

Appendix 1. Definition of a sepsis case

Admission cases with 1) bacterial or fungal infection or the conditions that are often complicated by such infections (e.g. surgical abdomen) as indicated by the primary or the first secondary diagnostic codes, 2) prescription of intravenous antibiotics and 3) presence of organ dysfunction involving at least one system.

Coding conventions for both diagnostic and procedure codes:

- a) Dot (.) is omitted from diagnostic codes (i.e. J38.3 → J383)
- b) If there are more than a code in the same hierarchy (i.e. J38 and J383), the parent codes indicate only themselves specifically, but not its children (i.e. J38x).
- c) The code at the end of each of hierarchy, including those without any parent, indicate both themselves and their children (i.e. J37x for J37)

1) Korean Classification of Diseases sixth revision codes used for identification of infectious conditions

A00, Cholera; A01, Typhoid and paratyphoid fevers; A02, Other salmonella infections; A03, Shigellosis; A04, Other bacterial intestinal infections; A05, Other bacterial foodborne intoxications, NEC; A09, Other gastroenteritis and colitis of infectious and unspecified origin; A20, Plague; A21, Tularaemia; A23, Brucellosis; A24, Glanders and Melioidosis; A25, Rat-bite fevers; A26, Erysipeloid; A27, Leptospirosis; A28, Other zoonotic bacterial diseases, NEC; A31, Infection due to other mycobacteria; A32, Listeriosis; A35, Other tetanus; A36, Diphtheria; A37, Whooping cough; A38, Scarlet fever; A39, Meningococcal infection; A40, Streptococcal sepsis; A41, Other sepsis; A42, Actinomycosis; A43, Nocardiosis; A44, Bartonellosis; A46, Erysipelas; A48, Other bacterial diseases, NEC; A49, Bacterial infection of unspecified site; A54, Gonococcal infection; A55, Chlamydial lymphogranuloma (venereum); A56, Other sexually transmitted chlamydial diseases; A57, Chancroid; A58, Granuloma inguinale; A63, Other predominantly sexually transmitted diseases, NEC; A64, Unspecified sexually transmitted disease; A68, Relapsing fevers; A69, Other spirochaetal infections; A70, Chlamydia psittaci infection; A74, Other diseases caused by chlamydiae; A75, Typhus fever; A77, Spotted fever (tick-borne rickettsioses); A78, Q fever; A79, Other rickettsioses; B37, Candidiasis; B38, Coccidioidomycosis; B39, Histoplasmosis; B40, Blastomycosis; B41, Paracoccidioidomycosis; B42, Sporotrichosis; B43, Chromomycosis and phaeomycotic abscess; B44, Aspergillosis; B45, Cryptococcosis; B46, Zygomycosis; B48, Other mycoses, NEC; B49, Unspecified mycosis; B99, Other and unspecified infectious diseases; D71, Progressive septic granulomatosis; D733, Abscess of spleen; D738, Perisplenitis; E060, Abscess of thyroid; E321, Abscess of thymus; G00, Bacterial meningitis, NEC; G01, Meningitis in bacterial diseases classified elsewhere; G02, Meningitis in other infectious and parasitic diseases classified elsewhere; G03, Meningitis due to other and unspecified causes; G04, Encephalitis, myelitis and encephalomyelitis; G05, Encephalitis, myelitis and encephalomyelitis in diseases classified elsewhere; G06, Intracranial and intraspinal abscess and granuloma; G07, Intracranial and intraspinal abscess and granuloma in diseases classified elsewhere; G08, Intracranial and intraspinal phlebitis and thrombophlebitis; H050, Acute inflammation of orbit; H440, Purulent endophthalmitis; H441, Other endophthalmitis; H600, Abscess of external ear; H601, Cellulitis of external ear; H602, Malignant otitis externa; H603, Other infective otitis externa; H608, Other otitis externa; H609, Otitis externa, unspecified; H610, Perichondritis of external ear; H620, Otitis externa in bacterial diseases classified elsewhere; H622, Otitis externa in mycoses; H623, Otitis externa in other infectious and parasitic diseases classified elsewhere; H624, Otitis externa in other diseases classified elsewhere; H66, Suppurative and unspecified otitis media; H67, Otitis media in diseases classified elsewhere; H70, Mastoiditis and related conditions; H750, Mastoiditis in infectious and parasitic diseases classified elsewhere; I30, Acute pericarditis; I32, Pericarditis in diseases classified elsewhere; I33, Acute and subacute endocarditis; I38, Endocarditis, valve unspecified; I39, Endocarditis and heart valve disorders in disease classified elsewhere; I518, Carditis (acute, chronic); I80, Phlebitis and thrombophlebitis; I831, Varicose veins of lower extremities with inflammation; I832, Varicose veins of lower extremities with both ulcer and inflammation; I88, Nonspecific lymphadenitis; I891, Lymphangitis; J01, Acute sinusitis; J02, Acute pharyngitis; J03, Acute tonsillitis; J04, Acute laryngitis and tracheitis; J05, Acute obstructive laryngitis (croup) and epiglottitis; J13, Pneumonia due to Streptococcus

pneumoniae; J14, Pneumonia due to *Hemophilus influenzae*; J15, Bacterial pneumonia, NEC; J16, Pneumonia due to other infectious organisms, NEC; J17, Pneumonia in diseases classified elsewhere; J18, Pneumonia, organism unspecified; J20, Acute bronchitis; J21, Acute bronchiolitis; J22, Unspecified acute lower respiratory infection; J340, Abscess, furuncle and carbuncle of nose; J36, Peritonsillar abscess; J383, Abscess of vocal cord(s); J387, Abscess of larynx; J390, Retropharyngeal and parapharyngeal abscess; J391, Other abscess of pharynx; J440, Chronic obstructive pulmonary disease with acute lower respiratory infection; J441, Chronic obstructive pulmonary disease with acute exacerbation, unspecified; J690, Pneumonitis due to food and vomit; J85, Abscess of lung and mediastinum; J86, Pyothorax; J90, Pleurisy with effusion; J91, Pleural effusion in conditions classified elsewhere; J950, Sepsis of tracheostomy stoma; J985, Mediastinitis; J986, Diaphragmatitis; K044, Acute apical periodontitis of pulpal origin; K046, Periapical abscess with sinus; K047, Periapical abscess without sinus; K050, Acute gingivitis; K052, Acute periodontitis; K102, Inflammatory conditions of jaws; K103, Alveolitis of jaws; K112, Sialoadenitis; K113, Abscess of salivary gland; K122, Cellulitis and abscess of mouth; K140, Abscess of tongue; K221, Fungal ulcer of oesophagus; K223, Perforation of oesophagus; K251, Acute gastric ulcer with perforation; K252, Acute gastric ulcer with both hemorrhage and perforation; K255, Chronic or unspecified gastric ulcer with perforation; K256, Chronic or unspecified gastric ulcer with both hemorrhage and perforation; K261, Acute duodenal ulcer with perforation; K262, Acute duodenal ulcer with both hemorrhage and perforation; K265, Chronic or unspecified duodenal ulcer with perforation; K266, Chronic or unspecified duodenal ulcer with both hemorrhage and perforation; K271, Acute peptic ulcer, site unspecified with perforation; K272, Acute peptic ulcer, site unspecified with both hemorrhage and perforation; K275, Chronic or unspecified peptic ulcer, site unspecified with perforation; K276, Chronic or unspecified peptic ulcer, site unspecified with both hemorrhage and perforation; K281, Acute gastrojejunal ulcer with perforation; K282, Acute gastrojejunal ulcer with both hemorrhage and perforation; K285, Chronic or unspecified gastrojejunal ulcer with perforation; K286, Chronic or unspecified gastrojejunal ulcer with both hemorrhage and perforation; K35, Acute appendicitis; K36, Other appendicitis; K37, Unspecified appendicitis; K383, Fistula of appendix; K388, Intussusception of appendix; K401, Bilateral inguinal hernia, with gangrene; K404, Unilateral or unspecified inguinal hernia, with gangrene; K411, Bilateral femoral hernia, with gangrene; K414, Unilateral or unspecified femoral hernia, with gangrene; K421, Umbilical hernia with gangrene; K431, Ventral hernia with gangrene; K441, Diaphragmatic hernia with gangrene; K451, Other specified abdominal hernia with gangrene; K461, Unspecified abdominal hernia with gangrene; K550, Acute vascular disorders of intestine; K551, Chronic vascular disorders of intestine; K559, Vascular disorders of intestine, unspecified; K561, intussusception; K562, Volvulus; K563, Gallstone ileus; K564, Other impaction of intestine; K565, Intestine adhesions (bands) with obstruction; K566, Other and unspecified intestinal obstruction; K567, Ileus, unspecified; K57, Diverticulitis of intestine (small, large); K60, Fissure and fistula of anal and rectal regions; K61, Abscess of anal and rectal regions; K630, Abscess of intestine; K631, Perforation of intestine (nontraumatic); K632, Fistula of intestine; K65, Peritonitis; K67, Disorders of peritoneum in infectious diseases classified elsewhere; K75, Other inflammatory liver diseases; K770, Liver disorders in infectious and parasitic diseases classified elsewhere; K800, Calculus of gallbladder with acute cholecystitis; K801, Calculus of gallbladder with other cholecystitis; K803, Calculus of bile duct with cholangitis; K804, Calculus of bile duct with cholecystitis; K81, Cholecystitis; K820, Obstruction of gallbladder; K822, Perforation of gallbladder; K823, Fistula of gallbladder; K830, Cholangitis; K831, Obstruction of bile duct; K832, Perforation of bile duct; K833, Fistula of bile duct; K85, Acute pancreatitis; K868, Pancreatic necrosis NOS; K931, Megacolon in Chagas's disease (B57.3+); L00, Staphylococcal scalded skin syndrome; L01, Impetigo; L02, Cutaneous abscess, furuncle and carbuncle; L03, Cellulitis; L04, Acute lymphadenitis; L050, Pilonidal cyst with abscess; L08, Other local infections of skin and subcutaneous tissue; M00, Pyogenic arthritis; M01, Direct infections of joint in infectious and parasitic diseases classified elsewhere; M462, Osteomyelitis of vertebra; M463, Infection of intervertebral disc (pyogenic); M464, Discitis, unspecified; M465, Other infective spondylopathies; M491, *Brucella* spondylitis (A23.-+); M492, Enterobacterial spondylitis (A01-A04+); M493, Spondylopathy in other infectious and parasitic diseases classified elsewhere; M600, Infective myositis; M630, Myositis in bacterial diseases classified elsewhere; M632, Myositis in other infectious diseases classified elsewhere; M650, Abscess of tendon sheath; M651, Other infective (teno) synovitis; M680, Synovitis and tenosynovitis in bacterial diseases classified elsewhere; M710, Abscess of bursa; M711, Other infective bursitis; M715, Other bursitis NEC; M719, Bursitis NOS; M726, Necrotising fasciitis; M728, Abscess of fascia; M730, Gonococcal bursitis (A54.4+); M86, Osteomyelitis; M901, Periostitis in other infectious diseases classified elsewhere; M902, Osteopathy in other infectious diseases classified elsewhere; N10, Acute pyelonephritis; N12, Pyelonephritis NOS; N136, Pyonephrosis; N151, Renal and perinephric abscess; N159, Infection of kidney, NOS; N20, Calculous pyelonephritis; N390, Urinary tract infection, site not specified; N41, Inflammatory diseases of prostate; N431, Infected hydrocele; N45, Orchitis and epididymitis; N482, Other inflammatory disorders of penis; N49, Inflammatory disorders of male genital organs, NEC; N510, Gonococcal prostatitis (A54.2+); N511, Chlamydial epididymitis (A56.1+); N512, Balanitis in diseases classified elsewhere; N61, Inflammatory disorders of breast; N70, Salpingitis and oophoritis; N71, Inflammatory disease of uterus, except cervix; N72, Inflammatory

Continued

Types of organ dysfunction	Codes	Conditions
	Extra #1	Combination of oxygen delivery, arterial blood gas analysis and lower respiratory infection (A15, A16, A202, A212, A221, A241, A310, A37, A420, A430, A481, A70, B371, B380, B381, B382, B390, B391, B392, B400, B401, B402, B410, B420, B440, B441, B450, B460, J13, J14, J15, J16, J17, J18, J20, J21, J22, J40, J440, J441, J690, J85, J86, J90, J91, R091)
	Extra #2	Mechanical ventilation (M5830, M585) without general anesthesia (L010, L050, L6, L7)
Neurologic	F05	Delirium, not induced by alcohol and other psychoactive substances
	F06	Other mental disorders due to brain damage and dysfunction and to physical disease
	F09	Organic psychosis NOS
	G931	Anoxic brain damage, NEC
	G934	Encephalopathy, unspecified
	G9380	Metabolic encephalopathy
	R40	Somnolence, stupor and coma
	R400	Somnolence
	R401	Stupor
	R410	Disorientation, unspecified
Hematologic	D65	Disseminated intravascular coagulation (defibrination syndrome)
	D68	Other coagulation defects
	D688	Other specified coagulation defects
	D689	Coagulation defect, unspecified
	D69	Purpura and other hemorrhagic conditions
	D695	Secondary thrombocytopenia
	D696	Thrombocytopenia, unspecified
	R233	Spontaneous ecchymoses
	R791	abnormal coagulation lab
Hepatic	K72	Hepatic failure, NEC
	K762	Central hemorrhagic necrosis of liver
	K763	Infarction of liver
	R17	Unspecified jaundice
Renal	N17	Acute renal failure
	N19	Unspecified renal failure
	N990	Postprocedural renal failure
	R34	Anuria and oliguria
	R944	Abnormal results of kidney function studies
	Z992	Dependence on renal dialysis
	Extra #1	New initiation of hemodialysis / continuous renal replacement therapy (O701, O702, O703, O704, O705) without preexisting dependence on HD (registered kidney disability grade 1)
Sepsis-induced cardiomyopathy	I428	Other cardiomyopathies
	I429	Cardiomyopathy, unspecified
	I430	Cardiomyopathy in infectious and parasitic diseases classified elsewhere
	I5181	Takotsubo syndrome (Stress induced cardiomyopathy)
Metabolic	E872	Acidosis