

Online Appendix: Previous methods used to generate national estimates of incidence and mortality

Angus, et al. *Crit Care Med* 2001; 29:1303-1310.

ICD-9 Infection

001, Cholera
002, Typhoid/paratyphoid fever
003, Other salmonella infection;
004, Shigellosis
005, Other food poisoning;
008, Intestinal infection not otherwise classified;
009, Ill-defined intestinal infection
010, Primary tuberculosis infection
011, Pulmonary tuberculosis;
012, Other respiratory tuberculosis;
013, Central nervous system tuberculosis;
014, Intestinal tuberculosis;
015, Tuberculosis of bone and joint;
016, Genitourinary tuberculosis;
017, Tuberculosis not otherwise classified;
018, Miliary tuberculosis;
020, Plague;
021, Tularemia;
022, Anthrax;
023, Brucellosis;
024, Glanders;
025, Melioidosis;
026, Rat-bite fever;
027, Other bacterial zoonoses;
030, Leprosy;
031, Other mycobacterial disease;
032, Diphtheria;
033, Whooping cough;
034, Streptococcal throat/scarlet fever;
035, Erysipelas;
036, Meningococcal infection;
037, Tetanus;
038, Septicemia;
039, Actinomycotic infections;
040, Other bacterial diseases;
041, Bacterial infection in other diseases not otherwise specified;
090, Congenital syphilis;
091, Early symptomatic syphilis;
092, Early syphilis latent;
093, Cardiovascular syphilis;

ICD-9 Acute Organ Dysfunction

785.5 Shock without trauma
458 Hypotension
96.7 Mechanical ventilation
348.3 Encephalopathy
293 Transient organic psychosis
348.1 Anoxic brain damage
287.4 Secondary thrombocytopenia
287.5 Thrombocytopenia, unspecified
286.9 Other/unspecified coagulation defect
286.6 Defibrination syndrome
570 Acute and subacute necrosis of liver
573.4 Hepatic infarction
584 Acute renal failure

094,Neurosyphilis;
095, Other late symptomatic syphilis;
096, Late syphilis latent;
097, Other and unspecified syphilis;
098,Gonococcal infections;
100, Leptospirosis;
101, Vincent's angina;
102, Yaws;
103, Pinta;
104, Other spirochetal infection;
110, Dermatophytosis;
111, Dermatomycosis not otherwise classified or specified;
112, Candidiasis;
114, Coccidioidomycosis;
115, Histoplasmosis;
116, Blastomycotic infection;
117, Other mycoses;
118, Opportunistic mycoses;
320, Bacterial meningitis;
322, Meningitis, unspecified;
324, Central nervous system abscess;
325, Phlebitis of intracranial sinus;
420, Acute pericarditis;
421, Acute or subacute endocarditis;
451, Thrombophlebitis;
461, Acute sinusitis;
462, Acute pharyngitis;
463, Acute tonsillitis;
464, Acute laryngitis/tracheitis;
465, Acute upper respiratory infection of multiple sites/NOS
481, Pneumococcal pneumonia;
482, Other bacterial pneumonia;
485, Bronchopneumonia with organism not otherwise specified;
486, Pneumonia, organism not otherwise specified;
491.21, Acute exacerbation of obstructive chronic bronchitis;
494, Bronchiectasis;
510, Empyema;
513, Lung/mediastinum abscess;
540, Acute appendicitis;
541, Appendicitis not otherwise specified;
542, Other appendicitis;
562.01, Diverticulitis of small intestine without hemorrhage;
562.03, Diverticulitis of small intestine with hemorrhage;
562.11, Diverticulitis of colon without hemorrhage;
562.13, Diverticulitis of colon with hemorrhage;
566, Anal and rectal abscess;
567, Peritonitis;
569.5, Intestinal abscess;
569.83, Perforation of intestine;

572.0, Abscess of liver;
 572.1, Portal pyemia;
 575.0, Acute cholecystitis;
 590, Kidney infection;
 597, Urethritis/urethral syndrome;
 599.0, Urinary tract infection not otherwise specified;
 601, Prostatic inflammation;
 614, Female pelvic inflammation disease;
 615, Uterine inflammatory disease;
 616, Other female genital inflammation;
 681, Cellulitis, finger/toe;
 682, Other cellulitis or abscess;
 683, Acute lymphadenitis;
 686, Other local skin infection;
 711.0, Pyogenic arthritis;
 730, Osteomyelitis;
 790.7, Bacteremia;
 996.6, Infection or inflammation of device/graft;
 998.5, Postoperative infection;
 999.3, Infectious complication of medical care not otherwise classified.

Wang et al. Crit Care Med 2007;35(8):1928-1936.

ICD-9 Infection

Triage temp < 96.8 F (No ICD-9)
 Triage temp > 100.4 F (No ICD-9)

001 Cholera
 002 Typhoid/paratyphoid fever
 003 Other salmonella infection
 004 Shigellosis
 005 Other food poisoning
 008 Intestinal infections due to *Escherichia coli*
 008.1 Intestinal infections due to Arizona group of paracolon bacillus
 008.2 Intestinal infections due to *Aerobacter aerogenes*
 008.3 Intestinal infections due to *Proteus (mirabilis morgani)*
 008.4 Intestinal infections due to unspecified bacteria
 008.5 Bacterial enteritis, unspecified
 009 Ill-defined intestinal infection
 013 CNS tuberculosis
 018 Miliary tuberculosis
 020 Plague
 021 Tularemia
 022 Anthrax
 023 Brucellosis
 024 Glanders
 025 Melioidosis

ICD-9 End Organ Dysfunction

Triage Blood Pressure < 90 (No ICD-9)

458 Orthostatic hypotension
 458.8 Other specified hypotension
 458.9 Hypotension, unspecified
 785.5 Shock without mention of trauma
 286.6 Defibrination syndrome
 286.9 Other and unspecified coagulation defects
 287.4 Secondary thrombocytopenia
 287.5 Thrombocytopenia, unspecified
 570 Acute and subacute necrosis of liver
 573.4 Hepatic infarction
 293 Transient organic psychosis
 348.1 Anoxic brain damage
 348.3 Encephalopathy
 584 Acute renal failure
 518.8 Respiratory failure
 786.03 Apnea
 799.1 Respiratory Arrest

ICD-9 Sepsis Codes

990.90 SIRS-NOS

026 Rat-bite fever
027 Other bacterial zoonoses
032 Diphtheria
033 Whooping cough
034 Streptococcal throat/scarlet fever
035 Erysipelas
036 Meningococcal infection
037 Tetanus
038 Septicemia
039 Actinomycotic infections
040 Other bacterial diseases
041 Bacterial infection in other diseases not specified
098 Gonococcal infections
100 Leptospirosis
101 Vincent's angina
112 Candidiasis, of mouth
112.4 Candidiasis, of lung
112.5 Candidiasis, disseminated
112.8 Candidiasis, of other specified sites
114 Coccidioidomycosis
115 Histoplasmosis
116 Blastomycotic infection
117 Other mycoses
118 Opportunistic mycoses
320 Bacterial meningitis
321 Cryptococcal meningitis
321.1 Meningitis in other fungal diseases
324 CNS abscess
325 Phlebitis of intracranial sinus
360 Purulent endophthalmitis
376 Acute inflammation of orbit
380.14 Malignant otitis externa
383 Acute mastoiditis
420.99 Acute pericarditis due to other specified organisms
421 Acute or subacute endocarditis
461 Acute sinusitis
462 Acute pharyngitis
463 Acute tonsillitis
464 Acute laryngitis/tracheitis
465 Acute upper respiratory infection of multiple sites/not otherwise specified
475 Peritonsillar abscess
481 Pneumococcal pneumonia
482 Other bacterial pneumonia
485 Bronchopneumonia with organism not otherwise specified
486 Pneumonia, organism not otherwise specified
491.21 Acute exacerbation of obstructive chronic bronchitis
494 Bronchiectasis
510 Empyema

995.92 SIRS- infection with organ dysfunction

513 Abscess of lung and mediastinum
522.5 Periapical abscess without sinus
522.7 Periapical abscess with sinus
526.4 Inflammatory conditions of the jaw
527.3 Abscess of the salivary glands
528.3 Cellulitis and abscess of oral soft tissue
540 Acute appendicitis
541 Appendicitis not otherwise specified
542 Other appendicitis
562.01 Diverticulitis of the small intestine without hemorrhage
562.03 Diverticulitis of the small intestine with hemorrhage
562.11 Diverticulitis of colon without hemorrhage
562.13 Diverticulitis of colon with hemorrhage
566 Abscess of the anal and rectal regions
567 Peritonitis
569.5 Intestinal abscess
569.61 Infection of colostomy or enterostomy
569.83 Perforation of intestine
572 Abscess of liver
572.1 Portal pyemia
575 Acute cholecystitis
590 Kidney infection
599 Urinary tract infection not otherwise specified
601 Prostatic inflammation
604 Orchitis and epididymitis
614 Female pelvic inflammation disease
615 Uterine inflammatory disease
616.3 Abscess of Bartholin's gland
616.4 Other abscess of vulva
634 Spontaneous abortion, complicated by genital tract and pelvic infection
635 Legally induced abortion, complicated by genital tract and pelvic infection
636 Illegally induced abortion, complicated by genital tract and pelvic infection
637 Unspecified abortion, complicated by genital tract and pelvic infection
638 Failed attempted abortion, complicated by genital tract and pelvic infection
639 Complications following abortion and ectopic and molar pregnancies
646.6 Infections of genitourinary tract in pregnancy
658.4 Infection of amniotic cavity
670 Major puerperal infection
675.1 Abscess of breast
681 Cellulitis, finger/toe
682 Other cellulitis or abscess
683 Acute lymphadenitis
685 Pilonidal cyst, with abscess

686 Other local skin infection
711 Pyogenic arthritis
728.86 Necrotizing fasciitis
730 Osteomyelitis
790.7 Bacteremia
958.3 Posttraumatic wound infection, not elsewhere classified
996.6 Infection or inflammation of device/graft
998.5 Postoperative infection
999.3 Infectious complication of medical care not otherwise classified

Martin et al, *NEJM* 2003;348:1546-54.

ICD-9 Infection

038 septicemia
020.0 septicemic
790.7 bacteremia
117.9 disseminated fungal
112.5 disseminated candida
112.81 disseminated fungal endocarditis

ICD-9 CM Organ Dysfunction

518.81 Acute Respiratory Failure
518.82 ARDS
518.85 ARDS after shock or trauma
786.09 Resp Insufficiency
799.1 Respiratory Arrest
96.7 Ventilator Management
458.0 hypotension, postural
785.5 shock
785.51 shock cardiogenic
785.59 shock, circulatory or septic
458.8 hypotension nos
458.9 hypotension arterial
796.3 transient hypotension
584 acute renal failure
580 acute glomerulonephritis
585 renal shutdown
39.95 hemodialysis
570 acute hepatic failure or necrosis
572.2 hepatic encephalopathy
573.3 hepatitis
286.2 DIC
286.6 purpura fulminans
286.9 coagulopathy
287.3-5 thrombocytopenia
276.2 acidosis metabolic or lactic
293 transient organic psychosis
348.1 anoxic brain injury
348.3 encephalopathy
780.01 coma
780.09 altered consciousness
89.14 eeg

Dombrovskiy, *Crit Care Med* 2005;33:2555-2562.

ICD 9 Infection

038.0 streptococcal septicemia
038.1 staphylococcal septicemia
038.2 pneumococcal septicemia
038.3 septicemia due to anaerobes
038.4 septicemia due to other Gram-negative organisms
038.8 other specified septicemias
038.9 unspecified septicemia
003.1 salmonella septicemia
020.2 septicemic plague
022.3 anthrax septicemia
036.2 meningococcal septicemia
036.3 Waterhouse-Friderichsen syndrome
054.5 herpetic septicemia
098.89 gonococemia
112.5 systemic candidiasis

ICD-9 Sepsis

995.91 (SIRS due to infection without organ dysfunction)
995.92 (SIRS due to infection with organ dysfunction)
785.52 (septic shock)

ICD 9 Organ Dysfunction

518.81 respiratory
518.82 respiratory
786.09 respiratory
799.1 respiratory
785.5 cardiovascular
427.5 cardiovascular
458.0 cardiovascular
458.8 cardiovascular
458.9 cardiovascular
796.3 cardiovascular
287.4 coagulation
287.5 coagulation
286.6 coagulation
286.9 coagulation
584 (with all subcodes) renal
570 hepatic
572.2 hepatic
573.4 hepatic
293.0, central nervous system
348.1 central nervous system
348.3 central nervous system
780.01 central nervous system