

Table 2: International Classification of Diseases, Ninth Revision, Clinical Modification codes for organ dysfunction

Respiratory	
518.5	Pulmonary insufficiency following trauma, shock, or surgery
518.81	Acute respiratory failure
518.82	Acute respiratory distress syndrome
518.84	Acute and chronic respiratory failure
518.85	ARDS following trauma, shock, or surgery
786.09	Respiratory abnormality, not otherwise specified
799.1	Respiratory arrest
96.70	Continuous mechanical ventilation-unspecified duration
96.71	Continuous mechanical ventilation <96 hrs
96.72	Continuous mechanical ventilation 96+ hrs
Cardiovascular	
427.5	Cardiac arrest
458.0	Hypotension (458.2, 458.8, 458.9)
785.50	Shock not otherwise specified
785.51	Shock, cardiogenic
785.52	Septic shock
785.59	Shock without trauma
796.3	Low blood pressure, nonspecific
Renal	
580	Acute glomerulonephritis (580.4, 580.0, 580.81, 580.89, 580.9)
584	Acute renal failure (584.5, 584.6, 584.7, 584.8, 584.9)
Hepatic	
570	Acute necrosis of liver
572.2	Hepatic coma
573.3	Hepatitis, unspecified; not due to virus, congestion, infarction
Hematologic	
286.6	Purpura fulminans
286.9	Coagulopathy
287.3	Primary thrombocytopenia
287.4	Secondary thrombocytopenia
287.5	Thrombocytopenia, unspecified
Metabolic	
276.2	Acidosis, metabolic or lactic
Neurologic	
293.0	Acute delirium
293.1	Subacute delirium
293.9	Transient organic mental disorder, not otherwise specified
348.1	Anoxic brain injury
348.3	Encephalopathy-unspecified
348.31	Septic encephalopathy

348.39	Other encephalopathy
780.01	Coma
780.09	Stupor
Other	
995.92	Severe sepsis (sepsis with acute organ dysfunction)

Table 3: Hospitalizations and costs for severe sepsis, 2003 to 2007

	2003	2004	2005	2006	2007	<i>p</i> ^a
	N (SD)	N (SD)	N (SD)	N (SD)	N (SD)	
All hospitalizations	31634852 (531013)	31924643 (526286)	32072881 (601682)	32791342 (610282)	32716306 (578396)	<.001
All sepsis hospitalizations	799155 (19404)	884339 (20199)	955536 (25157)	1045423 (24849)	1115112 (24951)	<.001
Non-severe sepsis hospitalizations	376447 (9634)	378261 (9002)	381705 (10604)	400703 (10668)	396013 (9850)	<.001
Severe sepsis hospitalizations	422708 (10600)	506078 (12330)	573831 (15692)	644720 (15617)	719099 (16606)	<.001
Deaths	156641 (4256)	176464 (4577)	191861 (5126)	203307 (4815)	209073 (5051)	<.001
Total cost (2007 billion U.S. dollars)	15.8 (0.6)	17.5 (0.6)	20.0 (0.6)	21.3 (0.5)	24.6 (0.8)	.001
Mean cost/case (2007 U.S. dollars)						
Geometric mean ^b	20347 (394)	19387 (327)	19484 (333)	19215 (252)	19390 (344)	.015
Arithmetic mean ^b	37380 (875)	34566 (705)	34867 (757)	33004 (462)	34206 (779)	.005
Mean length of stay/case (days)						
Geometric mean ^b	9.9 (0.1)	9.6 (0.1)	9.4 (0.1)	9.3 (0.1)	9.2 (0.1)	<.001
Arithmetic mean ^b	15.7 (0.2)	15.1 (0.2)	14.7 (0.2)	14.5 (0.2)	14.2 (0.2)	<.001

^aTest for linear trend across year; ^bstandard error from Taylor series expansion

Table 4: Cases of severe sepsis per 100,000 population; age 18 years and older, 2003 to 2007^a

	2003 N (SE)	2004 N (SE)	2005 N (SE)	2006 N (SE)	2007 N (SE)	<i>p</i> ^b
Hospitalizations						
Overall	204 (5)	240 (6)	266 (7)	276 (7)	303 (7)	<.001
Male	203 (5)	241 (6)	265 (7)	282 (7)	311 (7)	<.001
Female	205 (5)	238 (6)	268 (8)	272 (7)	295 (7)	<.001
18–64	85 (2)	101 (3)	108 (3)	119 (3)	132 (3)	<.001
65–84	659 (17)	780 (20)	872 (25)	929 (24)	1008 (24)	<.001
85+	1791 (59)	2029 (60)	2363 (91)	2008 (61)	2214 (77)	.09
White	144 (4)	171 (5)	203 (7)	195 (7)	211 (6)	<.001
Black	234 (19)	296 (22)	248 (17)	316 (23)	333 (24)	.003
Hispanic	156 (14)	152 (15)	177 (16)	204 (18)	200 (16)	<.001
Other	156 (15)	176 (17)	196 (15)	211 (19)	257 (21)	<.001
In-hospital mortality						
Overall	76 (2)	84 (2)	90 (2)	87 (2)	88 (2)	.005
Male	75 (2)	84 (2)	88 (2)	88 (2)	90 (2)	<.001
Female	77 (2)	84 (2)	92 (3)	86 (2)	86 (2)	.10
18–64	25 (1)	28 (1)	29 (1)	30 (1)	30 (1)	<.001
65–84	261 (7)	290 (7)	309 (8)	313 (8)	313 (8)	<.001
85+	828 (29)	892 (26)	1001 (39)	806 (25)	812 (29)	.60
White	56 (2)	62 (2)	71 (3)	64 (2)	63 (2)	.23
Black	90 (8)	104 (8)	80 (5)	97 (7)	95 (7)	.91
Hispanic	59 (6)	54 (5)	57 (5)	64 (6)	59 (6)	.28
Other	62 (6)	63 (6)	68 (5)	67 (6)	80 (7)	<.001

^aStandardized to 2000 U.S. Census population; ^b*p* values for slope across year

Table 5: Hospitalizations for severe sepsis by patient characteristics, 2003 to 2007

	2003	2004	2005	2006	2007	<i>p</i> for trend	Change per year (%)
	N (%)	N (%)	N (%)	N (%)	N (%)		
Gender							
Male	209713 (50)	253181 (50)	284952 (50)	322319 (50)	363772 (51)	.006	0.20
Female	212980 (50)	252844 (50)	288855 (50)	322401 (50)	355265 (49)	.006	-
Age							
18–64	157881 (37)	191671 (38)	211045 (37)	241745 (37)	272388 (38)	.46	0.07
65–84	200906 (48)	239778 (47)	271603 (47)	301606 (47)	331846 (46)	.001	-0.34
85+	63921 (15)	74629 (15)	91184 (16)	101368 (16)	114864 (16)	.025	0.22
Race/Ethnicity							
White	214359 (66)	258686 (67)	313766 (71)	327453 (67)	362033 (67)	.59	0.20
Black	54566 (17)	70412 (18)	60339 (14)	81818 (17)	87954 (16)	.49	-0.25
Hispanic	35514 (11)	35473 (9)	42024 (10)	51981 (11)	51603 (10)	.72	-0.13
Other	18915 (6)	21744 (6)	24896 (6)	28848 (6)	35813 (7)	.61	0.19
Organ dysfunctions, number							
1	210454 (50)	247565 (49)	278525 (49)	304584 (47)	317257 (44)	<.001	-1.30
2	121482 (29)	144600 (29)	161648 (28)	182110 (28)	206911 (29)	.85	-0.03
3	61037 (14)	75298 (15)	87348 (15)	100913 (16)	121157 (17)	<.001	0.56
4+	29735 (7)	38615 (8)	46310 (8)	57112 (9)	73774 (10)	<.001	0.77
Organ dysfunctions, type							
Respiratory	224584 (53)	262570 (52)	294303 (51)	328406 (51)	367170 (51)	<.001	-0.51
Cardiovascular	169585 (40)	207230 (41)	239151 (42)	275139 (43)	327025 (45)	<.001	1.24
Renal	168830 (40)	212657 (42)	247372 (43)	293660 (46)	350103 (49)	<.001	2.10
Hepatic	20879 (5)	25884 (5)	30691 (5)	34240 (5)	38808 (5)	.36	0.11
Hematologic	79915 (19)	90489 (18)	99070 (17)	107382 (17)	121116 (17)	<.001	-0.54
Metabolic	61095 (14)	73889 (15)	83957 (15)	100608 (16)	121846 (17)	<.001	0.60
Neurologic	37194 (9)	42674 (8)	48873 (9)	56096 (9)	72674 (10)	.018	0.29
Infection site							
Abdominal	74065 (18)	90777 (18)	104860 (18)	119845 (19)	139843 (19)	<.001	0.45
Blood	400891 (95)	477675 (94)	555509 (97)	628048 (97)	702850 (98)	<.001	0.88
Bone	5228 (1)	6247 (1)	6493 (1)	8057 (1)	10777 (1)	.58	0.05
Central nervous system	4530 (1)	5409 (1)	5408 (1)	6245 (1)	6994 (1)	.76	-0.03
Endocarditis	8181 (2)	9279 (2)	9925 (2)	11191 (2)	11487 (2)	.42	-0.08
Genitourinary	133109 (31)	165059 (33)	192704 (34)	223606 (35)	266686 (37)	<.001	1.33
Respiratory	150297 (36)	175536 (35)	204671 (36)	231839 (36)	270640 (38)	<.001	0.54
Wound/Soft tissue	26144 (6)	31278 (6)	37710 (7)	44391 (7)	52671 (7)	.002	0.30
No known site	1894 (0)	1870 (0)	1752 (0)	1735 (0)	1669 (0)	.58	-0.05
Disposition							
Home	82261 (20)	88668 (18)	103378 (18)	117654 (18)	136770 (19)	.74	0.20
Transfer	17200 (4)	21075 (4)	23573 (4)	27932 (4)	32096 (4)	.47	0.33

Rehabilitation	123732 (29)	162841 (32)	189290 (33)	219261 (34)	253340 (35)	<.001	1.58
Home nursing	37698 (9)	53309 (11)	61464 (11)	72243 (11)	82631 (11)	<.001	0.81
Death	156641 (37)	176464 (35)	191861 (33)	203307 (32)	209073 (29)	<.001	-1.74
Unknown	2317 (1)	3273 (1)	3749 (1)	4040 (1)	4864 (1)	.85	0.27

Figure 1: Cases of sepsis and severe sepsis in the United States from 2003 to 2007.

