

## 2. INFECTIOUS DISEASES

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### A. TERMINOLOGY

- **Antibodies** ..... Proteins, produced by plasma cells, which destroy antigens
- **Electrophoresis**..... Technique of separating proteins (alpha, beta, and gamma globulins) by electrical charge
- **Immunoglobulins**..... A protein (globulin) with antibody activity (e.g., IgG, IgM, IgA, IgE, IgD)
- **Interstitial fluid**..... Fluid in the spaces between cells and becomes lymph when it enters lymph capillaries
- **Leukocytosis** ..... Condition marked by abnormally high number of white blood cells
- **Leukopenia** ..... Condition marked by reduction of white blood cells
- **Lymphadenopathy** ..... Any disorder of lymph nodes or vessels
- **Lymphocyte** ..... White blood cell (agranulocyte: lymphocyte, monocyte) found in lymph tissue; produces antibodies
- **T cells** ..... Lymphocytes formed in the thymus gland which act directly on antigen to destroy them or produce chemicals (e.g., interferons and interleukins) that are toxic to antigens

### B. PATHOLOGY

- **AIDS** ..... Suppression or deficiency of immune response caused by exposure to human immunodeficiency virus
- **Candidiasis** ..... Infection caused by yeast-like fungus (*Candida*) normally present in the mouth, skin, intestinal tract causing infections of the mouth (thrush), respiratory and urogenital tracts, and skin
- **Cryptococcus** ..... Yeast-like fungus (*Cryptococcus*) causing lung, brain, and blood infections; pathogen is found in pigeon droppings, nesting places, air, water, and soil
- **Cytomegalovirus** ..... A group of large herpes-type viruses causing colitis, pneumonitis, retinitis; found in saliva, semen, cervical secretions, urine, feces, blood, and breast milk
- **Mononucleosis** ..... Acute infectious disease caused by virus, marked by enlarge lymph nodes and increase numbers of lymphocytes and monocytes in the bloodstream
- **Pneumocystis carinii** ..... One-celled organism causing lung infection; pathogen is found in air, water, soil, and is carried by animals.
- **Sarcoidosis** ..... Chronic progressive inflammatory disease in which small nodules or tubercles form in lymph nodes and other organs
- **SARS** ..... Severe acute respiratory syndrome is a respiratory illness caused by a new, previously unrecognized coronavirus. Initial symptoms begin with a fever, chills, headache, and malaise. Some patients have experienced mild respiratory symptoms, dry cough, and troubled breathing.
- **SIRS** ..... Systemic inflammatory response syndrome is a major complication of infection or trauma. Symptoms include systemic inflammation, elevated or reduced temperature, elevated white blood count, and rapid heart rate and respiration.
- **Toxoplasmosis** ..... Infection from a parasite characterized by lesions of the central nervous system
- **West Nile Virus Fever**..... Transmitted to humans by the bite of a mosquito that has bitten an infected bird, the West Nile viral infection results in mild symptoms, consisting of fever, headache and body aches, in most healthy people. In elderly and/or immunocompromised patients, the virus may cause encephalitis, meningitis, or permanent neurological damage and can be life-threatening.

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### C. Pharmacology

CLASSIFICATION	TRADE/BRAND NAME	GENERIC NAME
Antibiotics, antimicrobials	Ampicillin	Ampicillin
	Amoxil	amoxicillin trihydrate
	Augmentin	amoxicillin and clavulanic acid
	Bactrim, Septra	sulfamethoxazole and trimethoprim
	Biaxin	Clarithromycin
	Ceclor	Cefaclor
	Ceftin	Cefuroxime
	Cefzil	Cefprozil
	Cipro	ciprofloxacin hydrochloride
	Duricef	Cefadroxil
	Erythrocin, Erythromycin	Erythromycin
	Fortaz	Ceftazadime
	Furadantin, Macrochantin	nitrofurantoin
	Keflex	cephalexin
	Kefurox, Zinacef	cefuroxime
	Levaquin	
	Monocid	cefonicid
	Noroxin	norfloxacin
PenVK	penicillin v potassium	
Rocephin	ceftriaxone	
Zithromax	azithromycin dihydrate	
Colony stimulating factors	Neupogen	filgrastim
	Prokine, Leukine	sargramostim
AIDS treatment	Didanosine	dideoxyinosine
	Lamivudine	dideoxynucleoside
	Stavudine	thymidine
	Zalcitabine	dideoxycytidine
	Zidovudine	AZT (3'-azido'3'-deoxythymidine)
Immunotherapy Biological Response Modifier	Xigris	

### D. ICD-9-CM Conventions & Principles

- Site of infection vs..... Organism** Search the index thoroughly when coding infections. A subterm for the organism always takes precedence over a more general subterm (e.g., acute or chronic). When the organism is specified in the record but is not indexed under the main term for the condition, refer to main term "Infection" or to the main term for the organism.
- Late effects.....** When coding late effects for residual conditions due to previous infection or parasitic infestation (i.e., tuberculosis, poliomyelitis, other infectious and parasitic diseases), the code for the residual condition is sequenced first, followed by the appropriate late effect code (137 – 139). A code for the infection is not assigned because it is no longer present.

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- **Bacteremia vs. Septicemia** ..... Usually transient, bacteremia is the presence of bacteria, viruses, fungi, or parasites in the bloodstream after a trauma or mild infection and ordinarily clears promptly through the body's own immune system. It progresses to septicemia only when there is a more infectious process or an impaired immune system.
  
- **Septicemia** ..... Septicemia and sepsis have often been used interchangeably by physicians and in ICD-9-CM. Current terminology now make a distinction between sepsis and septicemia.  
  
Septicemia is a systemic disease associated with the presence and persistence of pathological microorganisms or toxins (bacteria, viruses, fungi) in the blood.  
  
Even when a patient shows clinical evidence of septicemia, the blood culture may be negative for various reasons (e.g. difficulty of culturing certain organisms from the blood; effects of growth-inhibitory factors in the blood; initiation of antibiotic therapy before blood culture samples were taken). Negative or inconclusive blood cultures do not preclude a diagnosis of septicemia in patients with clinical evidence of the condition.  
  
A diagnosis of septicemia can neither be assumed nor ruled out on the basis of blood culture results alone; a code for septicemia is assigned only when the physician makes a diagnosis of septicemia.
  
- **SIRS (Sepsis)**..... SIRS is a major complication of infection or trauma and includes systemic inflammation, elevated or reduced temperature, elevated white blood count, and rapid heart rate and respiration.  
  
“Sepsis” is defined as SIRS due to infection. “Severe sepsis” is defined as sepsis with associated acute organ dysfunction.  
  
Septic shock is defined as sepsis with hypotension, a failure of the cardiovascular system.  
  
SIRS is classified to 995.9x, Systemic inflammatory response syndrome. The underlying cause of SIRS should be coded first. By using both an infection or trauma code along with a code from 995.9x, the severity of the patient's illness will be accurately reflected in the coding.  
  
In the absence of a specified underlying condition, the first code listed will default to 038.9, Unspecified septicemia.  
  
995.9x may not be assigned if the term ‘sepsis’ or SIRS is not documented. 995.9x can never be assigned as a principal diagnosis.
  
- **Septicemia vs. Urosepsis** ..... The term “Urosepsis” may require further clarification for coding purposes. Review the medical record for documentation that suggests the possibility of septicemia. Query the physician to determine whether the diagnosis (of Urosepsis) is intended to mean (1) generalized septicemia caused by leakage of urine or toxic urine by-products into the general vascular circulation [038.x] or (2) urine contaminated by bacteria but without other findings [599.0].  
  
A diagnostic statement of urinary tract infection followed by a diagnosis of septicemia usually indicates the condition has progressed to septicemia in which case, the septicemia should be coded.
  
- **Gram-negative Bacterial infection** ..... Gram-negative bacteria are a specific group of organisms with particular staining characteristics. Gram-negative infections are ordinarily more severe and require more intensive care than gram-positive infections.  
  
A code is never assigned solely on the basis of gram-stain results; the assignment of a code is based on the physician's clinical evaluation of the condition.

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- **Drug-resistant Infections**..... Codes [V09.x] to identify infections that have become resistant to the drugs commonly used to treat them can be located in the index under the main term “Resistance.” A code is assigned for each specified drug to which the organism has become resistant.

MRSA – methicillin resistant staphylococcus aureus  
VRE – vancomycin resistant enterococcus

- **AIDS and HIV**..... When a patient is admitted for treatment of an HIV infection or any related complications, code 042, HIV disease is sequenced as principal diagnosis with additional codes for related conditions.

When a patient with HIV is admitted for treatment of an entirely unrelated condition (e.g., an injury), that condition is designated as principal diagnosis with 042 as an additional code.

Code 042 is not assigned when the diagnostic statement indicates that the infection is “suspected,” “likely,” or “questionable” (which is an exception to the general guideline that directs the coder to assign a code for a diagnosis qualified as suspected or possible as if it were established).

When an asymptomatic patient with no prior diagnosis of HIV infection or positive-HIV status requests testing to determine his/her HIV status, use V73.89, Screening for other specified viral disease. When the patient shows signs or symptoms of illness or has been diagnosed with a condition related to HIV infection, code the signs and symptoms or the diagnosis rather than the screening code.

When the HIV test result is positive but the patient displays no symptoms and has no related complications and no established diagnosis of HIV infection, code V08, Asymptomatic HIV status, is assigned.

**NOTE:** (In the state of California, the assignment of codes V08 and/or 795.71 is prohibited by California Health & Safety Code, Division 1, Part 1, Chap 1.1, formerly known as Assembly Bill 488 in April 1985.)