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A SISYPHEAN TASK? ATTEMPTS TO CONTROL MEDICARE SPENDING VIA THE INPATIENT PROSPECTIVE SYSTEM AND THE FEE-FOR-SERVICE PHYSICIAN REIMBURSEMENT SYSTEM

By Jason Fichtner and John Pulito

MERCATUS CENTER
George Mason University

Introduction

On July 30, 1965, President Lyndon B. Johnson signed the Medicare program into law. The program's intent was to protect Americans over the age of 65, many of whom receive a fixed income, from depleting their savings due to rising health care costs.[1] In 2011, Medicare has grown into one of the largest health care insurance providers in the United States, insuring approximately 47.5 million citizens.[2]

There is growing general concern regarding the program's sustainability into the future, a concern warranted by the fact that the program is projected to become insolvent by 2024.[3] Currently, approximately 15.1 percent of the United States' population depends on the coverage provided by Medicare; the number of beneficiaries is expected to nearly double by 2030.[4]

Medicare was not designed to pay the entire amount of a person's medical bills. After the beneficiary pays an established deductible, Medicare typically reimburses 80 percent of the approved amount for covered services leaving the beneficiary responsible for a 20-percent copayment. In addition, certain services are considered uncovered expenses, e.g., while an eye examination related to a medical condition is a covered service, the refraction for eyeglasses is uncovered.[5] Beneficiaries are responsible for paying 100 percent of the cost of uncovered services.

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[1] Social Security Administration, "History of SSA during the Johnson Administration," 2011, http://www.ssa.gov/history/ssa/lbjappendG7.html.
[2] Centers for Medicare and Medicaid Services, "2011 Annual Report of the Board of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds," 2011, https://www.cms.gov/ReportsTrustFunds/downloads/tr2011.pdf.
[3] Social Security Administration, "A Summary of the 2011 Annual Reports," 2011, http://www.ssa.gov/oact/trsum/index.html#D.
[4] Henry J. Kaiser Family Foundation, Historical and Projected Number of Medicare Beneficiaries and Number of Workers per Beneficiary, 2010, http://facts.kff.org/chart.aspx?cb=58&sctn=170&ch=1808.
[5] Troy Bedinghaus, "Medicare Vision Benefits - Understanding your Vision Plan under Medicare," June 15, 2010, http://vision.about.com/od/commonvisionproblems/a/Medicare_Vision.htm.

Beneficiaries have the option of purchasing what is called supplemental or "Medigap" insurance, i.e., insurance that pays the 20-percent copayment that is the patient's responsibility. These policies typically do not pay for uncovered services. Medigap policies are sold by private insurance companies.

According to research released by the Henry J. Kaiser Family Foundation, approximately 10 percent of all Medicare beneficiaries in 2008 were covered by Medicare alone, i.e., had no other health care coverage.[6] Although the data is somewhat dated, it suggests that a sizeable number of elderly individuals are totally dependent on Medicare to meet their health care needs. If the program were to become insolvent, the results could be devastating for them. It is important to note that the fiscal difficulties currently facing the Medicare program have developed over a long period of time. Indeed, since the program's inception in 1965, it has been plagued by high expenditures that have continuously threatened its solvency. Various reform efforts have been attempted to control the cost of Medicare, only to see cost-growth problems return. The reforms resemble the fate of Sisyphus, a king in Greek mythology who was punished by the gods to roll a giant boulder up a hill only to watch it roll back down and to repeat this task with similar results for all eternity. While a multitude of research studies could be conducted on Medicare expenditures, this paper focuses solely on those related to hospital and physician payments. Individually, these two forms of payment accounted for nearly 66 percent of all Medicare expenditures in 2009.[7]

Currently, hospitals receive a set fee for services provided to Medicare beneficiaries based on the diagnosis for which the patient is admitted. If the hospital's costs are lower than the

[6] Henry J. Kaiser Family Foundation," Supplemental Coverage Among Medicare Beneficiaries, by Income," 2008, http://slides.kff.org/chart.aspx?ch=1931.
[7] Centers for Medicare and Medicaid Services, "National Health Expenditures, by Source of Funds and Type of Expenditure: Calendar Years 2003-2009," 2009, https://www.cms.gov/NationalHealthExpendData/downloads/tables.pdf.

amount paid by Medicare, the hospital keeps the difference as profit. Conversely, if the actual cost of caring for an individual patient is higher than the amount paid, the hospital is required to absorb the loss.

This system, commonly referred to as the Inpatient Prospective Payment System (IPPS), differs significantly from the previous method of reimbursement, commonly referred to as the Reasonable Cost Reimbursement System (RCRS). In the latter, hospitals were reimbursed using an inherently inflationary system in which payments were based on the costs incurred in examining and treating a patient, plus 2 percent. IPPS was introduced in 1983 as a result of what policy makers deemed "excessive" payments for hospital care. Medicare hospital payments increased an average of 16.2 percent between 1980 and 1983. However, following implementation of IPPS, the average increase was only 6.5 percent.

The method by which physicians receive reimbursement from Medicare has also undergone significant changes over the years. In 1992, as a result of what were construed to be excessive increases in payments to physicians, Medicare introduced a Fee-for-Service reimbursement system (FFS) which, similar to IPPS, set payment rates based on the patient's diagnosis.

The literature is replete with research arguing how the IPPS and FFS drastically changed the way Medicare operated. This paper focuses on how these two reimbursement systems affected Medicare expenditures, and explores the hospitals' and physicians' responses to implementation. Though policy recommendations are outside the scope of this paper, they will be offered in upcoming Mercatus Center research.

Current State of Medicare

Medicare plays an integral role in providing elderly Americans with a basic level of health insurance coverage. According to research conducted by the Kaiser Foundation, the Medicare program provides coverage to a population with many needs and varying circumstances. Many of the program's beneficiaries are healthy, i.e. do not suffer from chronic, debilitating conditions. However, 38 percent do live with three or more such conditions, and 28 percent are considered to have fair/poor health.[8] All eligible citizens are offered two types of Medicare coverage, Parts A and B. the two parts together are commonly referred to as the "Original Medicare."

Medicare Part A covers inpatient care in hospitals and skilled nursing facilities as well as hospice and home health care services.[9] In most cases, the financial burden depends upon the type of health care facility to which the beneficiary is admitted. For instance, in 2011, a beneficiary admitted to a hospital is required to pay the following "out of pocket" expenses: $1,132 deductible, $283 per day for days 61-90, $566 per "lifetime reserve day" after day 90 (up to 60 days), and all costs for each day after the lifetime reserve days.[10] Every beneficiary is allotted 60 "lifetime reserve days" which can be used for any case in which the patient is admitted to the hospital for more than 90 days.[11] Once these "lifetime reserve days" are depleted, however, the beneficiary is responsible for all costs.

Funding for Part A comes primarily from payroll taxes which are paid by employees, employers, and self-employed individuals. Since 1990, the payroll tax rate for Medicare has been

[8] Henry J. Kaiser Family Foundation, "Health Care and the 2008 Elections," October 2008, http://www.kff.org/medicare/upload/7821.pdf.
[9] Centers for Medicare and Medicaid Services, "Medicare and You," 2011, http://www.medicare.gov/publications/pubs/pdf/10050.pdf.
[10] Ibid.
[11] Ibid.

2.90 percent.[12] For beneficiaries who have paid Medicare taxes for at least 10 years (40 or more Medicare-covered quarters), or have a spouse who has done so, there is no premium for Part A.

While Part A provides hospital insurance (HI) coverage to the beneficiary, Part B provides medical insurance to help defray costs associated with physician care.[13] Similar to Part A, the beneficiary incurs "out of pocket" costs associated with Part B care. A beneficiary is responsible for paying 20 percent of the approved amount of any Part B service rendered.[14] However, Part B differs from Part A in that beneficiaries pay an additional monthly premium to receive this coverage. While enrollment is not mandatory, a penalty applies for any individual who does not enroll in Part B on becoming eligible.[15] The premium in 2011 is based on the beneficiary's 2009 annual income and can range from $115.40 to $369.10 a month.[16]

There are two additional components to Medicare—Parts C and D. Part C, commonly referred to as the "Medicare Advantage" plan, is a combination of the services offered in both Parts A and B. This plan is available to anyone desiring a customized, as opposed to "one size fits all," Medicare plan. Beneficiaries opting for enrollment in a Medicare Advantage plan in lieu of the traditional Medicare Program are still responsible for paying the Part B-premium. Because the beneficiary is not being insured by the Medicare program, Medicare pays the private insurance company a set amount each month. Unique to Part C, a beneficiary can choose to be insured by any company offering such coverage. If the plan's premium is higher than the amount offered by Medicare, the beneficiary is responsible for paying the difference. Part D is a

[12] Social Security Administration, "Social Security and Medicare Tax Rates," 2011, http://www.ssa.gov/oact/progdata/taxRates.html.
[13] Centers for Medicare and Medicaid Services, "Medicare and You."
[14] Ibid.
[15] Ibid.
[16] Ibid.

prescription drug plan designed to offset the costs associated with purchasing prescribed medications. Part D is available through either Medicare or a private health insurance company.

To pay for the services offered by Medicare, money collected through taxes and premiums are placed into two separate trust funds. Services offered by Part A, funded primarily through payroll taxes, are paid by the Health Insurance Trust Fund.[17] Similarly, services offered by Part B and Part D, if applicable, are paid by the Supplementary Medical Insurance (SMI) Trust Fund. This fund's reserves are replenished by two sources—money from the general funds of the U.S. Treasury and premiums paid by beneficiaries for Parts B and D.

As stipulated by law, the U.S. Treasury is required to pay any amount that is underfunded by the SMI Trust Fund. In fiscal year 2011, the Medicare Board of Trustees estimates that the difference between Medicare's outlays and funding from dedicated sources will require that the Treasury Department provide 45 percent of Medicare financing.[18] No stipulation exists to provide funding when expenditures exceed revenues in the HI Trust Fund. Instead, if a deficit is created, the savings accumulated in that fund are reduced. On average, since the 1970s, Part A expenditures have been adequately funded by payroll taxes.[19] Of concern is the future ability of the HI Trust Fund to continue making payments. As noted by the Medicare Board of Trustees, the HI Trust Fund is expected to become insolvent by 2024. Interestingly, the insolvency date in the 2009 report was 2017.[20] In the 2010 report, the insolvency date was pushed back by 12 years

[17] Centers for Medicare and Medicaid Services, "How is Medicare Funded?" September 2009, http://www.medicare.gov/Publications/Pubs/pdf/11396.pdf.
[18] Centers for Medicare and Medicaid Services, "2011 Annual Report of the Board of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds," 2011, https://www.cms.gov/ReportsTrustFunds/downloads/tr2011.pdf.
[19] Veronique de Rugy, "Breakdown of Medicare Expenditures," chart, 2010, http://mercatus.org/publication/breakdown-medicare-expenditures.
[20] Centers for Medicare and Medicaid Services, "2009 Annual Report of the Board of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds," 2009, https://www.cms.gov/ReportsTrustFunds/downloads/tr2009.pdf.

to 2029 due to structure changes mandated by the Affordable Care Act (ACA).[21] However, due to increasing health care costs and lingering effects from the economic recession, the insolvency date has again moved, this time forward five years to 2024 in the 2011 report.[22]

Prospective Payment System

What is the Reasonable Cost Reimbursement System?

Pre-Medicare

Prior to the adoption of Medicare in 1965, hospital reimbursement was based on charges as opposed to costs. Writing in the *American Journal of Law and Medicine*, Stephen M. Weiner defines charges as "the amounts billed to the general public for hospital services, and are the amounts ordinarily paid by uninsured persons who have the capacity to pay their hospital bills—that is, uninsured persons who do not receive free care or become bad debts."[23] Because reimbursement was not based on the actual cost of providing care, and due to the fact that hospitals "had a only a limited need and ability to identify their true cost of operation," Weiner finds that a direct relationship between cost and the amount a hospital charged for its services rarely existed.[24]

Beginning in the 1950s, the practice of reimbursement based on charges was changed drastically. Endorsed by the American Hospital Association (AHA), hospital reimbursement transitioned into a system based on costs as opposed to charges.[25] In Herman and Anne Somers' 1967 work on the Medicare program, the authors offers several reasons for this transition: (1)

[21] Centers for Medicare and Medicaid Services, "2010 Annual Report of the Board of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds," 2010, https://www.cms.gov/ReportsTrustFunds/downloads/tr2010.pdf.
[22] Centers for Medicare and Medicaid Services, "2011 Annual Report of the Board of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds 2011."
[23] Stephen M. Weiner, "'Reasonable Cost' Reimbursement for Inpatient Hospital Services Under Medicare and Medicaid: The Emergence of Public Control," *American Journal of Law and Medicine* 3, no. 1 (1977): 5.
[24] Ibid.
[25] Ibid.

unlike charges, hospitals began developing the ability to calculate the costs associated with the services provided; (2) due to inconsistent methods used by hospitals to calculate these costs, third-party payers began to view the charge-based system of reimbursement as inequitable and arbitrary; and (3) hospitals began to realize that if their charges ever began to reflect true costs, sophisticated third-party payers would scrutinize the charges.[26]

The Introduction of the Reasonable-cost Reimbursement System (RCRS)

Given the timing of Medicare being signed into law and considering the growing movement away from charge-based reimbursement, Weiner posited that Congress followed a similar trend when implementing RCRS. Another motivation for choosing a cost-based system was policy makers' concern that hospitals would be unwilling to accept Medicare beneficiaries, i.e., that Medicare patients would be denied care if reimbursement was not cost-based. To prevent this, Congress guaranteed payments for all "reasonable" costs incurred by a hospital providing care to a Medicare beneficiary. According to the Department of Health, Education, and Welfare (HEW), a cost was considered "reasonable" as long as it was not found to be "substantially out of line with other institutions in the same area which are similar in size, scope of service, utilization, and other relevant factors."[27] Due to the ambiguity of this definition, no constraint was placed on hospital spending for Medicare beneficiaries; in a sense, hospitals were given a "license" to spend.

It is also important to note that the RCRS had a built in "plus" factor which provided an additional 2 percent and 0.5 percent of costs to non-profit and for-profit hospitals, respectively.[28]

[26] Somers, Herman M. and Anne R. Somers, "Medicare and the Hospitals – Issues and Prospects," 1967: 154-196. (Cited in Weiner, 1977).
[27] 20 C.F.R. §405.451(c)(2) 1976 – Cited in Werner.
[28] 20 C.F.R. §405.428(c)(2) 1976 – Cited in Werner.

HEW asserted that this allowance was "in lieu of specific recognition of other costs in providing and improving services."[29]

Transition to the Inpatient Prospective Payment System (IPPS)

Not surprisingly, Medicare spending grew at an unsustainable rate. As calculated by Mayes and Berenson using data provided by the House Committee on Ways and Means, hospital spending increased 50 percent between 1967 and 1970, 123 percent between 1970 and 1975, and 122 percent between 1975 and 1980.[30]

In an attempt to decrease costs associated with hospital spending, amendments were made to the Social Security Act in 1972. One major revision attempted to categorize costs into two types: routine (common to all hospitals, e.g., "hotel" costs) and ancillary (medically necessary costs).[31] Unless a cost was ancillary, Section 203 of the Social Security Amendments placed a limit on the amount a hospital could submit for reimbursement.

While the government's attempt at separating costs into two categories had a modest effect in decreasing expenditure growth for hospital spending, the benefit was short lived. In President Reagan's first full term as president, hospital spending increased 17.5 percent from the previous year. According to Stuart Altman, a health care policy advisor in the Nixon administration, hospital administrators quickly learned ways around the legislation. According to Altman, hospitals "would take nurses and change them into 'respiratory nurses,' which made them fully reimbursed ancillary costs. In other words, what were previously considered routine costs became ancillary by category and fully reimbursed."[32]

[29] Weiner, 1977, pg. 10.
[30] Rick Mayes and Robert A. Berenson, "Medicare Prospective Payment and the Shaping of U.S. Health Care" (Baltimore, Maryland: The Johns Hopkins University Press, 2006).
[31] Ibid.
[32] Ibid., 20.

To policy makers, it was becoming increasingly difficult to control costs under the current system of reimbursement. Hospitals were faced with a strong incentive to continuously increase costs under the RCRS. If Medicare was to remain solvent into the future, a significant change was required. This change came in the form of the IPPS.

What is the Inpatient Prospective Payment System?

The health care industry was significantly changed when policy makers implemented the IPPS in 1983. For the first time since Medicare was created, hospitals no longer had an incentive to increase costs. Under the new system, Medicare established fixed payments based on a patient's diagnosis. Since the amount for each diagnosis was established and known in advance, the incentive for hospitals was to decrease cost. Hospital inefficiency such as redundancies and unnecessary services would result in an erosion of the reimbursement.

How Does the IPPS Calculate Payments?

The Medicare reimbursement process is very complex and beyond the scope of this paper. However, a basic explanation of how the IPPS calculates payments is warranted. A key component of IPPS is the separation of patients into what is commonly known as diagnosis-related groups (DRGs) which individually represent the various medical and surgical services a hospital provides for a patient.[33] In October 2009, there were 746 DRGs.[34] Unique to this system of reimbursement, policy makers assign a weight to each DRG which "reflects the average level of resources for an average Medicare patient in the DRG, relative to the average level of resources for all Medicare patients."[35] The weight is then multiplied by the hospital's payment rate per case to determine the amount the hospital will be reimbursed for providing care to an

[33] Tim Brady, Barbie Robinson, and Tricia Davis, "Medicare Hospital Prospective Payment System: How DRG Rates are Calculated and Updated," Office of Inspector General; Office of Evaluation and Inspections, 2001, 1-18.
34 Medpac, "Hospital Acute Inpatient Services Payment System," October 2009, http://www.medpac.gov/documents/MedPAC_Payment_Basics_09_hospital.pdf.
[35] 64 F.R. 41489, p. 41491 – Cited in Medpac.

individual with that specific DRG. The purpose of the DRG weights is to capture the relative value of each service compared to others. For example, in fiscal year 2001, the DRG weights for care of a patient with a concussion, viral meningitis, and a heart transplant were 0.5422, 1.4966, and 19.0098, respectively.[36] Relative to each other, care rendered for heart transplant surgery is approximately 35.06 and 12.72 times more expensive than care rendered for viral meningitis and a concussion, respectively.

Naturally, it would be incorrect to assume that the prices set for medical services remain static from year to year. To assure that reimbursements remain current, the Centers for Medicare and Medicaid Services (CMS) update the DRG weights annually based on the following factors:[37]

- inflation, hospital productivity, and new technology
- changes in resource consumption due to technology and other factors
- changes in treatment patterns, technology, and other factors that may change the use of hospital resources

Effects on Hospitals

The introduction of IPPS placed a significant burden on hospitals. Under the original cost-reimbursement system, hospitals had the financial incentive to maximize the amount of care provided to each Medicare beneficiary. Under the new system, however, the incentive changed to minimizing the amount of care provided to the patient. Since reimbursements are fixed and based on an assigned DRG, each additional service represents an additional cost and ultimately decreases the hospital's profit. For the first time since Medicare became law, hospitals were faced with the task of cutting costs and becoming more efficient.

Given the reimbursement limits implemented as a result of IPPS, it is reasonable to assume that significant changes occurred to hospitals' profitability following implementation. As

[36] Brady, Robinson, and Davis.
[37] 42 C.F.R. §412.60 2000 – Cited in Brady, Robinson, and Davis.

noted by Coulam and Gaumer, profit margins are an important measure of a hospital's financial condition.[38] The profit margin is calculated as the "total amount of Medicare inpatient payments [hospitals] received relative to the total inpatient costs [hospitals] incurred treating Medicare patients."[39] A higher profit margin suggests a more financially stable hospital. Based on his research on IPPS, George Whetsell finds that most hospitals in the early years of the system were better off financially than they were under the original RCRS.[40] J.K. Iglehart finds that hospitals' margins were approximately 15 percent in 1984 and 1985. Accounting for losses associated with Medicaid and "charity cases," he finds that the overall margin was 6.2 percent which is more than double the total increase from the previous five years.[41] Whetsell primarily attributes the favorable margins to several actions undertaken by the hospitals: (1) rigorously educating hospital staff on DRGs and the underlying purpose of the IPPS; (2) immediate cost cutting measures, e.g., decreasing length of stay; (3) exploiting loopholes present in the new system; and (4) any shortfall that was experienced with Medicare was supplemented by increased costs for all patients—a process known as cost-shifting.

Naturally, the previous discussion leads one to question why hospitals experienced record-high profit margins following the implementation of a system that directly limited the amount a hospital could receive for providing its services. To address this question, a brief discussion is warranted regarding points three and four above.

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[38] Robert F. Coulam and Gary L. Gaumer, "Medicare's Prospective Payment System: A Critical Appraisal," *Health Care Financing Review* 12 (1991): 45-77.
[39] Mayes and Berenson, 51.
[40] George Whetsell, "The History and Evolution of Hospital Payment Systems: How did we get here?" *Nursing Administration Quarterly* 23, no. 4 (1999): 1-15.
[41] J.K. Iglehart, "Early Experiences with Prospective Payment of Hospitals," *New England Journal of Medicine* 314, no. 22 (1986): 1460-464.

Loopholes

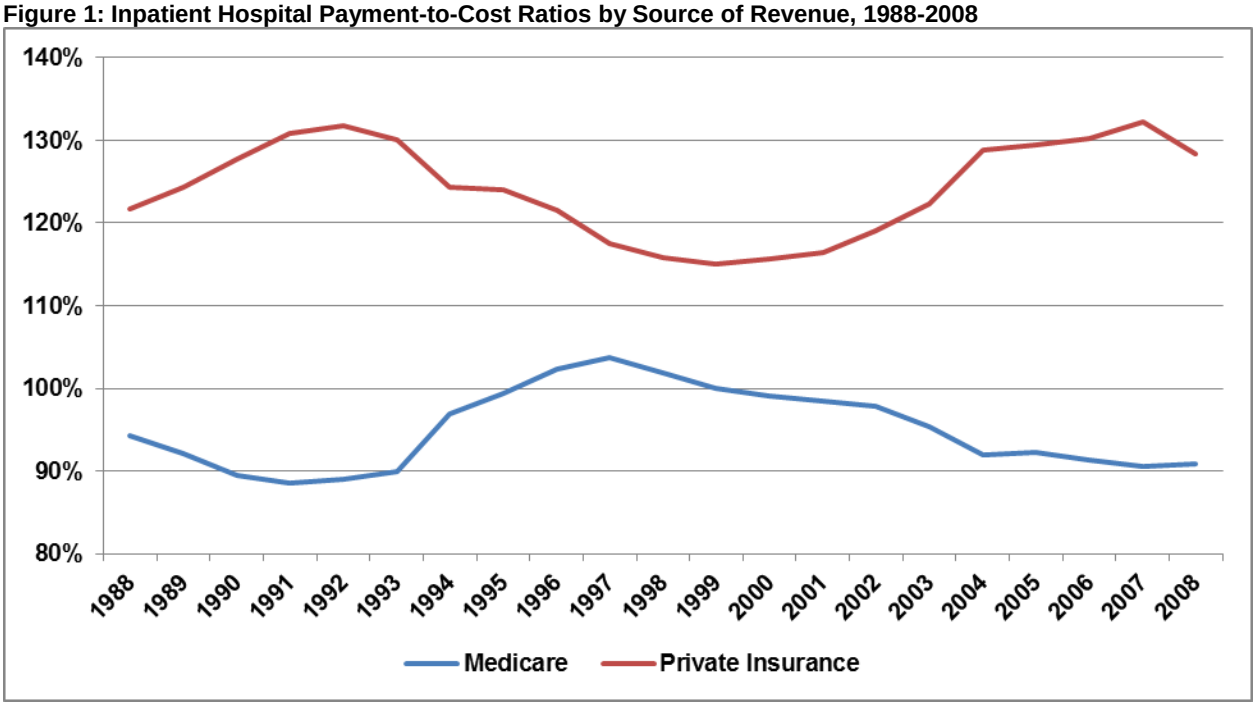
When IPPS was implemented in 1983, it was introduced with a four-year phase-in period. While the phase-in period allowed hospitals time to begin minimizing their costs and rearranging their business models, it left open various avenues for hospitals to continue operating under the original reimbursement system. With each year that passed, however, the number of units exempt from IPPS dwindled until the phase-in period was complete.[42]

Cost-shifting

Payment-to-cost ratios "show the degree to which payments from each payer cover the costs of treating its patients. These cannot be used to compare payment levels across payers, however, because the service mix and intensity vary."[43] As illustrated in Figure 1, there appears to be a clear relationship between both Medicare and private insurance payment-to-cost ratios. This relationship suggests the idea of cost shifting, i.e., that hospitals increased the amount charged to all patients to make up for the loss created by IPPS.[44] Uwe Reinhardt elaborated further on this. He commonly considers the idea of "cost shifting" as an indirect tax placed on individuals who have health insurance but are not covered by Medicare services.[45]

[42] Whetsell.
[43] Henry J. Kaiser Family Foundation, "Community Hospital Payment-to-Cost Ratios, by Source of Revenue, 1980-2008," 2008, http://facts.kff.org/chart.aspx?cb=58&sctn=170&ch=1807.
[44] Mayes and Berenson.
[45] Uwe E. Reinhardt, "Health Care Spending and American Competiveness," *Health Affairs* 8, no. 4 (1989): 5-21.

Figure 1: Inpatient Hospital Payment-to-Cost Ratios by Source of Revenue, 1988-2008



Source: American Hospital Association and Avalere Health, Avalere Health Analysis of 2008, American Hospital Association Annual Survey Data, for Community hospitals, Trendwatch Chartbook, 2010, Trends Affecting Hospitals and Health Systems, Table 4.4, A-35

A further examination of cost-shifting reveals an interesting unintended consequence overlooked by policy makers when Medicare was originally created. As discussed by Whetsell, hospitals bolstered margins by shifting a significant portion of the shortfall from Medicare to private health insurance companies.[46] For a more illustrative description, see Figure 1.

Stuart Guterman, on the other hand, believes that "cost-shifting" is the wrong word to describe the behavior seen in Figure 1. He suggests that cost-shifting "refers to the relationship between changes in the prices paid by different groups; that is, an increase in losses (or a decrease in gains) from one source creates pressure to generate an offsetting increase in revenue

[46] Ibid.

from another source."[47] Instead, he argues that the correct term should be "price discrimination" or "differential pricing."

As argued by Mayes and Berenson, one of the primary reasons for the wide-spread disagreement found in the literature is that the definition for cost-shifting is debatable. They suggest that the literature either finds a significant increase in hospital payments from private insurance companies following a decrease in Medicare payments or instead finds no relationship at all.[48]

The benefit of having higher-than-normal profit margins was short lived, however. In a presentation on hospital margins between 1986 and 1992, Guterman finds that hospital margins decreased between 1986 and 1991, with the margins becoming negative starting in 1990.[49] Although the decrease does not propose causation, it does support the argument that hospitals eventually became fiscally strained.

Controlling Expenditures

Medicare policy makers are continuously charged with the difficult task of controlling costs and ensuring the program's future solvency. The introduction of IPPS was their attempt in the early 1980s at curbing the high costs associated with hospital payments. Policy makers were convinced that IPPS would drastically cut hospital payments, making the program more sustainable. Given the problems Medicare was facing when IPPS was implemented, one must question how effectively the system controlled costs and whether it significantly affected expenditures related to hospital payments. To explore the question of how effectively the

[47] Stuart Guterman, Jack Ashby, and Timothy Greene, "Hospital Cost Growth Down," *Health Affairs* 15, no. 3 (1996): 136.
[48] Mayes and Berenson.
[49] Stuart Guterman, "What Happens when Medicare Payments Decline? Putting Medicare into Perspective," presentation at the conference "When Public Payment Declines, Does Cost Shifting Occur? Hospital and Physician Respones," Robert Wood Johnson Foundation and Academy Health, Washington DC, November 13, 2002.

program met its goals, Table 1 illustrates the total payments for hospital care pre and post-implementation.

Table 1: Expenditures in Billions, 1980-97

Year	National Health Expenditures($)	Change(%)	All Medicare Expenditures($)	Change(%)	Medicare Hospital Payments($)	Change(%)
1980	249.1	-	36.4	-	25.4	-
1981	288.6	15.9	43.7	20.0	30.6	20.3
1982	323.8	12.2	51.2	17.3	35.7	16.5
1983	356.1	10.0	58.1	13.5	39.9	11.8
1984	387.0	8.7	64.8	11.5	44.5	11.7
1985	420.1	8.5	69.8	7.8	47.1	5.7
1986	452.3	7.7	75.8	8.5	49.2	4.6
1987	492.5	8.9	82.0	8.2	51.3	4.2
1980-1983	-	12.7	-	15.0	-	16.2
1984-1987	-	8.5	-	9.0	-	6.5

Source: Prospective Payment Assessment Commission, *Medicare and the American Health Care System* (1991), 12(III)

Table 1 does not provide conclusive evidence that IPPS was successful in curbing payments for hospital services. The figures suggest that a significant change occurred following implementation in 1984. While there is a visible correlation present between the system's implementation and a decrease in cost growth, causation has yet to be determined.

To determine if the decrease in hospital payments came as a result of implementing IPPS, it is necessary to control for other factors, isolating the system's effects. In his research on the effects of IPPS, Richard W. Foster controlled for several variables to analyze the program's effects. Accounting for growth in both medical and general price inflation, as well as the growth rate in number of Medicare beneficiaries, he finds IPPS implementation resulted in a decline in Part A expenditures between 1985 and 1987.[50]

[50] Richard W. Foster, "Cost-Shifting under Cost-Reimbursement and Prospective Payment," *Journal of Health Economics* 4, no. 3 (1985): 261-71.

Another measure of the effectiveness of IPPS is to examine how excessive growth in hospital payments changed during the transition from the RCRS to the IPPS. Under RCRS, hospitals had an incentive to increase cost. As noted by the data, the growth in costs was often greater than the growth in medical inflation. In Chapin White's research on the effects of IPPS, he seeks to discover how IPPS altered the growth rate for hospital payments beyond a reasonable growth rate based on the inflation of medical services. He defines excessive growth as "growth beyond the combination of the general rate of economic growth and the rate of change in the age composition among beneficiaries."[51] Controlling for the variables offered by Foster, White finds that the implementation of IPPS "coincided with a substantial and sustained reduction in excess growth in Medicare hospital spending."[52] In other words, the introduction of IPPS led to cost growth that reflected the inflation for medical services.

Physician Fee Schedule

Physician Reimbursement Prior to the Fee Schedule

Until 1992, Medicare physician reimbursement was based on a system of customary, prevailing and reasonable charges, i.e., the CPR charge system. Under this system, physicians were reimbursed at the lowest of three types of charges: (1) customary, (2) prevailing, and (3) actual. While the customary charge reflected the amount the physician charged for the same service in the prior year, the prevailing charge was "set at the seventy-fifth percentile of customary charges of other physicians in the same specialty and geographic area."[53] Actual charges represent the amount billed for services by the physician.

[51] Chapin White, "The Slowdown in Medicare Growth," working paper, Congressional Budget Office 2006-08 (2006): 2.
[52] Ibid., 10
[53] Laura S. Hallen, "Medicare Physician Payment Policy Facts and Explanations," Articleinput.com, 2010, http://www.articleinput.com/e/a/title/Medicare-Physician-Payment-Policy-facts-and-explanations.

The CPR system was utilized with the intent of promoting efficiency while discouraging arbitrary increases in physician prices. The CPR charge system was intended to contain payments by subjecting physician charges to a series of checks and balances. Unfortunately, this was unsuccessful due to an inherent problem; the charges billed by physicians had a direct relationship to their own customary charges as well as directly influencing the prevailing rate for a locality—under this system, physicians had an incentive to increase the amount charged—whether arbitrary or as a result of increased services offered. Under the CPR charge system, any increase in charges today significantly impact reimbursement rates in the future.

Transition to the Fee Schedule

Given the incentive structure faced by physicians under CPR charge system, a significant change was necessary to curb physician expenditures. Berenson et al., find that spending for physician services increased at an average annual rate of 8.9 percent between 1968 and 1975.[54] Table 2 provides more detailed growth rate estimates.

Table 2: Medicare Expenditures, Select Growth Rates

	1968 - 1975 (%)	**1975 - 1984** (%)	**1984 - 1986 (%)**	**1986 - 1988 (%)**	**1988 - 1991 (%)**	**1991 - 1998 (%)**	**1998 - 2005 (%)**	**1968 - 2005 (%)**
Average Annual Increase in Total Reimbursement per Enrollee	8.9	16.0	6.6	11.4	8.5	2.0	7.4	8.9
Average Annual Increase in Prices	4.4	8.6	0.5	4.2	0.3	2.7	2.4	4.1
Average Annual Increase in Volume and Intensity	4.3	6.8	6.0	6.8	8.2	-0.7	5.0	4.6

Source: Berenson, et al., (2008) calculations based on data taken from Medicare trustees' reports for 1987, 1997, and 2006; (Medicare Board of Trustees, 1987, 1997, and 2006)

[54] Berenson et al., (2008) calculations based on data taken from Medicare trustees' reports for 1987, 1997, and 2006; Board of Trustees, 1987, 1997, and 2006.

As Table 2 illustrates, reimbursement per beneficiary reached an all-time high between 1975 and 1984. This period coincides with an attempt by Congress to tie medical inflation to the Medicare Economic Index (MEI), an index which measures the input costs to the health sector. Congress believed that a cap on annual inflation would solve the problem of physicians excessively increasing charges for services. As noted by Berenson et al., the legislation cap failed. Reimbursements to physicians increased on average by 16 percent annually.

Since the cap on annual inflation failed to achieve the results desired, Congress opted instead to freeze physicians' charges and reimbursement levels between July 1984 and December 1986.[55] Freezing payments appeared to be a way of limiting spending growth, this was unsuccessful. Although Berenson et al., acknowledge that price levels barely increased, physicians increased the number of patients seen as well as the number of services performed. In other words, physicians increased the volume and intensity, i.e., the number of tests and procedures performed on a patient, of their services which resulted in increased reimbursement to offset the loss. Further evidence of this can be seen in Table 2. While prices increased by only 0.5 percent between 1984 and 1986, the volume and intensity of the services provided increased. Both increases led to an average annual increase in reimbursement by 6.6 percent. When the freeze on payments was complete, reimbursements increased to an annual average of 11.4 percent between 1986 and 1988. Since payments appeared to be impossible to control, Congress implemented the fee-for-service physician reimbursement system in 1992.

The Introduction of the Fee-for-Service Physician Reimbursement System (FFS)

[55] Robert Berenson, et al., "Cost Containment in Medicare: A Review of What Works and What Doesn't," research report, *AARP Public Policy Institute,* 2008, 1-91.

The FFS is Medicare's most recent attempt to curb expenditures. Medicare policy makers created a fee schedule establishing a fixed price for more than 7,000 physician services.[56] While the fee schedule is similar to IPPS in its ability to set payment rates for any service offered to Medicare beneficiaries, it is also uniquely different. Unlike IPPS which updates its reimbursement rates based on numerous factors including the inflation rate for medical services, payment amounts for the physician fee schedule are updated annually to reflect a set expenditure limit put into place by Medicare, i.e., if total spending on physician services exceeds the expenditure limit, reimbursement rates are lowered for the following year.[57]

The first FFS enacted by Medicare was referred to as the resource-based, relative-value scale (RBRVS) fee schedule. This system was designed to make physician reimbursement rates more representative of the resources used to provide a given service to Medicare beneficiaries. Rates were based on four factors: (1) the increase in the number of beneficiaries enrolled in Medicare Part B; (2) growth in the cost of providing services; (3) change in law or regulation; and (4) the average increase in volume and intensity using a five-year historical moving average.[58] While the RBRVS fee schedule was successful in decreasing the volume and intensity of services, it ultimately failed due to the fourth factor. With the volume and intensity of services declining each year—on average 0.7 percent between 1991 and 1998—expenditure target limits began to decrease to an "unacceptable" level.[59]

To remedy this problem, Medicare transitioned to a new system based on a sustainable growth rate (SGR) formula. This change was enacted by the Balanced Budget Act of 1997. While remarkably similar to its predecessor, the SGR formula accounted for real gross domestic

[56] Ibid.
[57] Mayes and Berenson.
[58] Ibid.
[59] Berenson, et al.

product per capita as opposed to the five-year historical moving average for the volume and intensity of services offered. Mayes and Berenson note that, "The GDP linkage was an attempt to determine how much volume growth in physician services society [could] afford."[60]

While the SGR formula was designed to control reimbursement rates for physicians, it failed as a cost-containment policy because of Congress' repeated actions to prevent large negative updates. For instance, while the SGR formula for 2011 calculated that physician payment rates needed to decrease by approximately 25 percent, Congress opted instead to "freeze" current payment rates for an additional 12 months.[61]

How do Physicians Respond to a Reduction in Payments?

The Medicare fee schedule drastically reduced the rates for many of the services performed by physicians. Naturally, this prompts research on the physicians' response. Focusing on select physician services that experienced reduced rates, the following studies attempt to examine how physicians responded post-implementation.

Utilizing Part B Medicare annual data for 1987 and 1989, Jose Escarce analyzes the effects of decreasing physician payments on the volume of service. He questions whether or not a decrease in physician payments resulted in an increased number of patients examined. While his study focuses on changes following the Omnibus Budget Reconciliation Act of 1987 (OBRA 87), he asserts that the changes that occurred in this system are similar to those that would occur under the FFS. OBRA 87 cut physician payment rates for 12 procedures identified by Medicare policy makers as being "overpriced." His research suggests that price cuts are not associated with an increase in the volume of services provided. Instead, Escarce finds that volume growth

[60] Mayes and Berenson.
[61] Hallen.

significantly decreases following a reduction in physician fees.[62] More specifically, he finds that a 1-percent decrease in fees is associated with a 0.09 percent decrease in the volume of services offered.[63] Building on Escarce's research, Thomas G. McGuire and Mark V. Pauly argue that it is not reasonable to assume that physicians respond to a reduction in reimbursements by increasing the volume and intensity of their services. They argue that physicians will increase the volume and intensity, i.e., the number of tests performed per patient of services that pay more, and decrease the volume and intensity of services that pay less.[64]

While the aforementioned studies find that the volume of physician services decreases following a decrease in prices, Xuan Nguyen and Frederick William Derrick find the opposite to be true. Using data comparable to those used by Escarce, they find that physicians increase the volume of their services following a decrease in prices. More specifically, they find that for "every dollar cut in their fees, physicians recoup approximately 40 cents by increasing volume."[65]

Utilizing the framework provided by McGuire and Pauly, Jack Hadley, and James D. Reschovsky use a data set comprised of respondents from a 2000-01 Community Tracking Study Physician Survey. This survey conducted telephone interviews with 12,406 physicians and questioned personal and practice characteristics. Excluding physicians with minimal Medicare involvement and an additional 262 physicians with missing information, their study provided data for 7,456 physicians. From their analysis, they conclude that a positive relationship exists between volume/intensity and prices, i.e., when the price for a service increases, volume and

[62] Jose J. Escarce, "Effects on Lower Surgical Fees on the Use of Physician Services under Medicare," *Journal of the American Medical Association* 302, no. 20 (2011): 2037-130.
[63] Ibid.
[64] Thomas G. McGuire and Mark V. Pauly, "Physician Response to Fee Changes with Multiple Payers," *Journal of Health Economics* 10, no. 4 (1991): 384-410.
[65] Nguyen Xuan and Frederick William Derrick, "Physician Behavioral Response to Medicare Price Reduction." *Health Services Research* 32, no. 3 (1997): 283-298.

intensity for that service increases as well. Their research also suggests that physicians seeking to increase revenue will be more likely to increase intensity as opposed to the volume of service. Lastly, they conclude that the level of physician services offered is highly sensitive to other factors outside Medicare, e.g., the number of people covered by private insurance, the generosity of private coverage, and the slowdown in the growth of non-elderly people's income.[66]

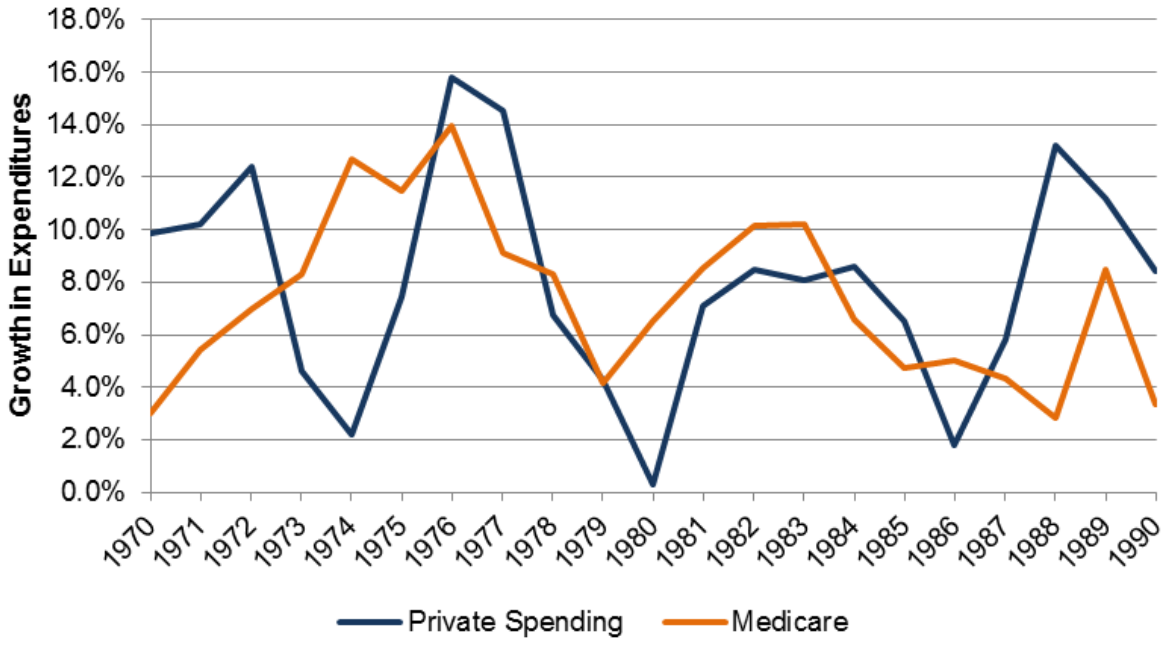
While not discussed above, Berenson et al., find that a multitude of government studies present evidence to support the notion that physicians increase both the volume and intensity of their services following a decrease in reimbursement rates. Given the previously discussed articles, it appears that the literature is inconclusive on this issue. But the literature does seem to suggest that physicians do respond in some manner to a decrease in prices, either by increasing volume or providing more services with higher reimbursement rates.

Is Cost Containment a Problem Exclusive to Medicare?

To add context to this discussion, it is very briefly worth considering whether private health insurance companies have historically been better able to manage the costs associated with providing health care to their beneficiaries. Perhaps the cost containment issues plaguing Medicare are not specific to the program itself but reflect the entire health insurance industry.

[66] Jack Hadley and James D. Reschovsky, "Medicare Fees and Physicians' Medicare Service Volume: Beneficiaries Treated and Services per Beneficiary," *International Journal of Health Care Finance and Economics* 6, no. 2 (2006): 131-50.

Figure 2: Change in Health Care Expenditures



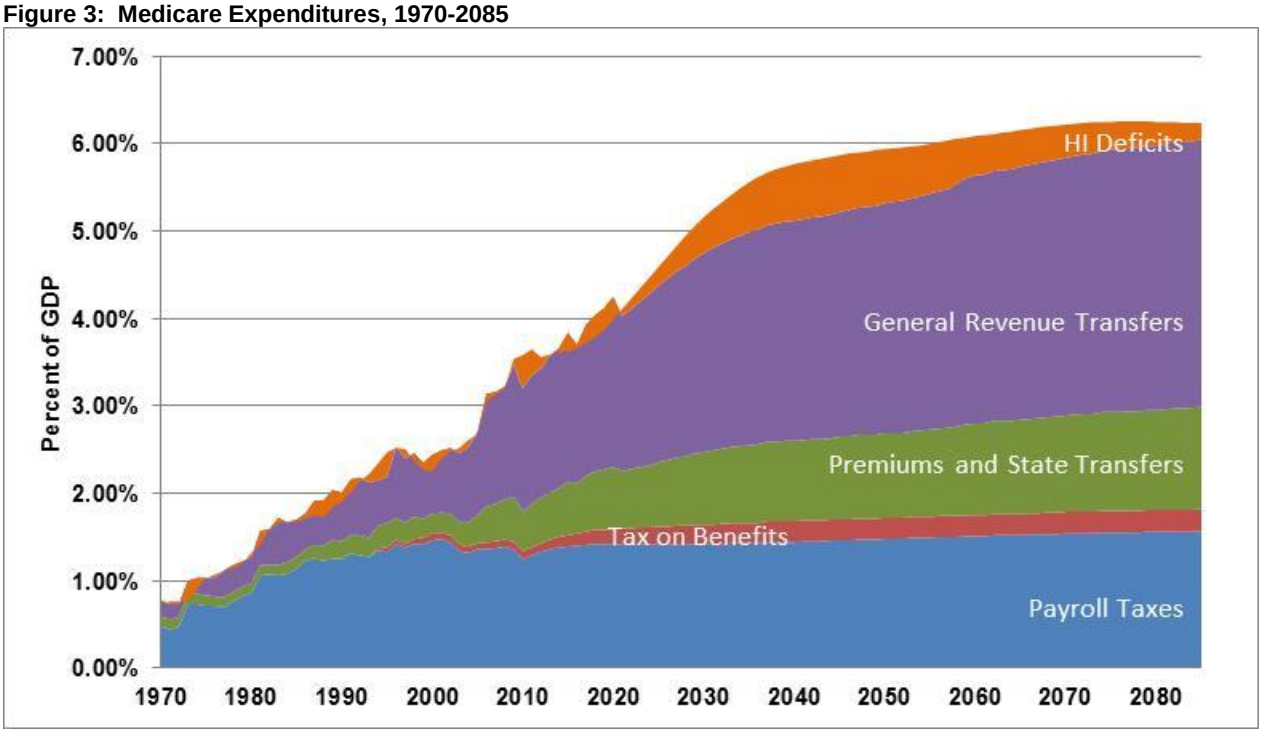
Source: Centers for Medicare & Medicaid Services, 2011

Figure 2 illustrates that between 1970 and 1990, neither Medicare nor private health insurance companies were successfully able to control health care expenditures. While this paper focuses specifically on the effects on Medicare pre and post-implementation of two types of reimbursement systems, an entire discussion could be dedicated to examining the differences in cost containment between Medicare and private health insurance companies and worthy of future research.

Conclusion

The Medicare program is in financial distress. As shown in Figure 3, the program will begin to spend significantly more than it is taking in from payroll taxes and Part B and D premiums. While the program is currently running a deficit, the deficit is expected to grow significantly larger.

Figure 3: Medicare Expenditures, 1970-2085



Source: Centers for Medicare and Medicaid Services, 2011

Unless significant changes are made, the Medicare Board of Trustees estimates that by 2024 funds will become inadequate to pay for full services offered. Policy makers will once again be called upon to make significant changes to the program to maintain its solvency.

The purpose of this paper is to provide insight into two significant changes made by policy makers in an attempt to curb the expenditures associated with hospital and physician payments. While IPPS and the FFS were able to curb expenditures associated with hospital and physician payments, respectively, these programs alone cannot ensure that Medicare will remain solvent into the future. The recent passage of the ACA has pushed back the insolvency date of the Medicare Trust Funds. But the Chief Actuary of CMS has expressed grave concern that the changes in the ACA are not likely to materialize and that the Medicare Trust Funds are in even

more severe financial distress than reported.[67] Herculean efforts have been made to pass previous reforms, but Sisyphean outcomes have been the end results. Further serious changes to Medicare to control spending are necessary to ensure the program's survival.

[67] See Centers for Medicare and Medicaid Services, "Illustrative Alternative Scenario," 2011, https://www.cms.gov/ReportsTrustFunds/05_alternativePartB.asp and Centers for Medicare and Medicaid Services, "Projected Medicare Expenditures under an Illustrative Scenario with Alternative Payment Updates to Medicare Providers," 2011, https://www.cms.gov/ReportsTrustFunds/Downloads/2011TRAlternativeScenario.pdf.