

# Glossary

**Acute kidney injury (AKI)** Also known as acute kidney failure or acute renal failure is a sudden decline in renal function triggered by any of a number of conditions such as shock, trauma, drug toxicity, acute glomerulonephritis, vasculitis, or obstruction to urine flow.

**Acute myocardial infarction (AMI)** An event causing death to a portion of the heart muscle due to lack of blood supply.

**Adult polycystic kidney disease** An inherited disease in which normal kidney tissue is replaced by multiple cysts.

**Albumin/creatinine ratio (ACR)** A screening test used to estimate the amount of albumin in a patient's urine.

**Anemia** A condition marked by a reduced number of red cells in the bloodstream.

**Angiography** A radiographic procedure where a radio-opaque contrast material is injected into a blood vessel for the purpose of identifying its anatomy.

**Angioplasty** A procedure in which a balloon catheter is inserted into a blocked or narrowed vessel in order to reopen the vessel and allow normal blood flow.

**Angiotensin converting enzyme (ACE) inhibitor** An antihypertensive agent that inhibits the conversion of Angiotensin I to angiotensin II. Can delay progression of kidney disease in diabetics.

**Angiotensin II receptor blocker (ARB)** An antihypertensive agent that inhibits the actions of angiotensin II, a substance which causes constriction of blood vessels.

**Arteriovenous fistula** A type of vascular access used in hemodialysis patients, and created by the anastomosis of an artery and a vein.

**Arteriovenous graft** A type of vascular access used in hemodialysis patients and created via a connection between an artery and vein using either a native vessel (e.g. saphenous vein) or a synthetic material.

**Atherosclerotic heart disease (ASHD)** A disease of the arteries of the heart, characterized by a thickening and narrowing and/or loss of elasticity of the arterial walls due to plaque deposition.

**Beta blockers** Antihypertensive medications that block B-adrenergic receptors, thus interfering with the actions of endogenous catecholamines (epinephrine and norepinephrine), slowing the heart rate and reducing the constriction of blood vessels.

**Blood urea nitrogen (BUN)** A by-product of the breakdown of amino acids and endogenous and ingested protein.

**Body mass index (BMI)** A measure of height to weight ratio: weight (kg)/height (m<sup>2</sup>).

**C-reactive protein** A protein produced by the liver in response to infection or inflammation; high levels are associated with an increased risk of heart disease and stroke.

**Calcium channel blockers** Antihypertensive agents that work by blocking the access of calcium to muscle cells in artery walls.

**Cardiac arrest** A sudden complete cessation of cardiac activity.

**Cardiac resynchronization therapy defibrillator (CRT-D)** An implantable device designed to arrest the fibrillation of heart muscle by applying an electric shock, thus depolarizing the heart cells and allowing normal rhythm to return.

**Cardiomyopathy** A general diagnostic term indicating a disease of the heart muscle.

**Catastrophic coverage** Health insurance to cover costs that exceed routine healthcare insurance benefits.

**Dialysis catheter** A vascular access used in hemodialysis patients, commonly implanted into the jugular or subclavian vein.

## GLOSSARY

### **Centers for Disease Control & Prevention (CDC)**

The lead federal agency for protecting the health and safety of people at home and abroad; develops and applies programs designed to improve the health of the people of the United States.

### **Centers for Medicare and Medicaid Services**

(CMS) Formerly the Health Care Financing Administration (HCFA). Federal agency that administers the Medicare, Medicaid, and State Childrens' Health insurance programs.

**Cerebrovascular accident (CVA)** A general descriptor that encompasses such problems as stroke and cerebral hemorrhage.

**Cerebrovascular disease** A disease that causes narrowing or occlusion of the arteries supplying blood to the brain.

**Chain provider** A single business entity that at years end owns or operates 20 or more freestanding dialysis units. This definition applies to all chain affiliation references in the USRDS Annual Data Reports. An alternative definition from the Centers for Medicare and Medicaid Services can be found under "definitions" in the Health Care Provider/Supplier Application Form, CMS 855.

**Chronic kidney disease (CKD)** A condition in which there is a progressive loss of kidney function which over time may lead to end-stage renal disease.

### **Chronic Kidney Disease Epidemiology**

**Collaboration (CKD-EPI)** A method used to estimate glomerular filtration rate using a single serum creatinine. Yields a lower CKD prevalence than the Modification of Diet in Renal Disease (MDRD) Study equation.

### **Chronic obstructive pulmonary disease (COPD)**

One of a number of classes of chronic progressive lung diseases .

### **Clinical Performance Measures (CPM) Project**

Formerly the Core Indicator Project. A project in which CMS and the ESRD networks cooperatively maintain a clinical database of key elements related to the quality of dialysis care. These elements are used as indicators in quality improvement initiatives.

**Common Working File (CWF) System** The Medicare inpatient/outpatient and physician/supplier benefit coordination and claims validation system.

Under the CWF, CMS maintains both institutional and physician supplier claims-level data. CWF claims records are the data source for most claims and utilization files used by the USRDS.

**Comprehensive Dialysis Study (CDS)** A special data collection study that focuses on physical activity level, health-related quality of life, and work/disability status reported by patients who have recently started maintenance dialysis.

**Congestive heart failure (CHF)** A condition caused by impaired pumping of the heart and consequent fluid accumulation in the lungs.

**Continuous ambulatory peritoneal dialysis (CAPD)** A type of dialysis in which dialysate is continuously present in the abdominal cavity. Fluid is exchanged using gravity to fill and empty the cavity 4–5 times a day.

**Continuous cycler-assisted peritoneal dialysis (CCPD)** A type of dialysis in which the abdominal cavity is filled and emptied of dialysate using an automated cycler machine.

**Coverage gap** The interval after initial benefits are exhausted, but preceding catastrophic coverage.

**Creatinine** A waste product of protein metabolism found in the urine. Blood creatinine concentration is an indirect measure of kidney function. Abnormally high creatinine levels indicate kidney failure or renal insufficiency.

**Creatinine clearance** A measure of kidney function.

**Creditable coverage** Prescription drug coverage that is actuarially equivalent to the standard Part D benefit, as defined annually by CMS. Beneficiaries with creditable coverage may forgo participation in Medicare Part D without having to pay increased monthly premiums upon future enrollment. Examples of creditable coverage include the Federal Employee Health Benefits Program, TRICARE, VA Health Care Benefits, State Pharmacy Assistance Programs (SPAPs), and private insurance that is eligible for the retiree drug subsidy. Private insurance for the working aged may or may not be creditable.

**Cystatin-C equation** A method which uses the laboratory marker cystatin-C for estimating glomerular filtration rate (GFR).

**Darbepoetin alfa (DPO)** One of a class of medications called erythropoietic proteins. Used to treat anemia in patient with serious kidney disease.

**Death Notification Form (CMS-2746)** A form submitted following the death of an ESRD patient, and containing basic patient demographic information in addition to information on the primary cause of death.

**Employer group health plan (EGHP)** A health plan of or contributed to by an employer, providing medical care directly or through other methods such as insurance or reimbursement to current or former employees, or to these employees and their families.

**End-stage renal disease (ESRD)** A condition in which a person's kidney function is inadequate to support life.

**Erythropoiesis stimulating agent (ESA)** Used to increase the production of red blood cells; includes erythropoietin (EPO) and darbepoetin alfa (DPO).

**Erythropoietin (EPO)** A hormone secreted chiefly by the adult kidney; acts on bone marrow to stimulate red cell production. Also produced in a formulated version to treat anemia.

**ESRD Facility Survey** Data for this survey are collected annually by CMS from all facilities certified to provide Medicare-covered renal dialysis and transplantation. The survey uses CMS form 2744, and encompasses the full calendar year. Geographic data are included to the level of facility ZIP code. Each record contains facility information and data on the number of patients served, dialysis treatments provided, and kidney transplants performed. The data include services to both Medicare and non-Medicare patients.

**ESRD Networks** Regional organizations, established by law in 1978, contracted by CMS to perform quality oversight activities to assure the appropriateness of services and protection for dialysis patients.

**Expanded criteria donors (ECDs)** Any kidney donor over the age of age 60 years, or donors between the ages of 50 and 59 years with two of the following criteria: death by CVA, history or hypertension or creatinine at time of recovery (terminal creatinine)  $\geq 1.5$  mg/dL.

**Fills per person** Each prescription drug purchase constitutes a fill. Fills per person are calculated from the quotient of cumulative fills in a population and the number of people in that population.

**Glomerular filtration rate (eGFR)** Rate in ml/min/1.73 m<sup>2</sup> of the volume of plasma filtered by the kidney. Rates of filtration may be measured directly or estimated based on formulae that employ combinations of an individual's age, gender, and height, and on levels of serum creatinine, blood urea nitrogen, and serum albumin. GFR is traditionally considered the best overall index to determine renal function.

**Glycosylated hemoglobin (HbA<sub>1c</sub>) test** Used to help determine how well a patient's diabetes is being controlled, this test measures the percentage of hemoglobin-bound glucose in the bloodstream.

**Health Maintenance Organization (HMO)** An organization that provides or arranges managed care on a prepaid basis.

**Health Service Area (HSA)** A group of counties described by the authors of the CDC Atlas of United States Mortality as "an area that is relatively self-contained with respect to hospital care."

**Healthy People 2020** A national agenda for health promotion and disease prevention, with objectives and goals aimed at improving the health of the American people ([www.health.gov/healthypeople](http://www.health.gov/healthypeople)).

**Hemodialysis** The process of removing toxins from the blood by diffusion through a semi-permeable membrane.

**Hemoglobin** Oxygen-carrying protein in the erythrocyte (red blood cell).

**Hepatitis** An inflammation of the liver that may be caused by a viral infection, poisons, or the use of alcohol or other drugs. Forms include Hepatitis A, usually transmitted by contaminated food or water; Hepatitis B transmitted through blood and body fluids; and Hepatitis C, also transmitted through blood and body fluids.

**Hospital-based facility** A dialysis unit attached to or located in a hospital and licensed to provide outpatient dialysis services directly to ESRD patients.

**Implantable cardioverter defibrillator (ICD)**

An implantable device designed to arrest the fibrillation of (heart muscle) by applying electric shock thus depolarizing the heart cells and allowing normal rhythm to return.

**Incident ESRD patient** A patient starting renal replacement therapy for ESRD. Excludes patients with acute renal failure, those with chronic renal failure who die before starting ESRD treatment, and those whose treatments are not reported to CMS.

**Incident population** The people in a population who are newly diagnosed with a disease in a given time period, typically a year.

**Independent unit** A unit licensed to provide outpatient and home maintenance dialysis, and not affiliated with a chain.

**Initial coverage period** The interval following the deductible phase, but preceding the coverage gap.

**Ischemic heart disease (ISHD)** A disease of the heart evidenced by a lowered oxygen supply to the heart tissue, caused by occlusion or narrowing of the arteries supplying the heart muscle.

**Kidney Disease Outcomes Quality Initiative (KDOQI)** Established in 1995 by the National Kidney Foundation to improve patient outcomes and survival by providing recommendations for optimal clinical practices in the areas of dialysis adequacy, vascular access, and anemia.

**Kt/V** A unitless number used to quantify clearance of small molecular weight substances (solutes) such as urea, where  $K$  = dialyzer clearance of urea,  $t$  = dialysis time and  $V$  = volume of distribution of urea, (approximately equal to the total body water). It reflects the degree of removal of these substances during dialysis treatment and is expressed by  $Kt/V$  per hemodialysis session or weekly  $Kt/V$  in the context of peritoneal dialysis.

**Low income subsidy (LIS)** For Medicare beneficiaries with limited income and/or assets, the costs of participation in Medicare Part D may be reduced by the LIS. Beneficiaries who are dually eligible for Medicare and Medicaid are automatically granted the LIS, while beneficiaries who are not dually eligible may apply for it. While the LIS may take eight different levels, with monthly premiums and copayments either eliminated or reduced, all dually eligible beneficiaries pay no monthly premiums.

**Medical Evidence form (CMS-2728)** A form which provides source data about ESRD patients, including information on demographics, primary cause of renal disease, comorbidity, biochemical data, dialysis treatment, transplant, dialysis training, employment status, initial insurance coverage, and first ESRD service date.

**Medicare Advantage Part D plans (MA-PDs)** Medicare Part D plans that are offered only to participants in Medicare Part C.

**Medicare as Secondary Payer (MSP) patient** Medicare beneficiary with a health insurer other than Medicare (e.g. an Employer Group Health Plan) that has primary responsibility for payment of the beneficiary's medical bills.

**Medicare Current Beneficiary Survey (MCBS)** An ongoing national survey of aged, disabled, and institutionalized Medicare beneficiaries sponsored by the Centers for Medicare and Medicaid Services, and used to study the health status, health care use and expenditures, health insurance coverage, and socioeconomic and demographic characteristics of Medicare beneficiaries.

**Microalbuminuria** A condition in which small amounts of albumin are present in the urine; indicates early kidney damage.

**Modality** A method of treatment. Treatment for end-stage renal disease (ESRD) is comprised of three modalities: hemodialysis, peritoneal dialysis, and transplantation.

**Modification of Diet in Renal Disease (MDRD)**

**Study equation** A method used to estimate glomerular filtration (GFR) in patients with impaired renal function using a single serum creatinine, age, sex and race.

**National Health and Nutrition Examination**

**Survey (NHANES)** A survey conducted by the National Center for Health Statistics (NCHS) at the Centers for Disease Control and Prevention; using home interviews and health tests to collect information on health and diet in the United States.

**National Institutes of Health (NIH)** The federal focal point for medical research in the U.S. and one of eight health agencies of the Public Health Services, which are part of the Department of Health and Human Services.

**Organ Procurement and Transplantation**

**Network (OPTN)** The unified transplant network established by the United States Congress under the National Organ Transplant Act (NOTA) of 1984. A private, non-profit organization administered by the United Network for Organ Sharing, under contract with the Health Resources and Services Administration of the U.S. Department of Health and Human Services.

**Part D Medicare coverage** A U.S. government program which subsidizes the costs of medications for Medicare beneficiaries.

**Percutaneous coronary intervention (PCI)** A therapeutic procedure to treat stenotic (narrowed) coronary arteries of the heart found in coronary heart disease. Commonly known as coronary angioplasty or simply angioplasty.

**Period prevalent patient** A patient receiving treatment for ESRD at some point during a period of time, usually six months or a year. Patients may die during the period or be point prevalent at the end of the period. Period prevalence is a useful measure for cost analysis, since it indicates total disease burden over the course of a year.

**Peripheral vascular disease (PVD)** A progressive disease that causes narrowing or occlusion of the arteries.

**Peritoneal dialysis** Dialysis in which fluid (dialysate) is introduced into the abdominal cavity and uremic toxins are removed by diffusion across the peritoneum.

**Point prevalent patient** A patient reported as receiving treatment for ESRD on a particular day of the calendar year (e.g. December 31).

**Program Medical Management and Information System for ESRD, and Renal Beneficiary and Utilization System (PMMIS/REBUS)** The major source of data for the USRDS. This CMS file incorporates data from the Medical Evidence form (CMS 2728), the Death Notification form (CMS 2746), the Medicare Enrollment Database, CMS paid claims records, and the OPTN transplant database.

**Prevalent ESRD patient** A patient on renal replacement therapy or with a functioning kidney transplant (regardless of the transplant date). This definition excludes patients with acute renal failure, those with chronic renal failure who die

before receiving treatment for ESRD, and those whose ESRD treatments are not reported to CMS.

**Prevalent population** The people in a population who have a disease at a given point in time (point prevalence) or during a given time period (period prevalence).

**Proteinuria** The existence of protein in the urine; indicative of kidney damage.

**Recombinant human growth hormone (rhGH)** Also called somatropin; a substance identical in its amino acid sequence to human growth hormone, and used to treat growth hormone deficiency.

**REMIS** CMS's Renal Management Information System (REMIS), which has replaced the Renal Beneficiary and Utilization System (REBUS). It included an operational interface to the SIMS Central Repository until 2012 at which point CROWNWeb replaced the functionality of SIMS.

**Renin Inhibitors** A class of drugs used to lower blood pressure by blocking the renin-angiotensin system which regulates blood volume and systemic vascular resistance.

**Retiree drug subsidy (RDS)** A program designed to encourage employers to continue to provide prescription drug coverage to retirees eligible for Medicare Part D. Under the program, employers received a tax-free rebate equal to 28 percent of covered prescription drug costs incurred by its retirees. The program is relatively simple to administer, but may ultimately be more costly than providing employees a type of Part D plan known as an "employer group waiver plan." Following passage of the Patient Protection and Affordable Care Act, the tax-free status of the subsidy expired on December 31, 2012.

**SIMS** CMS's Standard Information Management System (SIMS), which became operational at the beginning of 2000 and was replaced by CROWNWeb in 2012. Supports CMS reporting requirements and the business processes of the ESRD networks; provides communication and data exchange links for the networks, CMS, and other parts of the renal community; supplies standard core data functionality for previous network data systems; and provides improved electronic communication capabilities, data standardization, and information management tools.

## GLOSSARY

**Standard Analysis Files (SAFs)** CMS files containing final action Medicare inpatient/outpatient claims data: Inpatient, Outpatient, Home Health Agency, Hospice, Skilled Nursing Facility, Clinical Laboratory, Durable Medical Equipment, and 5 percent Sample Beneficiary.

**Standardized hospitalization ratio (SHR)** Used to compare hospitalization rates for a selected group of patients by computing the ratio of the group's observed hospitalization rate to the expected hospitalization rate for the national ESRD population.

**Standardized mortality ratio (SMR)** Used to compare patient mortality rates for a selected group of patients by computing the ratio of the group's observed mortality rate to the expected mortality rate for the national ESRD population.

**Standardized transplantation ratio (STR)** Used to compare transplant rates for a subgroup of patients to national transplant rates, by computing the ratio of the group's observed transplant rate to the expected transplant rate for the national ESRD population.

**Statins** Medications that lower cholesterol through inhibition of the HMG CoA enzyme.

**Total days supply** Each prescription drug is disbursed with sufficient quantity to administer for a set number of days, so long as instructions are followed. The total days supplied is equal to the cumulative number of days supplied through all fills of a particular medication in a population.

**Transient ischemic attacks (TIA)** A temporary loss of neurological function caused by a brief period of inadequate blood supply in a portion of the brain.

**United Network for Organ Sharing (UNOS)** A private, non-profit organization that holds the Organ Procurement and Transplantation Network contract to maintain the national organ transplant waiting lists and coordinates the matching and distribution of organs to patients awaiting transplant.

**Urea reduction ratio (URR)** A means of measuring dialysis efficiency by calculating the change in blood urea nitrogen (BUN) over the course of a dialysis treatment.  $URR = (\text{pre-dialysis BUN} - \text{post-dialysis BUN}) / \text{pre-dialysis BUN} * 100$ .

**Vintage** Time that a patient has had ESRD.

**Waiting list** A list of patients awaiting an organ transplant; maintained by the Organ Procurement and Transplantation Network (OPTN).

Some definitions from U.S. National Library of Medicine's Medical Dictionary: <http://www.nlm.nih.gov/medlineplus/mplusdictionary.html>