literature as plasma infusion.

**Plasma perfusion:** A multiple separation technique in therapeutic apheresis whereby the patient's plasma is first isolated from the cellular elements and subsequently passed through a filtration medium (either absorptive columns or membranes) to remove unwanted plasma components. The filtered plasma is then returned to the patient along with the cells.

**Plasmapheresis:** Strictly defined, a type of apheresis that involves the removal of small amounts of plasma. The primary use of this procedure is in the collection of source plasma for subsequent processing into serum fractions, and it has been traditionally found in blood banks and in the plasma collection industry.

**Platelets:** Oval-shaped structures found in the blood of all mammals and chiefly known for their role in blood coagulation.

**Plateletapheresis:** A type of cytappheresis involving the reduction of abnormally high levels of platelets.

**Prevalence:** In epidemiology, the number of cases or disease, infected persons, or persons with disabilities or some other condition present at a particular time, in relation to the size of the population. Prevalence is a measure of morbidity at a point in time.

**Proteins:** The functional and structural components of cells.

**Purpura:** A group of disorders characterized by purplish or brownish-red discoloration, easily visible through the epidermis, caused by hemorrhage into the tissues.

**Randomized clinical trial (RCT):** An experimental design involving the random assignment of human subjects either to an experimental group (in which subjects receive the treatment being studied) or to a control group (in which subjects do not receive the treatment being studied). Also referred to as "randomized controlled clinical trial" or "controlled clinical trial."

**Registry:** The collection of health or medically related data typically abstracted from a specific document (e.g., medical record or death certificate) using cri-

teria that are applied retrospectively. In practical terms, registries generally cover discrete political or geographic areas.

**Reliability:** A measure of the consistency of a method in producing results. A reliable test gives the same results when applied more than once under the same conditions. Also called “precision.”

**Remission:** Abatement or diminution of the symptoms of a disease.

**Risk:** A measure of the probability of an adverse or untoward outcome and the severity of the resultant harm to health of individuals in a defined population and associated with use of a medical technology applied for a given medical problem under specified conditions of use.

**Safety:** A judgment of the acceptability of risk (see above) in a specified situation.

**Technology:** The application of organized knowledge to practical ends.

**Technology assessment:** A comprehensive form of policy research that examines the technical, economic,

and social consequences of technological applications. It is especially concerned with unintended, indirect, or delayed social impacts. In health policy, the term has also come to mean any form of policy analysis concerned with medical technology, especially the evaluation of efficacy and safety. The comprehensive form of technology assessment is then termed “comprehensive technology assessment.”

**Validity:** A measure of the extent to which an observed situation reflects the “true” situation. *Internal validity* is a measure of the extent to which study results reflect the true relationship of a “risk factor” (e.g., treatment or technology) to the outcome of interest in study subjects. *External validity* is a measure of the extent to which study results can be generalized to the population that is represented by individuals in the study, assuming that the characteristics of that population are accurately specified.

**Vasculitis:** Inflammation of a blood vessel.