Table 1: Balanced Budget Reconciliation Act (1999) mandates

Potential influences on expenditures for physicians' services mandated to be investigated under the Balanced Budget Reconciliation Act (1999)
Improvements in medical capabilities
Advancements in scientific technology
Demographic changes in the types of Medicare beneficiaries who receive benefits under such programs
Geographic changes in locations where Medicare beneficiaries receive benefits under such programs
Estimates of the rates of use of services among beneficiaries in different age groups
Other factors that might predict use of physicians' services

Source: Balanced Budget Reconciliation Act (1999).

Table 2: Expenditure targets and performance adjustment factors that determined update factors between 1992 and 1998

	Expenditure Targets	Performance Adjustments
1992-1997	Volume Performance Standard: Increase in input prices (Medicare Economic Index) Part B enrollment Changes in laws and regulations Increases in volume and intensity Minus a performance standard factor	Performance Adjustment Factor VPS from two years prior minus actual expenditure change
1998-	Sustainable Growth Rate Increases in input prices Part B enrollment Changes in laws and regulations Growth in per capita GDP	Performance Adjustment Factor The sum of the following: the difference between target prior-year expenditures and prior-year allowed expenditures, and the difference (which may be positive or negative) between the amount of the allowed expenditures for physicians' services from April 1, 1996 through the end of the prior year, and the amount of the actual expenditures for such services during that period (*Federal Register*, November 1, 2001 Volume 66, Number 212).

Source:
Federal Register September 4, 1990 Volume 55, No. FR 36178.
Final Rule, *Federal Register* Vol.56, No. 227, Monday, November 25, 1991.
Final Notice, *Federal Register*, Vol. 57, No. 228. Wednesday, November 25, 1992.
Final Notice with Comment Period, *Federal Register*, Vol. 58, No. 230, Thursday, December 2, 1993.
Final Notice, *Federal Register*, Vol. 59, No. 235, Thursday, December 8, 1994.
Final Notice, *Federal Register*, Vol. 60, No. 236, Friday, December 8, 1995.
Final Notice, *Federal Register*, Vol. 61, No. 227, Friday, November 22, 1996.
Final Notice, *Federal Register*, Vol. 62, No. 211, Friday, October 31, 1997.
Notice with Comment Period, *Federal Register*, Vol. 63. No. 211, Monday, November 2, 1998.

Table 3: Medicare volume performance standard and sustainable growth rate, performance adjustments and updates 1992-1998

Fee schedule/ conversion factor update (in percent)			
Calendar Year	**MVPS/SGR Target**	**Performance Adjustment**	**Update**
1992 Weighted average	10%	-0.9%	1.9%
Surgical	6.5%		
Primary care	11.2%		
1993 Weighted average	10%		1.4%
Surgical	8.4%	0.4%	3.1%
Nonsurgical	10.8%	-1.9%	0.8%
1994 Weighted average	9.4%		7%
Surgical	9.1%	11.3%	10%
Primary care	10.5%	5.6%	7.9%
Other nonsurgical	9.2%	5.6%	5.3%
1995 Weighted average	7.5%		7.7%
Surgical	9.2%	12.8%	12.2%
Primary care	13.8%	5.8%	7.9%
Other nonsurgical	4.4%	5.8%	5.2%
1996 Weighted average	1.8%		0.8%
Surgical	-0.5%	1.8%	3.8%
Primary care	9.3%	-4.3%	-2.3%
Other nonsurgical	0.6%	-1.6%	0.4%
1997 Weighted average	-0.3%		0.6%
Surgical	-3.7%	-0.1%	1.9%
Primary care	4.5%	0.5%	2.5%
Other nonsurgical	-0.5%	-2.8%	-0.8%
1998	1.5%	-0.3%	2.3%

Note: Between 1993 and 1997 there was no overall average payment category. We have provided the average of the payment categories, weighted by the dollar amount of claims in each group, in order to facilitate comparisons of the targets, adjustments, and updates over time. (*Federal Register*, Vol. 61, No. 227, November 22, 1996).

Source:
Federal Register September 4, 1990 Volume 55, No. FR 36178.
Final Rule, *Federal Register* Vol.56, No. 227, Monday, November 25, 1991.
Final Notice, *Federal Register*, Vol. 57, No. 228. Wednesday, November 25, 1992.
Final Notice with Comment Period, *Federal Register*, Vol. 58, No. 230, Thursday, December 2, 1993.
Final Notice, *Federal Register*, Vol. 59, No. 235, Thursday, December 8, 1994.
Final Notice, *Federal Register*, Vol. 60, No. 236, Friday, December 8, 1995.
Final Notice, *Federal Register*, Vol. 61, No. 227, Friday, November 22, 1996.
Final Notice, *Federal Register*, Vol. 62, No. 211, Friday, October 31, 1997.
Notice with Comment Period, *Federal Register*, Vol. 63. No. 211, Monday, November 2, 1998.

Table 4: Services defined in Medicare Part B as physicians' services (1993-1998)

Service Type	Payment Method	Update Method
Physicians' services (includes Doctors of Osteopathy, Optometry, Dentistry, and Medicine)	Resource Based Relative Value Scale (RBRVS).	Sustainable Growth Rate System (SGR) Fee Schedule update
Services and supplies furnished incident to physicians' services	Most included in the practice expense component of RBRVS. In other cases charges are determined by the carrier, relative to average wholesale price.	Practice Expenses – SGR Increase in Average Wholesale Price
Outpatient physical therapy and speech therapy, and outpatient occupational therapy services	Fee schedule, but some services are paid at a percentage of RBRVS.	SGR Fee Schedule update
Antigens prepared by or under the direct supervision of a physician	Antigens were paid under the physician payment schedule after Jan. 1 1995.	Consumers' Price Index (Urban Consumers) (CPI-U)
Drugs and biologicals	Coverage limited. For covered items, before January 1998 drugs were paid using a mix of methods (cost, prospective payment basis, or they were based on the lower of the billed charge or the average wholesale price). (American Medical Association, 2001:7). After January 1 1998, drugs and biologicals were paid according to the actual charge, or 95% of the AWP, whichever was lower.	Increase in Average Wholesale Prices
Services of physician assistants, certified registered nurse anesthetists, certified nurse midwives, clinical psychologists, clinical social workers, nurse practitioners, and clinical nurse specialists	RBRVS used, but reimbursement rates vary. Some professionals such as physician assistants receive a discounted percentage of the total RBRVS charge.	SGR Fee Schedule update

Table 4: Services defined in Medicare Part B as physicians' services (1993-1998) (continued)

Service Type	Payment Method	Update Method
Clinical laboratory tests	Reasonable and prevailing charges subject to national limits. The clinical lab fee schedule is set using national median submitted charges. The amount paid is the lesser of the actual charge, the local fee, or the national limitation amount. Before 1998, payment schedules were set at 60% of the prevailing charge level in each area. After 1998, the national limit became 74% of the median of the local fees for tests.	CPI-U (frozen from 1995-2002)
X-ray, radium, and radioactive isotope therapy	Reasonable and prevailing charges.	CPI-U
Surgical dressings, splints, casts, and other devices used for reduction of fractures and dislocations	Reasonable and prevailing charges.	Increase in charges

Source:
Federal Register September 4, 1990 Volume 55, No. FR 36178
Final Rule, *Federal Register* Vol. 56, No. 227, Monday, November 25, 1991.
Final Notice, *Federal Register*, Vol. 57, No. 228. Wednesday, November 25, 1992.
Final Notice with Comment Period, *Federal Register*, Vol. 58, No. 230, Thursday, December 2, 1993.
Final Notice, *Federal Register*, Vol. 59, No. 235, Thursday, December 8, 1994.
Final Notice, *Federal Register*, Vol. 60, No. 236, Friday, December 8, 1995.
Final Notice, *Federal Register*, Vol. 61, No. 227, Friday, November 22, 1996.
Final Notice, *Federal Register*, Vol. 62, No. 211, Friday, October 31, 1997.
Notice with Comment Period, *Federal Register*, Vol. 63. No. 211, Monday, November 2, 1998.
Program Memorandum AB-02-163, November 8, 2002.

and service definitions. However, there are differences between Medicare and private health insurance programs in terms of the health and demographic characteristics of the population covered and the range and level of benefits provided, among other factors.

These increases in Medicare expenditures may be explained by a number of factors, including the types of benefits provided, the mix and intensity of services utilized by Medicare beneficiaries, and changes in the enrolled population. The next chapter of the report assesses the direction of these trends by examining data on the utilization and expenditures of Medicare beneficiaries.

Table 5: Medicare volume performance standard, 1990-1997, and sustainable growth rate 1998[1]

	Medicare Volume Performance Standard 1990-1997								Sustainable Growth Rate 1998[1]
	1990	1991	1992	1993	1994	1995	1996	1997	
All/weighted average	9.10%	7.30%	10.00%	10.00%	9.40%	7.50%	1.80%	-0.30%	1.50%
Surgical services	….	3.30%	6.50%	8.40%	9.10%	9.20%	-0.5%	-3.70%	….
Primary care services	….	….	….	….	10.50%	13.80%	9.30%	4.50%	….
Nonsurgical	….	8.60%	11.20%	10.80%	9.20%	4.40%	0.6%	-0.50%	….

[1] The new and updated code effect for 1996 is -0.6. This is because while the median RVU use in 1996 was higher than the median use based on the 1993 schedule by 0.4 RVUs (due to the addition of new codes and the updating of existing ones), the mean value is lower. This is likely due to devaluing over the period 1994-1996 of the practice expense RVUs for certain services, largely provided in inpatient settings, that were thought to be overvalued.

Note: The Medicare Volume Performance Standard and the Sustainable Growth rates are shown in this table. The rates are expenditure target growth rates for Medicare. The targets are established prospectively and then performance (how the actual growth rate compared to the target for that year) is retrospectively assessed. The performance adjustment factor is then used to reduce or increase the physician fee schedule update relative to the Medicare Economic Index. The physician fee schedule update is used to update the conversion factor.

Sources:
Centers for Medicare & Medicaid Services Office of the Actuary (2002), *Estimated Sustainable Growth Rate and Final Conversion Factor, for Medicare Payments to Physicians in 2002*. February 4.
http://www.hcfa.gov/pubforms/actuary/SGR/sgr2002f.htm.
Final Rule, *Federal Register*, Vol. 56, No. 227, Monday, November 25, 1991.
Final Notice, *Federal Register*, Vol. 57, No. 228. Wednesday, November 25, 1992.
Final Notice with Comment Period, *Federal Register*, Vol. 58, No. 230, Thursday, December 2, 1993.
Final Notice, *Federal Register*, Vol. 59, No. 235, Thursday, December 8, 1994.
Final Notice, *Federal Register*, Vol. 60, No. 236, Friday, December 8, 1995.
Final Notice, *Federal Register*, Vol. 61, No. 227, Friday, November 22, 1996.
Final Notice, *Federal Register*, Vol. 62, No. 211, Friday, October 31, 1997.

Table 6: Physician fee schedule updates and conversion factors by service type, 1993-1998

	1993	$CF	1994	$CF	1995	$CF	1996	$CF	1997	$CF	1998	$CF
1998 Single conversion factor											0.60%	$36.69
All services	1.40%		7.00%		7.50%		0.80%		0.60%			
Surgical	3.10%	$32.00	10%	$35.20	12.20%	$39.50	3.80%	$40.80	1.90%	$41.00		
Primary care[1]			7.90%	$33.70	7.90%	$36.40	-2.30%	$35.40	2.50%	$35.80		
Nonsurgical	0.80%	$31.30	5.30%	$32.90	5.20%	$34.60	0.40%	$34.60	-0.80%	$33.90		

$CF = Dollar Conversion Factor.

[1] The primary care conversion factor commenced in 1993. In 1998 the separate conversion factors were replaced with a single conversion factor. Between 1993 and 1997 “all services” is a weighted mean of all services. This was not an update category between 1993 and 1997.

Sources:
Final Notice, *Federal Register*, Vol. 57, No. 228. Wednesday, November 25, 1992.
Final Notice with Comment Period, *Federal Register*, Vol. 58, No. 230, Thursday, December 2, 1993.
Final Notice, *Federal Register*, Vol. 59, No. 235, Thursday, December 8, 1994.
Final Notice, *Federal Register*, Vol. 60, No. 236, Friday, December 8, 1995.
Final Notice, *Federal Register*, Vol. 61, No. 227, Friday, November 22, 1996.
Final Notice, *Federal Register*, Vol. 62, No. 211, Friday, October 31, 1997.

Table 7: Average annual percentage change in all conversion factors

	1993-1998[1] Cumulative Increase	1993-1997 Annualized Growth Rate	1993-1998 Annualized Growth Rate
Surgical	14.7%	6.4%	2.8%
Primary care, 1994-1998	17.3%	3.4%	3.2%
Nonsurgical	17.3%	2.0%	3.2%

[1] In 1993 there was no separate primary care conversion factor. The conversion factor used to calculate increases is the nonsurgical rate.

Source: Calculated from data reported in the *Federal Register*:
Final Notice, *Federal Register*, Vol. 57, No. 228. Wednesday, November 25, 1992.
Final Notice with Comment Period, *Federal Register*, Vol. 58, No. 230, Thursday, December 2, 1993.
Final Notice, *Federal Register*, Vol. 59, No. 235, Thursday, December 8, 1994.
Final Notice, *Federal Register*, Vol. 60, No. 236, Friday, December 8, 1995.
Final Notice, *Federal Register*, Vol. 61, No. 227, Friday, November 22, 1996.
Final Notice, *Federal Register*, Vol. 62, No. 211, Friday, October 31, 1997.

Table 8: Average annual growth in per enrollee Medicare and private health insurance expenditure for all services

	1969-1998	1985-1991	1991-1993	1993-1997	1997-1998
Medicare	5.3%	3.3%	6.2%	5.5%	-.1%
Private insurance	6.5%	8.1%	5.4%	1.5%	5.9%

Source: *35-Year Anniversary Chart Book.* Health Care Financing Administration, 2000.

Note: All figures inflation-adjusted using a GDP deflator (**http://w3.access.gpo.gov/usbudget/fy2001/hist.html** Table 10)

Table 9: Year-to-year percentage increase in health expenditure (all payers)

	1990	1993	1994	1995	1996	1997	1998	Average Annualized Percentage Growth, 1993-1998
National health expenditures	7.9	6.0	3.2	3.3	3.3	3.7	3.5	3.8
All personal health expenditures[1]	8.9	7.9	2.5	9.2	6.3	6.4	6.2	6.2
Hospital care	6.3	5.5	1.6	1.3	1.7	1.6	1.3	2.0
Physician and clinical	7.3	5.9	2.9	3.9	3.4	3.4	3.2	3.7
Other professional services	7.4	6.0	2.3	2.7	2.1	3.4	4.2	3.4

[1] "Personal health expenditures" are a subset of national health expenditures. Personal health expenditures include hospital, physician and clinical, other professional services, and other goods and services such as drugs and nursing care.

Source: *Health Care Financing Review*, Summer 2001 Volume 22 (4):102.

Note: All figures inflation-adjusted using a GDP deflator (**http://w3.access.gpo.gov/usbudget/fy2001/hist.html** Table 10)

Table 10: Sources of payments for physician and clinical services, selected calendar years, 1970-1999

Percentage of Total Expenditures								
Year	**Medicare[1] (%)**	**Medicaid[1] (%)**	**Out-of-pocket Payments (%)**	**Private Health Insurance (%)**	**Other Private Funds (%)**	**Federal (%)**	**State and Local (%)**	**Total columns (3) – (7) (%)**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1970	12	5	46	30	2	16	6	100
1980	17	5	30	35	4	24	7	100
1990	19	5	19	43	7	25	6	100
1991	18	5	18	45	7	24	6	100
1992	17	6	16	46	7	24	7	100
1993	17	6	15	48	7	24	6	100
1994	18	7	13	48	8	25	6	100
1995	19	7	12	49	8	26	6	100
1996	19	7	12	49	8	26	6	100
1997	20	7	12	48	8	26	6	100
1998	20	7	12	48	8	27	5	100
1999	20	7	11	48	9	27	5	100

[1] Medicare and Medicaid are subsets of the Federal and State payments, but are given as percentages of total national expenditures on physician and clinical services.

Source: National Health Accounts, Health Care Financing Administration: http://www.hcfa.gov/stats/nheoact/tables/t6.htm#d.

Table 11: Sources of payments for other health professional services, selected calendar years, 1970-1999

Percentage of total								
Year	**Medicare[1] (%)**	**Medicaid[1] (%)**	**Out-of-pocket Payments (%)**	**Private Health Insurance (%)**	**Other Private Funds (%)**	**Federal (%)**	**State and Local (%)**	**Total columns (3) – (7) (%)**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1970	5	5	44	6	5	32	14	100
1980	8	5	46	23	8	13	10	100
1990	10	2	31	35	9	12	13	100
1991	11	3	29	34	9	14	13	100
1992	12	3	29	35	9	15	12	100
1993	12	3	28	36	9	15	11	100
1994	13	3	27	36	9	16	11	100
1995	13	4	27	38	9	16	10	100
1996	13	4	27	39	9	16	10	100
1997	12	4	28	39	9	15	9	100
1998	12	4	30	39	9	14	9	100
1999	11	4	30	39	8	14	9	100

[1] Medicare and Medicaid are subsets of the Federal and State payments, but are given as percentages of total national expenditures on physician and clinical services.

Source: National Health Accounts, Health Care Financing Administration: http://www.hcfa.gov/stats/nheoact/tables/t6.htm#d.

Table 12: Total and per person private insurance and out-of-pocket expenditures, 1990-1999, in 1990 constant dollars

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Growth 1990-99	Average Annual Growth
Population (in millions)	254	257	260	263	265	268	270	273	275	278	9%	1%
Physician and clinical -- Private health insurance (in millions)	$67,698	$75,709	$82,997	$88,514	$91,472	$94,392	$95,948	$98,687	$102,158	$106,448	57%	5%
Physician and clinical -- Out-of- pocket (in millions)	$30,401	$29,885	$28,928	$27,348	$25,137	$23,137	$23,299	$24,404	$25,086	$25,388	-16%	-2%
Other professional services – Private insurance (in millions)	$6,280	$6,466	$7,316	$8,094	$8,370	$9,446	$10,313	$11,000	$11,593	$12,342	97%	8%
Other professional services -- Out-of-pocket (in millions)	$5,699	$5,591	$6,033	$6,372	$6,296	$6,795	$7,100	$8,011	$8,943	$9,416	65%	6%
Dental – Private insurance (in millions)	$15,178	$15,565	$17,038	$17,443	$18,382	$19,563	$20,411	$21,049	$21,851	$22,916	51%	5%
Dental – Out-of-pocket (in millions)	$15,364	$15,403	$16,485	$16,509	$17,019	$17,720	$18,078	$19,526	$20,557	$21,224	38%	4%
Total national expenditure, (in millions)	$140,434	$148,781	$159,351	$165,214	$168,039	$172,896	$177,481	$184,200	$191,482	$199,427	42%	4%
Total expenditure, per person	$411	$441	$479	$500	$516	$533	$545	$556	$573	$592	44%	4%

Source: Centers for Medicare & Medicaid Services (2001) *National Health Accounts Data* (2001 edition). [Computer File] http://www.hcfa.gov/stats/nhe-oact/.

Note: All figures inflation-adjusted using a GDP deflator (http://w3.access.gpo.gov/usbudget/fy2001/hist.html, Table 10)

Table 13: Total Medicaid expenditure on physician, clinical, and other professional services, 1990-1999, in 1990 constant dollars

National Health Expenditure Estimates, Millions of Dollars	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Growth 1990-99	Average Annual Growth
Medicaid physician and clinical services expenditures	$7,025	$8,784	$10,504	$11,652	$12,301	$12,997	$13,451	$13,780	$13,999	$14,643	108.4%	8.5%
Medicaid other professional services	$445	$529	$560	$767	$772	$893	$1,048	$1,116	$1,088	$1,144	157.2%	11.1%
Dental	$756	$911	$1,127	$1,540	$1,566	$1,590	$1,626	$1,681	$1,720	$1,825	141.5%	10.3%
Total Medicaid[1]	$7,470	$9,313	$11,064	$12,419	$13,073	$13,890	$14,499	$14,896	$15,087	$15,787	111.3%	8.7%

[1] Excludes Children's health insurance expansion programs.

Source: Centers for Medicare & Medicaid Services (2001) *National Health Accounts Data* (2001 edition). [Computer File] http://www.hcfa.gov/stats/nhe-oact/.

Note: All figures inflation-adjusted using a GDP deflator (**http://w3.access.gpo.gov/usbudget/fy2001/hist.html**, Table 10)

Table 14: Medicaid expenditure on physicians' services per recipient, 1990-1998, in 1990 constant dollars

	1990	1991	1992	1993	1994	1995	1996	1997	1998	Percentage Growth 1990-98	Average Annual Growth Rate (%)
Medicaid recipients (in millions)	25.255	28.28	30.926	33.432	35.053	36.282	35.118	34.872	40.649	61.0%	6.1%
Physician and clinical services (in dollars)	$278	$311	$339	$348	$351	$358	$383	$395	$345	23.9%	2.7%
Other professional services (in dollars)	$18	$18	$18	$23	$22	$25	$30	$32	$27	49.0%	5.1%
Dental (in dollars)	$30	$32	$37	$46	$45	$44	$47	$48	$42	39.7%	4.3%
Total (in dollars) per enrollee[1]	$326	$362	$394	$417	$418	$427	$459	$475	$413	26.8%	3.0%

[1] Excludes children's health insurance expansion programs.

Source: Centers for Medicare & Medicaid Services (2001) *National Health Accounts Data* (2001 edition). [Computer File] http://www.hcfa.gov/stats/nhe-oact/.

Note: All figures inflation-adjusted using a GDP deflator (**http://w3.access.gpo.gov/usbudget/fy2001/hist.html** ,Table 10)

Table 15. Average annual Medicare expenditure growth rates by provider sector: before and after the Balanced Budget Act

Percent Average Annual Expenditure Growth Rate per Medicare Fee-for-Service Beneficiary	1992–1997[1]	1997–1999[1]
Inpatient hospital	5.3	-1.8
Home health (combined Parts A and B)	21.4	-28.2
Skilled nursing facility	30.4	-0.9
Physician services	4.3	2.4
Outpatient hospital	6.2	-6.4
Medicare+Choice (per M+C beneficiary)	7.4	5.2
Total Medicare (per beneficiary)	7.5	-2.0

[1] Years are fiscal years.

Source: Office of the Actuary, HCFA. Reproduced from MedPAC. *Medicare Payment Policy: Report to Congress*, March 2000.

Note: These figures are not inflation-adjusted.

Table 16: Total Medicare expenditure on physician services, 1990-1998, in 1990 constant dollars

National Health Accounts[1] (in millions of dollars)	1990	1991	1992	1993	1994	1995	1996	1997	1998	Growth 1990-98	Average Annual Growth 1990-98
Physician and clinical services	$30,153	$30,646	$31,137	$31,950	$34,159	$36,655	$38,120	$40,229	$43,009	42.6%	4.5%
Other professional services	$1,755	$2,181	$2,467	$2,715	$2,966	$3,257	$3,376	$3,392	$3,459	97.1%	8.9%
Dental services	$2	$2	$5	$17	$22	$33	$47	$62	$76	3713.9%	57.6%
Total Medicare	$31,910	$32,829	$33,608	$34,681	$37,147	$39,945	$41,544	$43,684	$46,545	45.9%	4.8%
Medicare benefits paid (in millions of dollars)										**Change**	**Average Annual Increase**
Physician and suppliers	$29,609	$31,163	$30,593	$31,797	$33,191	$35,620	$35,605	$36,003	$37,026	25.0%	2.8%
Physician fee schedule				$24,060	$25,802	$27,485	$26,730	$26,618	$26,948	12.0%	2.3%

[1] National Health Accounts data, current dollars.

* Change 1993-1998.

Source: Medicare Trustees Report, 2002 and the Health Care Financing Review *Statistical Supplement* (1999 and 2000).

Note: All figures inflation-adjusted using a GDP deflator (**http://w3.access.gpo.gov/usbudget/fy2001/hist.html**, Table 10)

Table 17: Annual Medicare expenditures per enrollee, 1990-1999, in 1990 constant dollars

Enrollment	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Cumulative Growth 1990-1998	Average Annual Increase
non-ESRD enrollment				31.93	32.13	32.03	31.58	30.88	30.19			
Fee for service enrollees only	31.25	31.68	32.12	32.35	32.08	31.57	30.93	30.41	30.43	30.19	-2.6	-0.3
All Part B enrollees (in millions)	32.63	33.24	33.93	34.61	35.17	35.69	36.14	36.46	36.78	37.04	12.7	1.5
National Health Accounts (in millions of dollars)												
Physician and clinical services	$924	$922	$918	$923	$971	$1,027	$1,055	$1,104	$1,169	$1,221	26.5%	3.0%
Other professional services	$54	$66	$73	$78	$84	$92	$93	$93	$94	$113	73.9%	7.2%
Dentists[1]	$0	$0	$0	$1	$1	$1	$2	$2	$2	$2		
Total	$978	$988	$991	$1,002	$1,056	$1,119	$1,149	$1,198	$1,266	$1,316	29.4%	3.3%
Medicare benefits paid (in millions of dollars)											Change	Average annual increase
Physicians and suppliers	$947	$984	$952	$983	$1,034	$1,128	$1,151	$1,184	$1,217	….	28.5%	3.4%
Physician fee schedule				$754	$803	$858	$846	$862	$893	….	18.4%	3.2%

[1] Actual per person dental expenditures for Medicare were not zero between 1990 and 1992 but were less than one dollar for every enrollee.

Source: Centers for Medicare & Medicaid Services (2001), *National Health Accounts Data* (2001 edition). [Computer File] http://www.hcfa.gov/stats/nhe-oact/. Medicare benefits paid data from the *Statistical Abstract of the United States*, 2000, and the Health Care Financing Review *Statistical Supplement* (1999).

Note: Percentage changes are 1990-1997 for physician and suppliers, and 1995-1998 for physician fee schedule expenditures.

All figures inflation-adjusted using a GDP deflator (**http://w3.access.gpo.gov/usbudget/fy2001/hist.html** ,Table 10)

Table 18. Projected percentage increase in expenditures for physicians' services resulting from changes in law or regulations

Legislative Factors	1994	1995	1996	1997	1998	Cumulative Change
All services / weighted average	2%	3.5%	-0.5%	-0.7%	0.6%	4.9%
Surgical	1.4%	5.3%	-0.6%	-2.1%		
Primary care	3.2%	9.5%	5.7%	3.4%		
Nonsurgical	1.9%	-2.7%	-2.4%	-1.5%		

Source: *Federal Register* Notices.

Table 19. RVU use by year and service categories, 1993 & 1998

Type of Beneficiary	Number of Observations	1993 RVUs						Number of Observations	1998 Based on 1993						1998 Actual					
		Total RVUs		Outpatient		Inpatient			Total RVUs		Outpatient		Inpatient		Total RVUs		Outpatient		Inpatient	
		mean	median	mean	median	mean	median		mean	median	mean	median	mean	median	mean	median	mean	median	mean	median
All	9627	38.1 (.80)	14.1	23.6 (.50)	11.7	14.0 (.59)	0.0	8,986	44.5 (1.83)	16.6	30.8 (1.61)	14.0	13.1 (.54)	0.0	49.9 (1.68)	20.6	34.2 (1.37)	17.2	14.9 (.62)	0.0
Beneficiaries with conditions	8787	40.6 (.89)	15.6	25.0 (.54)	13.1	15.1 (.67)	0.0	8,277	46.9 (1.99)	18.5	32.4 (1.76)	15.2	13.8 (.58)	0.0	52.5 (1.82)	22.8	36.0 (1.50)	18.6	15.7 (.67)	0.0
Beneficiaries without conditions	840	14.3 (1.14)	2.6	10.4 (.69)	2.6	3.8 (.67)	0.0	709	18.9 (1.84)	3.7	13.2 (1.32)	3.4	5.5 (1.26)	0.0	21.5 (1.91)	4.6	14.9 (1.24)	4.2	6.3 (1.41)	0.0

Note: For mean total RVUs and outpatient RVUs, the increases over time are all significant at p=0.05. The change in inpatient RVUs is not significant. For mean total RVUs and outpatient RVUs, the difference between beneficiaries with and without conditions are all significant at p=0.05. Standard errors are in parentheses.

Source: Authors' analyses of Medicare Current Beneficiary Survey.

Table 20: Probabilities of any use of physicians' services

	Number of Observations	Mean
Rate of use in 1993	9,627	0.887
Rate of use in 1998	8,986	0.898
Predicted rate of use in 1998	8,986	0.890

Source: Authors' analyses of Medicare Current Beneficiary Survey.

Table 21: RVU consumption for physician services

	Mean	Median[1]	Number of Observations
1993 use	38.1	14.1	9,627
1998 use	49.9	20.6	8,986
1998 use based on 1993 RVUs	44.5	16.6	8,986
1998 predicted use based on 1993 model	37.0	33.2	8,986

[1] Comparing the median prediction to the median use demonstrates that our model does not mirror the distribution of the actual data. However, as discussed in the text, alternative modeling strategies introduced unacceptable levels of bias.

Source: Authors' analyses of Medicare Current Beneficiary Survey.

Table 22: Decomposing the predicted change in RVU for physician services use

	RVUs	Difference
1993 use	38.1	
1998 predicted	37.0	-1.1
1998 predicted holding 1993 age/gender distribution constant	37.9	-0.2
1998 predicted holding 1993 residence constant	37.9	-0.2
1998 predicted holding 1993 health status and other characteristics constant	37.3	-0.7

Source: Authors' analyses of Medicare Current Beneficiary Survey.

Table 23: RVU for physician services use by year

Year	Predicted RVU Use	RVUs Based on 1993 Schedule	Actual RVU Use	Mean Unexplained Change	Existing Codes	New and Updated Codes	Number of Observations
	(1)	(2)	(3)	(3) minus (1)	(2) minus (1)	(3) minus (2)	
1993	38.1	38.1	38.1	-	-	-	9,627
1994	38.5	41.6	41.5	3.0	3.0	0.0	9,857
1995	38.0	42.6	42.6	4.6	4.6	0.0	8,978
1996	37.5	47.9	47.3	9.8	10.3	-0.6	8,655
1997	37.3	46.6	51.4	14.1	9.3	4.8	8,881
1998	37.0	44.5	49.9	12.9	7.5	5.4	8,986

Note: The new and updated code effect for 1996 is -0.6. This is because, while the median RVU use in 1996 was higher than the median use based on the 1993 schedule by 0.4 RVUs (due to the addition of new codes and the updating of existing ones) the mean value is lower. This is likely due to devaluing over the period 1994-1996 of the practice expense RVUs for certain services, largely provided in inpatient settings, that were thought to be overvalued.

Source: Authors' analyses of Medicare Current Beneficiary Survey.

Table 24: Differences between predicted and actual use of RVUs for physician services in 1998, sorted from highest to lowest unexplained change

	RVUs						Existing Codes		New and Updated Codes		
	Actual 1993 Use	Predicted 1998 Use	1998 Based on 1993 Schedule	1998 Actual Use	Mean Unexplained Change		Effect Size	(% change)	Effect Size	(%)	Number of Observations in 1998
		(1)	(2)	(3)	(3)-(1)		(2)-(1)	[(2)-(1)]/(2)	(3)-(2)	[(3)-(2)]/(2)	
Decedent	92.6	90.9	111.1	125.5	34.6	+	20.3	18.2%	14.4	12.9%	339
Parkinson's	44.9	43.9	57.5	67.7	23.8		13.6	23.7%	10.2	17.8%	139
Osteoporosis	43.5	39.4	55.0	60.8	21.4	+	15.6	28.4%	5.8	10.5%	1,267
Stroke/brain hemorrhage	46.3	43.8	56.3	65.1	21.3	+	12.5	22.2%	8.8	15.7%	1,039
Other heart condition	52.5	50.4	60.2	67.7	17.3	+	9.7	16.2%	7.5	12.5%	2,647
Breast cancer	53.1	51.6	64.3	68.5	16.9		12.7	19.7%	4.2	6.5%	355
Angina pectoris/CHD	57.3	55.7	63.1	71.6	15.9		7.4	11.7%	8.5	13.5%	1,326
Hypertension	43.0	42.2	51.1	56.9	14.7		8.8	17.2%	5.8	11.5%	4,965
Myocardial infarction	60.5	58.4	64.4	73.0	14.6		6.0	9.4%	8.6	13.3%	1,350
Arthritis	42.4	40.9	49.8	55.1	14.2		8.9	17.9%	5.3	10.7%	5,438
Diabetes	53.1	51.1	56.9	64.9	13.8		5.8	10.1%	8.0	14.0%	1,462
Emphysema, asthma, COPD	47.4	46.7	53.0	60.4	13.7		6.3	11.9%	7.4	14.1%	1,407
Skin cancer	45.0	44.2	51.1	57.8	13.6		6.9	13.5%	6.7	13.1%	1,596
Hardening of the arteries	54.3	54.6	59.7	67.6	13.0		5.1	8.5%	7.9	13.3%	1,106
Mental disorder	40.0	37.9	37.7	49.8	11.9		-0.1	-0.4%	12.1	32.0%	883
Other cancer (not listed below)	47.8	46.5	50.3	57.8	11.3		3.8	7.6%	7.5	14.8%	495
Prostate cancer	69.9	67.2	66.9	75.6	8.4		-0.4	-0.6%	8.7	13.1%	269
Alzheimer's	42.7	45.8	44.4	52.3	6.5		-1.4	-3.1%	7.9	17.8%	251
Broken hip	54.5	54.3	51.9	59.7	5.4	-	-2.4	-4.6%	7.8	15.0%	456
No self-reported conditions	14.3	17.2	18.9	21.5	4.3	-	1.8	9.4%	2.6	13.5%	709
Lung cancer	109.8	109.5	103.6	113.8	4.3		-5.8	-5.6%	10.2	9.8%	89
Colon cancer	63.5	64.2	59.5	68.2	4.0		-4.7	-7.9%	8.7	14.6%	227
MEAN	38.1	37.0	44.5	49.9	12.9		7.5	16.8%	5.4	12.1%	8,986

- Mean unexplained change for people with condition significantly lower than residual for people without condition at $p < 0.05$.
+ Mean unexplained change for people with condition significantly higher than residual for people without condition at $p < 0.05$.

CHD = coronary heart disease; COPD = chronic obstructive pulmonary disease.

Source: Authors' analyses of Medicare Current Beneficiary Survey.

Table 25: Differences between predicted and actual use of RVUs in 1998, inpatient

INPATIENT							Existing Codes		New and Updated Codes		
	Actual 1993 Use	Predicted 1998 Use	1998 Based on 1993 Schedule	1998 Actual Use	Mean Unexplained Change		Effect Size	(% change)	Effect Size	(%)	Number of Observations in 1998
		(1)	(2)	(3)	(3)-(1)		(2)-(1)	[(2)-(1)]/(2)	(3)-(2)	[(3)-(2)]/(2)	
Hardening of the arteries	22.2	21.5	22.1	25.1	3.7		0.6	2.8%	3.1	13.8%	1,106
Hypertension	16.9	15.7	16.1	18.3	2.6		0.4	2.6%	2.2	13.5%	4,965
Myocardial infarction	29.8	27.7	25.8	29.8	2.1		-1.9	-7.3%	3.9	15.2%	1,350
Angina pectoris/CHD	25.2	23.4	22.4	25.9	2.5		-1.1	-4.7%	3.5	15.8%	1,326
Other heart condition	23.1	21.2	20.5	23.7	2.5		-0.7	-3.5%	3.2	15.4%	2,647
Stroke/brain hemorrhage	20.8	18.6	24.4	28.0	9.4	+	5.9	24.1%	3.5	14.5%	1,039
Other cancer (not listed below)	19.2	17.7	16.0	18.2	0.5		-1.8	-11.0%	2.2	14.0%	495
Skin cancer	15.1	13.8	13.0	14.9	1.0		-0.8	-6.4%	1.9	14.4%	1,596
Lung cancer	52.8	50.4	32.7	36.8	-13.6	-	-17.7	-54.0%	4.1	12.6%	89
Colon cancer	25.9	26.4	24.4	27.3	0.9		-2.0	-8.1%	2.9	11.9%	227
Breast cancer	14.1	12.8	12.5	14.0	1.2		-0.3	-2.4%	1.5	12.3%	355
Prostate cancer	19.8	17.8	20.6	23.1	5.3		2.9	13.8%	2.5	12.0%	269
Diabetes	22.1	20.0	20.7	23.5	3.5		0.7	3.6%	2.7	13.2%	1,462
Arthritis	15.2	13.8	13.9	15.8	2.0		0.1	0.5%	1.9	13.8%	5,438
Alzheimer's	12.3	13.9	18.4	20.7	6.8		4.5	24.7%	2.3	12.2%	251
Mental disorder	12.2	10.6	12.0	14.6	4.0		1.4	11.8%	2.6	21.5%	883
Osteoporosis	12.7	10.0	14.6	16.4	6.4	+	4.6	31.8%	1.8	12.1%	1,267
Broken hip	26.8	26.5	20.8	23.8	-2.7		-5.7	-27.2%	3.0	14.3%	456
Parkinson's	18.4	18.7	18.2	20.0	1.3		-0.5	-2.5%	1.7	9.5%	139
Emphysema, asthma, COPD	18.9	18.3	19.2	21.9	3.7		0.9	4.6%	2.8	14.4%	1,407
No self-reported conditions	3.8	4.7	5.5	6.3	1.7		0.8	14.9%	0.8	15.2%	709
Decedent	66.5	65.4	78.0	88.2	22.8	+	12.6	16.2%	10.2	13.0%	339
MEAN	14.0	12.9	13.1	14.9	2.1		0.2	1.6%	1.8	14.1%	8,986

- Mean unexplained change for people with condition significantly lower than residual for people without condition at $p < 0.05$.
+ Mean unexplained change for people with condition significantly higher than residual for people without condition at $p < 0.05$.

CHD = coronary heart disease; COPD = chronic obstructive pulmonary disease.

Source: Authors' analyses of Medicare Current Beneficiary Survey.

Table 26: Differences between predicted and actual use of RVUs in 1998, outpatient

OUTPATIENT	RVUs						Existing Codes		New and Updated Codes		
	Actual 1993 Use	Predicted 1998 Use	1998 Based on 1993 Schedule	1998 Actual Use	Mean Unexplained Change		Effect Size	(% change)	Effect Size	(%)	Number of Observations in 1998
		(1)	(2)	(3)	(3)-(1)		(2)-(1)	[(2)-(1)]/(2)	(3)-(2)	[(3)-(2)]/(2)	
Hardening of the arteries	31.7	32.7	36.6	41.4	8.7		3.9	10.7%	4.8	13.1%	1,106
Hypertension	25.7	26.1	34.1	37.7	11.6		8.0	23.5%	3.6	10.4%	4,965
Myocardial infarction	30.3	30.3	37.7	42.2	11.9		7.4	19.6%	4.5	11.9%	1,350
Angina pectoris/CHD	31.6	31.7	39.6	44.5	12.8		7.9	20.0%	4.8	12.2%	1,326
Other heart condition	29.0	28.7	38.7	43.0	14.3	+	10.0	25.8%	4.3	11.0%	2,647
Stroke/brain hemorrhage	25.1	24.8	30.6	35.7	11.0		5.9	19.2%	5.1	16.6%	1,039
Other cancer (not listed below)	28.1	28.3	33.1	38.2	9.9		4.9	14.8%	5.0	15.1%	495
Skin cancer	28.7	29.2	37.0	41.8	12.6		7.8	21.1%	4.8	13.0%	1,596
Lung cancer	56.8	58.8	70.4	76.4	17.7		11.6	16.5%	6.1	8.6%	89
Colon cancer	36.4	36.6	33.8	39.5	2.9	-	-2.7	-8.1%	5.7	16.8%	227
Breast cancer	38.5	38.4	51.3	53.8	15.4		12.9	25.1%	2.5	4.9%	355
Prostate cancer	49.7	49.0	44.8	50.9	2.0		-4.2	-9.3%	6.1	13.7%	269
Diabetes	30.3	30.5	35.4	40.6	10.1		4.9	13.9%	5.1	14.5%	1,462
Arthritis	26.8	26.6	35.1	38.5	11.9		8.5	24.3%	3.4	9.7%	5,438
Alzheimer's	30.1	31.4	25.0	30.5	-0.9	-	-6.4	-25.6%	5.5	21.8%	251
Mental disorder	27.4	26.9	25.2	34.4	7.6		-1.7	-6.7%	9.3	36.7%	883
Osteoporosis	30.4	29.0	39.5	43.4	14.3		10.4	26.4%	3.9	9.9%	1,267
Broken hip	26.8	26.9	29.1	33.5	6.6		2.3	7.8%	4.4	15.0%	456
Parkinson's	25.9	24.5	38.2	46.6	22.1		13.7	35.8%	8.4	22.0%	139
Emphysema, asthma, COPD	28.1	28.1	33.0	37.5	9.5		4.9	14.9%	4.6	13.8%	1,407
No self-reported conditions	10.4	12.2	13.2	14.9	2.7	-	1.0	7.6%	1.7	12.5%	709
Decedent	24.8	24.1	30.6	34.5	10.4		6.5	21.2%	3.9	12.8%	339
MEAN	23.6	23.7	30.8	34.2	10.5		7.1	23.0%	3.4	11.1%	8,986

- Mean unexplained change for people with condition significantly lower than residual for people without condition at $p < 0.05$.
+ Mean unexplained change for people with condition significantly higher than residual for people without condition at $p < 0.05$.

CHD = coronary heart disease; COPD = chronic obstructive pulmonary disease.

Source: Authors' analyses of Medicare Current Beneficiary Survey.

Table 27: Mean per beneficiary payments for non-RVU services, 1993 and 1998

	1993 Mean Payments per Beneficiary in Dollars	1998 Mean Payments per Beneficiary in Dollars
Anesthesia	30.97	32.86
Diagnostic laboratory and x-ray	213.51	248.15
Health professionals	15.34	18.85
Incident to services	40.87	6.95
Dressings, casts, splints	0.001	0.002
Total non-RVU services	317.47	333.37

Source: Authors' analyses of Medicare Current Beneficiary Survey.

Table 28: Differences between predicted and actual use of and expenditures for diagnostic labs and x-rays in 1993 and 1998

Diagnostic Labs and X-rays	1993 Payment (current dollars)	Predicted 1998 Payment: OLS Model	1998 Payment (current dollars)	Mean Unexplained Change	1993 Counts	Predicted 1998 Counts: OLS Model	1998 Counts	Mean Unexplained Change	Number of Observations 1998
		(1)	(2)	(2)-(1)		(3)	(4)	(4)-(3)	
Hardening of the arteries	313.3	316.4	372.4	56.0	17.9	18.1	22.6	4.5 +	1106
Hypertension	247.6	243.4	280.8	37.4	15.3	15.3	18.4	3.1	4965
Myocardial infarction	340.1	330.4	365.0	34.5	19.0	18.6	22.8	4.2	1350
Angina pectoris/CHD	336.9	327.1	408.0	80.9 +	19.3	18.9	24.7	5.8 +	1326
Other heart condition	310.7	300.4	352.9	52.5	18.5	18.2	22.1	3.9 +	2647
Stroke/brain hemorrhage	255.8	245.3	313.5	68.1 +	15.8	15.6	21.8	6.3 +	1039
Other cancer (not listed below)	268.7	264.7	298.9	34.2	15.5	15.6	20.2	4.6	495
Skin cancer	247.1	245.1	315.7	70.6 +	15.2	15.3	19.1	3.9	1596
Lung cancer	454.2	468.8	644.3	175.5	24.4	25.6	39.3	13.7	89
Colon cancer	344.9	343.0	339.6	-3.4	19.3	19.4	20.6	1.2	227
Breast cancer	280.4	275.3	344.1	68.8	17.8	18.0	20.5	2.5	355
Prostate cancer	383.6	380.2	360.5	-19.7 -	21.3	21.1	23.6	2.5	269
Diabetes	312.5	302.8	328.7	25.9	20.2	19.9	24.6	4.7 +	1462
Arthritis	238.0	230.9	275.1	44.2	14.8	14.7	17.7	3.0	5438
Alzheimer's	268.6	282.5	292.3	9.8	17.6	18.8	18.2	-0.5 -	251
Mental disorder	202.1	192.3	221.6	29.3	12.8	12.5	14.7	2.2	883
Osteoporosis	258.8	239.0	298.7	59.7	16.9	16.1	19.5	3.4	1267
Broken hip	228.0	224.2	273.1	49.0	15.7	15.9	19.3	3.4	456
Parkinson's	263.4	253.9	310.8	56.9	15.9	16.0	18.4	2.4	139
Emphysema, asthma, COPD	252.9	248.0	296.8	48.7	15.5	15.4	19.0	3.6	1407
No self-reported conditions	79.8	96.8	91.4	-5.4 -	5.0	6.5	5.9	-0.6 -	709
Decedent	351.1	341.4	408.2	66.8	22.9	22.8	26.1	3.3	339
MEAN	213.5	208.9	248.2	39.3	13.3	13.2	16.0	2.8	8986

- Mean unexplained change for people with condition significantly lower than residual for people without condition at $p < 0.05$.
+ Mean unexplained change for people with condition significantly higher than residual for people without condition at $p < 0.05$.

CHD = coronary heart disease; COPD = chronic obstructive pulmonary disease.

Source: Authors' analyses of Medicare Current Beneficiary Survey.

Table 29: Differences between predicted and actual use of and expenditures for anesthesia in 1993 and 1998

Anesthesia	1993 Payment (current dollars)	1998 Payment (current dollars)	Change	1993 Counts	1998 Counts	Change	Number of Observations 1998
	(1)	(2)	(2)-(1)	(3)	(4)	(4)-(3)	
Hardening of the arteries	43.9	45.4	1.5	22.8	20.2	-2.6	1106
Hypertension	34.6	36.8	2.3	18.2	17.0	-1.1	4965
Myocardial infarction	46.3	47.9	1.6	21.8	24.4	2.6	1350
Angina pectoris/CHD	45.5	47.4	1.8	20.7	19.5	-1.2	1326
Other heart condition	43.1	43.6	0.5	21.5	20.6	-0.9	2647
Stroke/brain hemorrhage	33.2	41.0	7.8	17.1	20.5	3.4	1039
Other cancer (not listed below)	39.1	52.5	13.4	24.4	22.6	-1.8	495
Skin cancer	32.3	35.5	3.3	16.5	16.7	0.2	1596
Lung cancer	95.5	75.4	-20.2	45.2	26.1	-19.1	89
Colon cancer	62.0	57.6	-4.4	33.8	23.0	-10.8	227
Breast cancer	41.4	40.6	-0.8	22.4	14.4	-8.0	355
Prostate cancer	58.2	57.6	-0.6	32.6	29.2	-3.3	269
Diabetes	40.8	42.0	1.2	20.2	18.4	-1.8	1462
Arthritis	34.2	36.3	2.2	19.0	16.9	-2.1	5438
Alzheimer's	23.1	21.4	-1.7	6.8	8.6	1.8	251
Mental disorder	21.5	26.7	5.2	8.6	13.4	4.8	883
Osteoporosis	28.5	38.1	9.6	12.8	19.9	7.1	1267
Broken hip	34.8	44.4	9.6	18.9	24.6	5.7	456
Parkinson's	30.5	26.6	-3.9	13.7	15.4	1.7	139
Emphysema, asthma, COPD	36.7	38.6	2.0	18.0	18.4	0.4	1407
No self-reported conditions	14.7	16.4	1.7	7.1	5.7	-1.5	709
Decedent	73.9	86.5	12.5	36.8	37.4	0.7	339
MEAN	31.0	32.9	1.9	16.5	14.7	-1.8	8986

CHD = coronary heart disease; COPD = chronic obstructive pulmonary disease.

Note: Anesthesia was used so infrequently that a model for its use could not be fit reliably; no predicted values or “unexplained changes”, therefore, are included in this table.

Source: Authors' analyses of Medicare Current Beneficiary Survey.