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THE MEDICARE PROSPECTIVE PAYMENT SYSTEM: IMPACT ON THE FRAIL ELDERLY AND AN ALTERNATIVE REIMBURSEMENT FORMULA

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INTRODUCTION

The U.S. health care system is in the midst of unprecedented change. New health care delivery systems and financing mechanisms are reshaping the health care arena. The thrust of these changes with respect to medical care for most Americans and their implications for the future are difficult issues to assess. In this article we discuss implementation of the Medicare Prospective Payment System (PPS) and the impact of its financial incentives. We specifically identify the ramifications of this cost containment effort on the frail elderly population and suggest a modification to PPS which would provide hospitals more equitable reimbursement for their care. Recent legislation in the state of Pennsylvania is presented illustrating the potential of implementing this modification.

I. HISTORICAL BACKGROUND

In the past twenty years, powerful economic and demographic forces have influenced health care costs in both the public and private sectors. Both increased demand and price inflation have contributed to steeply rising health care expenditures. In 1965, the passage of Medicare and Medicaid legislation insured equal access to high quality health care for

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the elderly and the poor.¹ These programs enabled a large segment of the population, who might otherwise not have received health care, to do so. At the same time, private industry further influenced the demand for health care as more comprehensive health insurance was provided to employees.² Widespread participation in group health plans enabled most employees and their families to have almost unlimited access to health care services. The growth of third party payers reduced the direct cost of health care to the consumer, thus encouraging greater demand of these services.

While increasing demand, Medicare legislation also introduced the concept of cost-based reimbursement. All reasonable costs would be reimbursed. Such arrangements provided little or no incentive for health care providers to limit expenditures. When the third party insurer paid all or almost all of the costs incurred, neither the consumer nor the health care provider needed to be cost conscious.

Coincident with increased demand, there has been a rapid growth in price inflation in the medical sector. Every year since 1965, inflation in medical care prices has exceeded the general rate of inflation for the economy as a whole.³ The reasons for this increase are in part explained by increased demand, but an additional factor has been the increase in intensity of care. Today, in contrast to 1965, hospitalization encompasses more ancillary services, more tests using more expensive and sophisticated equipment, and more labor and supplies.

1. Health Insurance for the Aged Act, Pub. L. No. 89-97, tit. 1, 79 Stat. 290 (1965) (codified as amended at 42 U.S.C. §§ 1395 to 1396q (1982 & Supp. IV 1986)).

2. D. CHOLLET, EMPLOYER-PROVIDED HEALTH BENEFITS, COVERAGE, PROVISIONS AND POLICY ISSUES, 3 (1984).

3. Ratios by year for Consumer Price Index (CPI)/Medical Care % annual increase are:

% Annual increase		% Annual increase		% Annual increase	
YEAR	CPI/Medical	YEAR	CPI/Medical	YEAR	CPI/Medical
1965	1.7% 9.2%	1966	2.9% 10.4%	1967	2.9% 10.8%
1968	4.2% 13.4%	1969	5.4% 12.8%	1970	5.9% 13.4%
1971	4.3% 11.5%	1972	3.3% 12.3%	1973	6.2% 10.3%
1974	11.0% 12.8%	1975	9.1% 12.1%	1976	5.8% 12.8%
1977	6.5% 13.1%	1978	7.7% 11.9%	1979	11.3% 13.5%
1980	13.5% 15.6%	1981	10.4% 15.7%	1982	6.1% 12.8%
1983	3.2% 10.4%	1984	4.3% 9.2%	1985	3.6% 8.9%

CPI annual % increase source: Bureau of Labor Statistics Historical Tables *Annual Handbook of Labor Statistics*, 1986; Health expenditures annual % change source: National Health Care Expenditures, 5 *Health Care Fin. Rev.* 56 (Winter 1983) and 8 *Health Care Fin. Rev.* 102 (Winter 1986).

America is also growing older. The number of persons who are 65 and older has grown and will continue to grow at staggering rates. This is one of the most significant facts affecting our present and future. In 1900, one in 25 Americans was age 65 and older. By 1984, one in eight was at least 65 years of age. Of the approximately 28 million Americans who were then at least 65 years of age, 16.6 million were age 65 to 74 years, 8.8 million were 75 to 84 years old and 2.6 million were over 85 years. This "older" population grew at twice the rate of the rest of the population in the last two decades. The "very old" population, or those 85 and over, is also growing rapidly and is expected to increase seven times by the year 2050.⁴

Today, chronic conditions are the most prevalent health problem for the elderly. More than four out of five persons, who are 65 and over, have at least one chronic condition and often have multiple problems. In 1982, the leading chronic conditions among the elderly were arthritis, hypertensive disease, hearing impairments and heart conditions. Digestive conditions, genitourinary conditions and injuries were the leading causes of hospitalization among the elderly. The types of conditions experienced by older persons vary by sex and race. Older men often experience acute illnesses that are life threatening, while older women usually have chronic illnesses which cause physical limitations. Race discrimination also exists. In general, the health of aging blacks is poorer than that of aging whites.

Advanced age, stroke, confusion and falls have been cited as the major reasons for prolonged hospital stays among the elderly. Heart disease, cancer, and stroke account for over three-quarters of all deaths. They also account for 40 percent of hospital days and 50 percent of all disability days.⁵ Since the 1950s, heart disease has remained the major cause of death for the elderly.⁶ The aging of America has far

4. U.S. Dep't of Health & Hum. Serv., Pub. No. PF 3377-1085, *Ag-ing America: Trends and Projections* 5 (1984).

5. Maquire, Taylor, & Stout, *Elderly Patients in Acute Medical Wards: Factors Predicting Length of Stay in Hospital*, 292 HOSP. TOPICS 1251-53 (1986).

6. Dep't Health & Hum. Serv., *supra* note 4; Dunn, *Arteriosclerotic Heart Disease in the Elderly*, 4 *Cardiology Clinics* 253-61 (1986); Kannel & Gordon, *Evaluation of Cardiovascular Risk in the Elderly: The Framingham Study*, 54 BULL. N.Y. ACAD. MED. 573-91 (1978); Thoud, *Coronary Heart Disease in the Aged*, 2 BRIT. MED. J. 1089-93 (1965).

reaching implications for increasing health care costs because of the higher probability of health problems and higher demand for health and social services.⁷

II. REIMBURSEMENT REFORM

Since the late 1960's, efforts by both the federal government and third party payers have resulted in a variety of approaches to reduce escalating health care costs. Among the most important of these efforts have been proposals to introduce competition into the health care market and legislation to reform the ways in which health care providers are reimbursed by third party payers. Pro-competition proposals seek to provide incentives to the consumer to become more cost conscious with respect to health care consumption. For example, legislation has been introduced requiring employers to offer a choice of health plans with significant variation in coverage and greater cost sharing requirements.⁸ Today, many employers have initiated multiple health insurance options as a mechanism for encouraging greater cost sharing by the consumer and greater awareness of the cost of health care resource consumption.

Because hospitalization insurance coverage has traditionally been the most complete, much of the inflationary impact of third party reimbursement practices has been observed in increased hospital charges for inpatient care. Reimbursement reform to regulate hospital charges has been effective for several states and the federal government. Regulatory cost containment efforts have included state programs for disclosure and voluntary or mandatory review of hospital charges.⁹

A. *Medicare Prospective Payment Legislation:*

In 1983, Congress enacted legislation establishing the Medicare Prospective Payment System which significantly altered previous federal payment mechanisms.¹⁰ The conven-

7. Victor & Vetter, *Poverty, Disability and Use of Services by the Elderly: Analysis of the 1980 General Household Survey*, 22 SOC. SCI. & MED. 1087-91 (1986); Gifford, Furberg, Ostfield, Perry, Schneper, Roccella & Bowler, *A Statement on Hypertension in the Elderly*, 256 J. A.M.A. 70-74 (1986).

8. See, e.g., H.R. 4170, 98th Cong., 2d Sess. (1984); H.R. 5740, 96th Cong. 2d Sess. (1980); S.433, 96th Cong., 2d Sess. (1980).

9. Esposito, *Abstracts of State Legislated Hospital Cost-Containment Programs*, 4 HEALTH CARE FIN. REV. 129-158 (Winter 1982).

10. Social Security Amendments of 1983, Pub. L. 98-21, 97 Stat. 65 (1983).

tional practice of retroactive reimbursement of hospital costs for patient care was replaced with a prospective payment plan for Medicare patients nationwide. In an attempt to encourage a more efficient level of operation within the health care delivery system, financial incentives were thus changed from a retroactive cost-based system to a prospective payment system. With a prospective system, hospitals would be at financial risk if resource use exceeded the payment level.

The new system for prospective payment of Medicare patients provided that most hospitals in the United States would be reimbursed a fixed fee for each Medicare patient. The amount of the payment would depend primarily on the disease group to which the patient was assigned. The law initially established 20 sets of rates for 467 Diagnostic Related Groups (DRGs).¹¹ Urban and rural rates were set for each of nine geographic regions as well as at the national level. Use of DRG national payment rates has been phased in over five years, so that by 1988 hospitals will be reimbursed using a completely national DRG system.

DRGs are a patient classification system based on groups of patients who require similar regimens of care and therefore are expected to consume similar patterns of hospital resources. Patients are grouped by discharge diagnosis, secondary diagnoses, operating room procedures, age and sometimes disposition. Hospitals will be paid on a per case basis with each hospital's reimbursement equal to the number of patients discharged in each DRG multiplied by the reimbursement rate for that DRG.

The Medicare Prospective Payment system has set rates for each DRG using essentially an average cost formula. The PPS legislation is designed to reduce inefficiency and encourage cost-effective care. How successful it will be in achieving cost savings depends on how effective a DRG average cost payment will be in providing hospitals with the proper signals to encourage efficiency. Certainly hospitals with costs below the payment rate will not be given strong incentives to identify and control institutional inefficiencies. Although there may be some effort to decrease costs, as this provides "money in their pockets," this motivation for reducing costs may not be significant. For those hospitals with costs above the average, there are incentives to provide treatment in a more efficient manner. This may result in these hospitals

11. See 48 Fed. Reg. 39, 752 (1983) (to be codified at 42 C.F.R. 405, 409, 489).

not only seeking cost efficient methods of production, but may also result in some less desirable impacts such as "skimming" low-cost patients and "dumping" or refusing to admit high-cost patients. In particular, the frail elderly are prime targets for practices which raise difficult legal and ethical questions. Further, an average cost payment may not be an equitable payment if those hospitals operating at costs above the average have "justifiable" costs (e.g. advanced technology such as Magnetic Resonance Imaging or "MRI") which should not be reduced, for whatever reason, in the interest of efficiency.

The area of payment for advanced technology is particularly troublesome under the DRGs. There are those who fear that prospective payment rates will decrease the acquisition and utilization of advanced technology.¹² Many new technologies that may be safer and more effective, such as MRIs and Low Osmolar Contrast dye, were not available or accepted practice at the time the current payment rates were calculated. Further, the periodic recalibration of payment rates creates a lag between accepted medical practice and adjustment of DRG payments. Therefore, advanced time saving technologies may not be affordable under the PPS.

B. *The Medicare Prospective Payment System: Impact of Financial Incentives*

Efficiency in the production of hospital services is very difficult to assess. In the health care sector, the difficulties inherent in measuring the output of hospitals are not totally solved by the DRG patient classification scheme. For example, variations in severity of illness and quality of care are not differentiated in the DRG grouping of patients. Therefore, the observable cost differences among hospitals for a single DRG are not good indicators of efficiency differences. To base a payment formula on the average cost observed in a region (or eventually across the nation accounting for wage differences) may be a crude mechanism for encouraging efficiency and may in some instances create the wrong incentives.

When Medicare reimbursements are inadequate to cover costs, some hospitals have shifted charges to private, charge-based payers in order to compensate for revenue shortfalls.

12. Anderson & Steinberg, *To Buy or Not to Buy: Technology Acquisition Under Prospective Payment*, 311 NEW ENG. J. MED. 182-85 (July 9, 1984).

This charge shifting can produce inefficiencies and inequities. Charge shifting represents a cross-subsidy with one payer subsidizing the benefits of another payer. It is questionable why a particular group of payers should bear this burden.

As a result of hospitals' efforts to contain costs, changes in clinical practice have occurred. More emphasis is being placed on outpatient services, preadmission testing, same-day surgery and follow-up care after discharge. There certainly are not as many frills or fringes as in the past.¹³ While it is expected that this type of response decreases total health care costs, there is also evidence that the frail, elderly population is at risk for compromised quality of care, difficulty in accessing care and critical decisions with respect to the allocation of resources. These patients may be discharged from the hospital sicker and quicker with more unresolved health problems.¹⁴ A frequently encountered situation pertains to decisions regarding resuscitation and the application of advanced life-support systems, particularly with the elderly. "The primary care physician is frequently caught between conflicts of potential benefit to the individual patient and cost to society to provide that benefit."¹⁵

The current prospective payment system further promotes discrimination against "very old" Medicare beneficiaries. The new system does not take into account that the average length of hospital stay increases with age, a factor which reflects increased cost.¹⁶ In addition, the PPS does not recognize multiple clinical problems or severity of illness. Since the "oldest" elderly often exhibit serious, multiple medical problems, hospital administrators may view them as undesirable revenue losers.

Is the pressure from administrators, to practice more efficiently, forcing practitioners to make unethical decisions about care? Will the incentives created by the PPS lead hospitals to turn away "unprofitable" patients, such as the frail, elderly? If admitted, will they receive treatment that is "second class?" Will expensive, new technology be used only on those patients thought to be "salvable?" These issues of eth-

13. *Prospective Plan Needs Public Awareness*, 57 HOSP. 19 (May 16, 1983).

14. Newcomer, Wood & Sankar, *Medicare Prospective Payment: Anticipating Effect on Hospitals, Other Community Agencies and Families*, 10 J. HEALTH POL., POL'Y & LAW 275-82 (1985).

15. Jahnigan & Schrier, *The Doctor/Patient Relationship in Geriatric Care*, 2 CLINICS IN GERIATRIC MED. 457, 459 (1986).

16. HCFA Annual Report to Congress, (1984).

ics, quality and legality, regarding care under the new system, have been recognized by the Health Care Financing Administration as potential undesirable outcomes.¹⁷

C. *Providers' Response to Medicare Prospective Payment*

While the full effect of the new Prospective Payment System (PPS) will not be felt for years, its incentives have already begun to change the ways in which hospitals operate. One way hospitals have responded to the new Medicare reimbursement policy has been the close monitoring of length of stay. Daily reports from administration tell physicians how many days of a hospitalization remain for patients. Care is to be planned appropriately. Services which have been traditionally subsidized and important in the care of the elderly, such as social services, nutritional counselling and occupational therapy have been cut back.

For some elderly, early discharge may be appropriate. Adequate discharge planning requires the assessing of the patient's needs and resources, counselling the patient and his family about decision making and connecting them with the appropriate community resources. Patient involvement in the decision making is especially important.

However, the shift to earlier discharges can also result in more severely ill patients being discharged prematurely into the community. This results in greater burden on nursing homes, home health agencies, rehabilitation centers and families. Patients requiring skilled nursing care are often older and have multiple chronic illnesses. Early discharge of patients with intense nursing care needs, from acute care hospitals, has been cited as the reason for the limited availability of skilled-care beds in nursing homes.¹⁸

In addition to a lack of available beds, nursing homes have turned patients away because of a lack of adequate resources or services to meet the patients' needs. Hospitals have traditionally provided "high tech" care, while nursing homes have provided "high touch" care. PPS is changing this situation. It is not unusual for a patient to be discharged to their home or to a skilled nursing facility. There has been little, if any, time to prepare personnel practicing in nursing homes or in home health agencies to care for these specialized

17. *Id.*

18. Meiners & Coffey, *Hospital DRGs and the Need for Long Term Care Services: An Empirical Analysis*, 20 HEALTH SERVICES RES. 359-83 (1985).

needs. There is also less time for health professionals to counsel the patient and family. Such provider responses have serious implications for the quality of care delivered to the aged.

III. MAINTAINING QUALITY IN A COST-CONSCIOUS REIMBURSEMENT ENVIRONMENT

There are numerous examples of business, labor, and political interests organizing coalitions in states where the problems of rising health care costs, charge shifting, quality care and access have reached critical proportions. Pennsylvania has recently passed legislation creating a Health Care Cost Containment Council. An innovative feature of this legislation is the measuring of provider service effectiveness, which is defined by the Act as "the effectiveness of services rendered by a provider, determined by measurement of medical outcome of patients *grouped by severity* receiving those services."¹⁹

This data provides information to individual providers regarding the incidence of medical and surgical procedures in the population, mortality and morbidity rates, infection rates, readmission rates, and the rate of incidence of post discharge professional care for all specified diagnoses according to their severity. These rates of occurrence, when coupled with data on increases in severity throughout the course of hospitalization, are indicative of the care provided. The comparative data, controlling for severity of illness, allows the Council to evaluate who can deliver quality care at less cost.

Peer Review Organizations (PROs) have also recognized the value of evaluating the quality of care through severity measures. In a recent study conducted by Ernst and Whinney it was found that PROs generally believed the refinement of quality screens coupled with severity measures would enhance the effectiveness of the organization in screening for problems.²⁰ A severity of illness system would differentiate between cases failing the quality screens due to the level of illness and those cases indicating poor quality of care.

19. Health Care Cost Containment Act, 1986 PA. LAWS 89 (emphasis added).

20. Press release by C. Davis, *Ernst and Whinney Survey of PROs Reveals New Insights Into Quality of Care Measures* (1987).

A. *Suggestions for an Alternative Payment Formula*

The severity of illness adjustment which is used to identify specific quality differences among providers can be applied to create equitable reimbursement for legitimate cost differences among hospitals. Given the fact that the DRG patient classification scheme does not fully account for the differences in case mix or the increasing severity of illnesses in the elderly, if the excess costs for treating these patients are justifiable, an irrational distribution of payments is occurring and an incentive to compromise the care of this population is present. An adjustment of the DRG average for severity of illness would provide hospitals with a level of payment appropriate for the resources required to treat these patients. It is clear that prospective payment will cause hospital providers to alter their decisions about the allocation of resources in the production of hospital services, but reimbursement rates need not be applied in an arbitrary manner. An average DRG rate might overpay those hospitals treating the less severely ill and underpay those hospitals which treat a disproportionate number of more severely ill patients. The distribution of severely ill patients is not evenly distributed according to studies measuring the severity of illness within DRGs across hospitals.²¹

Under the PPS, PROs are mandated to review findings of inappropriate or substandard care, but this review function would be unnecessary if financial disincentives were corrected. A modification of the current reimbursement formula would reduce the inappropriate over or underfinancing of hospital services and provide consistent incentives to hospitals to appropriately treat the frail elderly population.

TABLE I shows the impact of prospective payment on total hospital operating costs using the current PPS formula versus the suggested formula based on payments for severity

21. Horn, Buckley, Sharkey, Chambers, Horn & Schramm, 313 *NEW ENG. J. MED.* 20-4 (July 4, 1985).

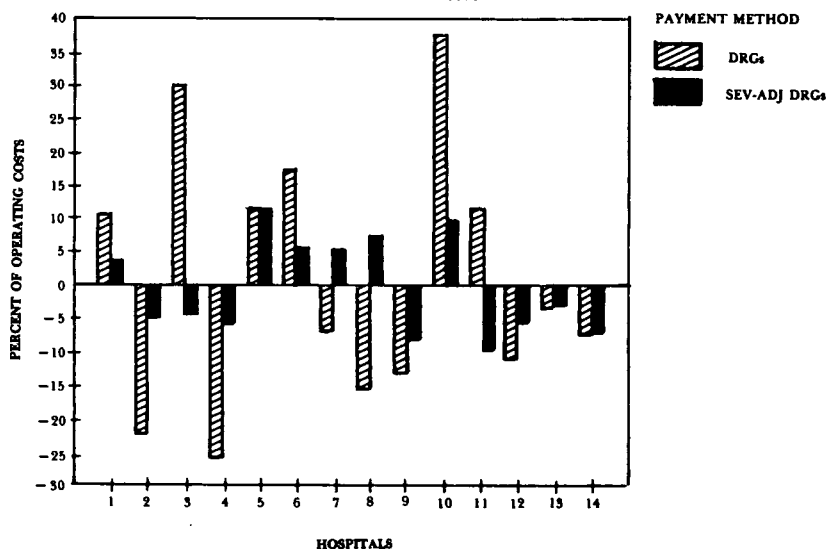
adjusted DRGs.²² Financial and discharge data, including severity of illness scores, were collected for all patient discharges at 14 teaching and non-teaching hospitals across the United States for fiscal year 1984. The hospitals in the study represented both urban and community institutions. Reimbursement for Medicare patients was computed using the current DRG reimbursement policy. In addition, payment rates were calculated to simulate a payment system which sets four specific rates for each level of severity within each DRG. If the severity of illnesses among patients was evenly distributed across hospitals we would expect very little difference between the alternative payment systems as the actual costs would average out at each hospital and the current DRG payment rates would be appropriate. If the severity of illnesses are not randomly distributed, however, the two formulae produce a different distribution of payments. That is, the severity adjusted DRG payments should be lower for those hospitals with lower patient severity levels and higher for those hospitals which treat a patient population of greater severity.

A comparison of the alternate payment rates shows that

22.

TABLE I

IMPACT ON PROSPECTIVE PAYMENT

OVERPAYMENTS AND UNDERPAYMENTS AS A
PERCENT OF TOTAL OPERATING COSTS

Center for Hospital Finance & Management, Johns Hopkins Medical Institution, Baltimore, Md. Research funded by Health Care Financing Administration Grant No. 18-P-98378-01.

the current formula overpays Hospitals 1, 3, 5, 6, 10 and 11, and underpays Hospitals 2, 4, 7, 8, 9 and 12-14. When an adjustment for severity is added to DRGs the following occurs:

(1) Of the six hospitals previously overpaid, four hospitals (1, 5, 6, and 10) are overpaid, but at a lesser rate; two hospitals (3 and 11) are underpaid, indicating their "wind-fall" was due to treating less severely ill populations.

(2) Of the eight hospitals previously underpaid, six hospitals (2, 4, 9, and 12-14) continue to be underpaid but at lesser amounts; i.e. their shortfall is significantly reduced; and two hospitals (7 and 8) are now overpaid.

This last phenomenon is a good example of underpaying the wrong hospitals. These providers were not only treating a more seriously ill population, but were also providing care in a cost-efficient manner.

It is useful to point out the characteristics of Hospital 7 which are illustrative of the problems providers face in the treatment of the frail elderly. The Medicare population at this hospital represents over 25 percent of the total caseload treated. If this population continues to be a revenue loser, as it is under the current DRG average cost formula, the ethical and equitable questions of access for these patients persist. If an alternative payment formula were implemented, the hospital reimbursement would be adjusted to cover the higher costs of treating these patients and the perverse incentives go away.

CONCLUSION

A prospective payment system provides incentives for hospitals to be more cost conscious in the treatment of patients. However, such a system should be equitable so that hospitals will be reimbursed adequately, but not excessively, for the care provided. The cost-containment goals of the Medicare Prospective Payment System require that attention be given to the issues of quality of care and access. The PPS was designed to provide incentives for the efficient provision of hospital inpatient health care. PPS was not intended, however, to replace quality objectives with financial objectives, nor was it intended to reduce the number of Medicare patients accepted by hospitals.

These issues are particularly important to an increasingly large segment of the American population, the frail elderly. A potential gap exists in the continuity of care provided to

this group. Shorter lengths of stay raise ethical and legal issues with respect to the potential for compromises in the quality of care, the accessibility of care (both with respect to availability and personal costs), premature discharge, the increased responsibility of nursing home personnel (or transfer of responsibility to nursing homes, families, etc.), and the refusal of admissions to hospitals and/or nursing homes. We have shown how a severity of illness adjustment to the DRG average cost reimbursement formula would reduce or remove some of the negative incentives hospitals currently are facing.

There are obvious dilemmas associated with cutting costs. Those who implement medical cost containment policies will ultimately have to face the painful choice of cutting costs or jeopardizing quality. From the standpoint of society, which entity ultimately makes these decisions raises further ethical and legal considerations. Given the current direction of Medicare policy, what kind of financial protection will Medicare beneficiaries have twenty years from today? How will the increasing number of elderly, and especially frail elderly, be cared for? Who will finance acute and sub-acute care for these elderly? What kind of access will they have to services? These are real challenges for the designers of Medicare financial policy as they seek to contain rising medical costs while ensuring the viability of the program in the future.

