Definitions

This fact sheet is based on information provided by the National Cancer Institute.

Adrenal gland:  
A small gland that makes steroid hormones, adrenaline, and noradrenaline. These hormones help control heart rate, blood pressure, and other important body functions. There are two adrenal glands, one on top of each kidney.

Adverse effect:  
An unexpected medical problem that happens during treatment with a drug or other therapy. Adverse effects do not have to be caused directly by the drug or therapy, and they may be mild, moderate, or severe, also called adverse events.

Anemia:  
A condition in which the number of red blood cells is below normal.

Angiogenesis:  
Blood vessel formation. Tumor angiogenesis is the growth of new blood vessels that tumors need to grow. This process is caused by the release of chemicals by the tumor and by host cells near the tumor.

Antigen:  
Any substance that causes the body to make a specific immune response.

Apoptosis:  
A type of cell death in which a series of molecular steps in a cell lead to its death. This is one method the body uses to get rid of unneeded or abnormal cells. The process of apoptosis may be blocked in cancer cells. Apoptosis is also called programmed cell death.

B cell:  
A type of white blood cell that makes antibodies. B cells are part of the immune system and develop from stem cells in the bone marrow. Also called B lymphocyte.

BCG:  
A weakened form of the bacterium Mycobacterium bovis (bacillus Calmette-Guérin) that does not cause disease. BCG is used in a solution to stimulate the immune system in the treatment of certain types of cancer, also called bacillus Calmette-Guérin.

Biological:  
Pertaining to biology or to life and living things. In medicine, refers to a substance made from a living organism or its products. Biologicals may be used to prevent, diagnose, treat or relieve of symptoms of a disease. For example, antibodies, interleukins, and vaccines are biologicals.
**Biological therapy:**
Treatment to boost or restore the ability of the immune system to fight cancer, infections, and other diseases. Also used to lessen certain side effects that may be caused by some cancer treatments. Agents used in biological therapy include monoclonal antibodies, growth factors, and vaccines. These agents may also have a direct antitumor effect, also called biological response modifier therapy, biotherapy, and immunotherapy.

**Biomarker:**
A biological molecule found in blood, other body fluids, or tissues that is a sign of a normal or abnormal process, or of a condition or disease. A biomarker may be used to see how well the body responds to a treatment for a disease or condition, also called molecular marker and signature molecule.

**Biopsy:**
The removal of cells or tissues for examination by a pathologist. The pathologist may study the tissue under a microscope or perform other tests on the cells or tissue. There are many different types of biopsy procedures. The most common types include: (1) incisional biopsy, in which only a sample of tissue is removed; (2) excisional biopsy, in which an entire lump or suspicious area is removed; and (3) needle biopsy, in which a sample of tissue or fluid is removed with a needle. When a wide needle is used, the procedure is called a core biopsy. When a thin needle is used, the procedure is called a fine-needle aspiration biopsy.

**Bladder cancer:**
Cancer that forms in tissues of the bladder (the organ that stores urine). Most bladder cancers are transitional cell carcinomas (cancer that begins in cells that normally make up the inner lining of the bladder). Other types include squamous cell carcinoma (cancer that begins in thin, flat cells) and adenocarcinoma (cancer that begins in cells that make and release mucus and other fluids).

**Blood:**
A tissue with red blood cells, white blood cells, platelets, and other substances suspended in fluid called plasma. Blood takes oxygen and nutrients to the tissues, and carries away wastes.

**Bone marrow:**
The soft, sponge-like tissue in the center of most bones. It produces white blood cells, red blood cells, and platelets.

**Cancer of unknown primary origin:**
A case in which cancer cells are found in the body, but the place where the cells first started growing (the origin or primary site) cannot be determined.

**Cancer vaccine:**
A type of vaccine that is either made from a patient’s own tumor cells or from substances taken from tumor cells. A cancer vaccine may help the immune system kill cancer cells. Also called cancer treatment vaccine.
**Capillary:**
The smallest type of blood vessel. A capillary connects a small artery to a small vein to form a network of blood vessels in almost all parts of the body. The wall of a capillary is thin and leaky, and capillaries are involved in the exchange of fluids and gases between tissues and the blood.

**Carcinoma in situ:**
A group of abnormal cells that remain in the place where they first formed. They have not invaded normal tissues yet. These abnormal cells may become aggressive cancer and spread into nearby normal tissue.

**Cell:**
The individual unit that makes up the tissues of the body. All living things are made up of one or more cells.

**Cell proliferation:**
An increase in the number of cells as a result of cell growth and cell division.

**Central nervous system:**
The brain and spinal cord, also called CNS.

**Chemotherapy:**
Treatment with drugs that kill cancer cells.

**Chromosome:**
The part of a cell that contains genetic information. Except for sperm and eggs, all dog cells have 78 chromosomes, and cats have 38 chromosomes.

**Clinical trial:**
A type of research study that tests how well new medical approaches work in patients. These studies test new methods of screening, prevention, diagnosis, or treatment of a disease, also called clinical study.

**Computed tomography scan:**
A series of detailed pictures of areas inside the body taken from different angles. The pictures are created by a computer linked to an x-ray machine, also called CAT scan, computerized axial tomography scan, computerized tomography, and CT scan.

**Cytokine:**
A substance that is made by cells of the immune system. Some cytokines can boost the immune response and others can suppress it. Cytokines can also be made in the laboratory by recombinant DNA technology and used in the treatment of various diseases, including cancer.

**Cytotoxic T cell:**
A type of immune cell that can kill certain cells, including foreign cells, cancer cells, and cells infected with a virus. Cytotoxic T cells can be separated from other blood cells, grown in the
laboratory, and then given to a patient to kill cancer cells. A cytotoxic T cell is a type of white blood cell and a type of lymphocyte. Also called cytotoxic T lymphocyte and killer T cell.

**Diagnosis:**
The process of identifying a disease, such as cancer, from its signs and symptoms.

**Diagnostic technique:**
A type of method or test used to help diagnose a disease or condition. Imaging tests and tests to measure blood pressure, pulse, and temperature are examples of diagnostic techniques.

**Dose:**
The amount of medicine taken, or radiation given, at one time.

**Endothelial cell:**
The main type of cell found in the inside lining of blood vessels, lymph vessels, and the heart.

**Erythropoietin:**
A substance that is naturally produced by the kidneys, and that stimulates the bone marrow to make red blood cells. When erythropoietin is made in the laboratory, it is called epoetin alfa or epoetin beta.

**Experimental:**
In clinical trials, refers to a drug (including a new drug, dose, combination, or route of administration) or procedure that undergone basic laboratory testing and is now to be tested in animals with certain diseases, such as cancer. All experimental treatments have to be approved by a University committee. Also called investigational.

**Extravasation:**
The leakage of blood, lymph, or other fluid, such as an anticancer drug, from a blood vessel or tube into the tissue around it. It is also used to describe the movement of cells out of a blood vessel into tissue during inflammation or metastasis (the spread of cancer).

**Fatigue:**
A condition marked by extreme tiredness and inability to function due lack of energy. Fatigue may be acute or chronic.

**Fistula:**
An abnormal opening or passage between two organs or between an organ and the surface of the body. Fistulas may be caused by injury, infection, inflammation, cancer, or irradiation, or may be created during surgery.

**Gene:**
The functional and physical unit of heredity passed from parent to offspring. Genes are pieces of DNA, and most genes contain the information for making a specific protein.
**Genetic:**
Inherited; having to do with information that is passed from parents to offspring through genes in sperm and egg cells.

**Helper T cell:**
A type of immune cell that stimulates killer T cells, macrophages, and B cells to make immune responses. A helper T cell is a type of white blood cell and a type of lymphocyte, also called CD4-positive T lymphocyte.

**Hematopoietic growth factor:**
A group of proteins that causes blood cells to grow and mature.

**High-dose chemotherapy:**
An intensive drug treatment to kill cancer cells, but that also destroys the bone marrow and can cause other severe side effects. High-dose chemotherapy is usually followed by bone marrow or stem cell transplantation to rebuild the bone marrow.

**Imaging test:**
A type of test that makes pictures of areas inside the body. Some examples of imaging tests are radiographs, CT scans, and MRIs, also called imaging procedure.

**Immune response:**
The activity of the immune system against foreign substances (antigens).

**Immune system:**
The complex group of organs and cells that defends the body against infections and other diseases.

**Immunotherapy:**
Treatment to boost or restore the ability of the immune system to fight cancer, infections, and other diseases. Also used to lessen certain side effects that may be caused by some cancer treatments. Agents used in immunotherapy include monoclonal antibodies, growth factors, and vaccines. These agents may also have a direct antitumor effect. Also called biological response modifier therapy, and biological therapy.

**Infection:**
Invasion and multiplication of microbes in the body. Infections can occur in any part of the body and can spread throughout the body. The germs may be bacteria, viruses, yeast, or fungi. They can cause a fever and other problems, depending on where the infection occurs. When the body’s natural defense system is strong, it can often fight the germs and prevent infection. Some cancer treatments can weaken the natural defense system.

**Injection:**
Use of a syringe and needle to push fluids or drugs into the body; often called a "shot."
**Intravasation:**
The movement of a cell or a foreign substance through the wall of a blood or lymph vessel into the vessel itself. In cancer, this is how cancer cells pass through a vessel wall and enter the blood or lymph systems. It is one way that cancer spreads in the body.

**Interleukin-11:**
One of a group of related proteins made by leukocytes (white blood cells) and other cells in the body. Interleukin-11 is made by support cells in the bone marrow. It causes the growth of several types of blood cells. Oprelvekin (interleukin-11 made in the laboratory) is used as a biological response modifier to increase the number of platelets, especially in patients receiving chemotherapy for cancer. Also called IL-11.

**Kidney:**
The kidneys remove waste and extra water from the blood (as urine) and help keep chemicals (such as sodium, potassium, and calcium) balanced in the body. The kidneys also make hormones that help control blood pressure and stimulate bone marrow to make red blood cells.

**Laboratory test:**
A medical procedure that involves testing a sample of blood, urine, or other substance from the body. Tests can help determine a diagnosis, plan treatment, check to see if treatment is working, or monitor the disease over time.

**Leukemia:**
The type of cancer that starts in blood-forming tissue such as the bone marrow and causes large numbers of blood cells to be produced and enter the bloodstream.

**Local therapy:**
Treatment that affects cells in the tumor and the area close to it.

**Lung:**
one of a pair of organs in the chest that supplies the body with oxygen, and removes carbon dioxide from the body.

**Lymph node:**
A rounded mass of lymphatic tissue that is surrounded by a capsule of connective tissue. Lymph nodes filter lymph (lymphatic fluid), and they store lymphocytes (white blood cells). They are located along lymphatic vessels, also called lymph gland.

**Lymphatic system:**
The tissues and organs that produce, store, and carry white blood cells that fight infections and other diseases. This system includes the bone marrow, spleen, thymus, lymph nodes, and lymphatic vessels (a network of thin tubes that carry lymph and white blood cells). Lymphatic vessels branch, like blood vessels, into all the tissues of the body.
**Lymphocyte:**
A type of immune cell that is made in the bone marrow and is found in the blood and in lymph tissue. The two main types of lymphocytes are B lymphocytes and T lymphocytes. B lymphocytes make antibodies, and T lymphocytes help kill tumor cells and help control immune responses. A lymphocyte is a type of white blood cell.

**Macrophage:**
A type of white blood cell that surrounds and kills microorganisms, removes dead cells, and stimulates the action of other immune system cells.

**Magnetic resonance imaging:**
A procedure in which radio waves and a powerful magnet linked to a computer are used to create detailed pictures of areas inside the body. These pictures can show the difference between normal and diseased tissue. Magnetic resonance imaging makes better images of organs and soft tissue than other scanning techniques, such as computed tomography (CT) or x-ray. Magnetic resonance imaging is especially useful for imaging the brain, the spine, the soft tissue of joints, and the inside of bones, also called MRI.

**Melanoma:**
A form of cancer that begins in melanocytes (cells that make the pigment melanin). It may appear on the skin, or inside the mouth, in which case it is almost always malignant.

**Metastatic:**
Having to do with metastasis, which is the spread of cancer from the primary site (place where it started) to other places in the body.

**Micrometastasis:**
Small numbers of cancer cells that have spread from the primary tumor to other parts of the body and are too few to be picked up in a screening or diagnostic test.

**Microscopic:**
Too small to be seen without a microscope.

**Monoclonal antibody:**
A type of protein made in the laboratory that can bind to substances in the body, including tumor cells. There are many kinds of monoclonal antibodies. Each monoclonal antibody is made to find one substance. Monoclonal antibodies are being used to treat some types of cancer and are being studied in the treatment of other types. They can be used alone or to carry drugs, toxins, or radioactive materials directly to a tumor.

**Multiple myeloma:**
A type of cancer that begins in plasma cells (white blood cells that produce antibodies), and affects the bone marrow and bones.
**Natural killer cell:**
A type of immune cell that has granules (small particles) with enzymes that can kill tumor cells or cells infected with a virus. A natural killer cell is a type of white blood cell, also called NK cell.

**Nausea:**
A feeling of sickness or discomfort in the stomach that may come with an urge to vomit. Nausea is a side effect of some types of cancer therapy.

**Neupogen:**
A colony-stimulating factor that stimulates the production of neutrophils (a type of white blood cell). It is a cytokine that is a type of hematopoietic (blood-forming) agent, also called G-CSF and granulocyte colony-stimulating factor.

**Nutrition therapy:**
Treatment based on nutrition. It includes checking a person’s nutrition status, and giving the right foods or nutrients to treat conditions such as those caused by diabetes, heart disease, and cancer. It may involve simple changes in a patient’s diet, or intravenous or tube feeding. Nutrition therapy may help patients recover more quickly and spend less time in the hospital.

**Organ:**
A part of the body that performs a specific function. For example, the heart is an organ.

**Palliative care:**
Care given to improve the quality of life of patients who have a serious or life-threatening disease. The goal of palliative care is to prevent or treat as early as possible the symptoms of a disease, or side effects caused by treatment of a disease. It is also called supportive care, and symptom management.

**Palliative therapy:**
Treatment given to relieve the symptoms and reduce the suffering caused by cancer and other life-threatening diseases. Palliative cancer therapies are given together with other cancer treatments, from the time of diagnosis, through treatment, recurrent or advanced disease, and at the end of life.

**Pancreas:**
A glandular organ located in the abdomen. It makes pancreatic juices, which contain enzymes that aid in digestion, and it produces several hormones, including insulin. The pancreas is surrounded by the stomach, intestines, and other organs.

**Pathologist:**
A doctor who identifies diseases by studying cells and tissues under a microscope.

**Peritoneum:**
The tissue that lines the abdominal wall and covers most of the organs in the abdomen.
**PET scan:**
A procedure in which a small amount of radioactive glucose (sugar) is injected into a vein, and a scanner is used to make detailed, computerized pictures of areas inside the body where the glucose is used. Because cancer cells often use more glucose than normal cells, the pictures can be used to find cancer cells in the body, also called positron emission tomography scan.

**Plasma:**
The clear, yellowish, fluid part of the blood that carries the blood cells. The proteins that form blood clots are in plasma.

**Precancerous:**
A term used to describe a condition that may (or is likely to) become cancer, also called premalignant.

**Primary tumor:**
The original tumor.

**Progression-free survival:**
The length of time during and after the treatment of a disease, such as cancer, that a patient lives with the disease but it does not get worse. In a clinical trial, measuring the progression-free survival is one way to see how well a new treatment works.

**Prophylactic:**
In medicine, something that prevents or protects.

**Prostate:**
A gland in the male reproductive system. The prostate surrounds the part of the urethra (the tube that empties the bladder) just after the bladder, and produces a fluid that forms part of the semen.

**Radiation therapy:**
The use of high-energy radiation from x-rays, gamma rays, neutrons, protons, and other sources to kill cancer cells and shrink tumors. Radiation may come from a machine outside the body (external-beam radiation therapy), or it may come from radioactive material placed in the body near cancer cells (internal radiation therapy). Systemic radiation therapy uses a radioactive substance, such as a radiolabeled monoclonal antibody, that travels in the blood to tissues throughout the body. Also called irradiation and radiotherapy.

**Radioisotope:**
An unstable form of a chemical element that releases radiation as it breaks down and becomes more stable. Radioisotopes may occur in nature or be made in a laboratory. In medicine, they are used in imaging tests and in treatment. Also called radionuclides.

**Recur:**
To come back or to return.
**Recurrence:**
Cancer that has recurred (come back), usually after a period of time during which the cancer could not be detected. The cancer may come back to the same place as the original (primary) tumor or to another place in the body, also called recurrent cancer.

**Rectum:**
The last several inches of the large intestine closest to the anus.

**Rehabilitation:**
In Veterinary Medicine, a process to restore physical abilities lost to injury or disease, in order to function in a normal or near-normal way.

**Regression:**
A decrease in the size of a tumor or in the extent of cancer in the body.

**Remission:**
A decrease in or disappearance of signs and symptoms of cancer. In partial remission, some, but not all, signs and symptoms of cancer have disappeared. In complete remission, all signs and symptoms of cancer have disappeared, although cancer still may be in the body.

**Seizure:**
Sudden, uncontrolled body movements and changes in behavior that occur because of abnormal electrical activity in the brain. Symptoms include loss of awareness, loss of muscle control, and shaking. Seizures may be caused by drugs, high fevers, head injuries, and certain diseases, such as cancer.

**Side effect:**
A problem that occurs when treatment affects healthy tissues or organs. Some common side effects of cancer treatment are fatigue, nausea, vomiting, decreased blood cell counts, hair loss, and diarrhea.

**Spleen:**
An organ that is part of the lymphatic system. The spleen is made mostly of lymphocytes, filters the blood, stores blood cells, and destroys old blood cells. It is located on the left side of the abdomen near the stomach.

**Stage:**
The extent of a cancer in the body. Staging is usually based on the size of the tumor, whether lymph nodes contain cancer, and whether the cancer has spread from the original site to other parts of the body.

**Stem cell:**
A cell from which other types of cells develop. For example, blood cells develop from blood-forming stem cells.
Stomach:
An organ that is part of the digestive system. The stomach helps digest food by mixing it with digestive juices and churning it into a thin liquid.

Supportive care:
Care given to improve the quality of life of patients who have a serious or life-threatening disease. The goal of supportive care is to prevent or treat as early as possible the symptoms of a disease, side effects caused by treatment of a disease, palliative care, and symptom management.

Surgery:
A procedure to remove or repair a part of the body or to find out whether disease is present. An operation.

T cell:
A type of white blood cell. T cells are part of the immune system and develop from stem cells in the bone marrow. They help protect the body from infection and may help fight cancer. Also called T lymphocyte.

Targeted therapy:
A type of treatment that uses drugs or other substances, such as monoclonal antibodies, to identify and attack specific cancer cells. Targeted therapy may have fewer side effects than other types of cancer treatments.

Therapeutic:
Having to do with treating disease and helping healing take place.

Thyroid:
A gland located beneath the larynx (voice box) that makes thyroid hormone and calcitonin. The thyroid helps regulate growth and metabolism, also called thyroid gland.

Tissue:
A group or layer of cells that work together to perform a specific function.

Transfusion:
A procedure in which a patient is given an infusion of whole blood or parts of blood. The blood is usually donated by another animal, also called blood transfusion.

Tumor grade:
A description of a tumor based on how abnormal the cancer cells look under a microscope and how quickly the tumor is likely to grow and spread. Low-grade cancer cells look more like normal cells and tend to grow and spread more slowly than high-grade cancer cells. Grading systems are different for each type of cancer and animal species. They are used to help plan treatment and determine prognosis, also called histologic grade.

Tumor marker:
A substance found in tissue, blood, or other body fluids that may be a sign of cancer or certain
benign (noncancerous) conditions. Most tumor markers are made by both normal cells and cancer cells, but they are made in larger amounts by cancer cells. A tumor marker may help to diagnose cancer, plan treatment, or find out how well treatment is working or if cancer has come back.

**Vomit:**
To eject some or all of the contents of the stomach through the mouth.

**White blood cell:**
A type of immune cell. Most white blood cells are made in the bone marrow and are found in the blood and lymph tissue. White blood cells help the body fight infections and other diseases. Neutrophils, monocytes, and lymphocytes are white blood cells, also called leukocyte and WBC.

**Wound:**
A break in the skin or other body tissues caused by injury or surgical incision (cut).

**X-ray:**
A type of radiation used in the diagnosis and treatment of cancer and other diseases. In low doses, x-rays are used to diagnose diseases by making pictures of the inside of the body. In high doses, x-rays are used to treat cancer.