

Table 2A.16.2: Trends in Spinal Fusion Procedures, United States 1998-2013

ICD-9-CM	Description	Year	Number of Discharges with Procedure [1]	Rate of Year-to-Year Increase in Patients	Number of Procedures [1]	Rate of Year-to-Year Increase in Procedures	Estimated Population Aged 18 & Over [2]	Rate Per 100,000 Population Aged 18 & Over [2]	Mean Age of Patient	Mean Length of Stay	Mean Hospitalization Charge in 2013 Constant Dollars [3, 4]	Rate of Year-to-Year Increase in Mean Charge	Hospitalization Charges in 2013 Constant Dollars (in Billions) [4]	Rate of Year-to-Year Increase in Total Hospital Charges
81.00-81.08	Spinal Fusion	1998	204,000		220,000		200,345,000	109.57	49.0	4.7	\$ 37,159		\$7.59	
		2000	242,000	18%	263,000	20%	209,128,094	125.93	49.4	4.3	\$ 43,290	17%	\$10.47	38%
		2002	289,000	20%	323,000	23%	215,122,788	150.07	50.2	4.4	\$ 54,387	26%	\$15.73	50%
		2004	307,000	6%	307,000	-5%	220,398,637	139.29	51.8	4.5	\$ 69,061	27%	\$21.19	35%
		2006	354,000	15%	380,000	24%	224,769,279	169.02	53.2	4.2	\$ 88,977	29%	\$31.47	49%
		2011	457,442	29%	521,000	37%	235,205,323	221.51	55.7	3.8	\$ 105,636	19%	\$48.32	54%
		2013	434,530	-5%	445,000	-15%	242,542,967	183.29	56.4	3.9	\$ 112,000	6%	\$48.67	1%
15-Year Rate of Change				113%		137%						201%		542%
81.30-81.393	Spinal Refusion [5]	1998	12,000		12,000		200,345,000	5.90	47.1	4.6	\$ 37,159		\$0.43	
		2000	13,000	12%	13,000	12%	209,128,094	6.36	49.0	5.4	\$ 52,760	42%	\$0.69	59%
		2002	19,000	43%	20,000	53%	215,122,788	9.47	50.0	4.4	\$ 59,567	13%	\$1.12	61%
		2004	19,000	1%	19,000	-7%	220,398,637	8.62	52.7	4.8	\$ 77,693	30%	\$1.47	32%
		2006	20,000	4%	21,000	12%	224,769,279	9.47	53.8	5.0	\$ 110,932	43%	\$2.19	49%
		2011	30,900	57%	34,000	60%	235,205,323	14.46	56.7	4.7	\$ 127,384	15%	\$3.94	80%
		2013	30,040	-3%	31,000	-9%	242,542,967	12.70	57.6	4.4	\$ 129,000	1%	\$3.88	-2%
15-Year Rate of Change				157%		187%						247%		792%
81.00-81.08 + 81.30-81.393	Total	1998	214,000		231,000		200,345,000	115.48	48.9	4.7	\$ 37,159		\$7.96	
		2000	253,000	18%	277,000	20%	209,128,094	132.28	49.4	4.3	\$ 43,290	16%	\$10.93	37%
		2002	304,000	20%	343,000	24%	215,122,788	159.54	50.2	4.3	\$ 54,387	26%	\$16.55	51%
		2004	321,000	5%	327,000	-5%	220,398,637	148.37	51.8	4.5	\$ 69,061	27%	\$22.15	34%
		2006	373,000	16%	401,000	23%	224,769,279	178.49	53.2	4.2	\$ 88,977	29%	\$33.23	50%
		2011	488,300	31%	555,000	38%	235,205,323	235.96	55.8	3.9	\$ 106,671	20%	\$52.09	57%
		2013	438,950	-10%	475,000	-14%	242,542,967	195.99	56.4	3.9	\$ 112,000	5%	\$49.16	-6%
15-Year Rate of Change				105%		140%						201%		518%

[1] Up to 15 procedures per patient are included in years 1998 to 2011; multiple spine procedures per patient can be coded. Discharges with a spinal refusion have been removed from spinal fusions discharges.

[2] Computed from U.S. Census population estimates released July 1st of each year (www.census.gov).

[3] "Charge" refers to hospitalization charges and does not include professional (i.e., physician fees), drugs or non-covered charges. Due to patient discharges with multiple procedures, total charges for combined fusion and refusion patients is the most valid estimate. Mean charges for patients with a spinal refusion procedure were typically higher than for those with spinal fusion only.

[4] Source: United States Department of Labor, Bureau of Labor Statistics. Data Tools: CPI Inflation Calculator. www.bls.gov/data/inflation_calculator.htm Accessed October 17, 2016.

[5] Prior to 2002, spinal refusion procedures were coded to the single code, 81.09. In 2002, this code was dropped and multiple codes implemented. Nearly all spinal refusion patient discharges also underwent spinal fusion procedures; however, discharges with a spinal refusion have been removed from spinal fusions discharges to produce a more accurate number of new fusion procedure discharges.

Source: HCUP Nationwide Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP). 1998-2013. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/nisoverview.jsp