

## Changing Methods of Health Care Financing: The Impact of DRGs on Nuclear Medicine

On Oct. 1, 1983, 1500 hospitals representing 30% of the nation's acute care beds came under the prospective pricing system (PPS) for hospital services. An additional 3700 hospitals will come under the system by September 1984. This follows legislation passed in April 1983 and final regulations published in January 1984 that were designed to radically restructure the payment system for Medicare inpatient services in a way that will have significant long-term consequences for patient care in this country. This commentary will provide an overview of the legislation and regulations, point out the major features and reasoning behind them, and explain how they will affect the environment in which nuclear medicine is currently practiced.

Before describing the system, it is important to understand, at least from the Federal government's perspective, why radical changes were considered necessary.

**1. What are the relevant data?** In 1965 health care was 6% of the gross national product. In 1982 it was 10.5%—an enormous shift for such a broadly based index and indicative of a major change in societal priorities.

At the same time this change was taking place, medical manpower substantially increased. The number of physicians grew more rapidly in the 1970s than in previous decades, and even more so when compared to the population as a whole. In 1966 there were 144 physicians per 100,000 population; by 1980 that number had grown *by over 40%* to 205 physicians per 100,000 population. The Graduate Medical Education National Advisory Committee has predicted an oversupply in the US of 70,000 physicians in 1990 and 140,000 physicians in the year 2000. The impact of that perceived oversupply has already taken place. For the first time in many years, medical school enrollment was down in 1983. As the number of physicians was increasing, so too were the numbers and types of allied-health personnel. In brief, there have been enormous increases in the dollars spent on health care, the suppliers of services—both in physician manpower and numbers and types of allied health professionals—and the kinds of services provided.

**2. How does the current system work?** It is helpful to understand the system of incentives that influences the different participants in the health care system. The major participants in the system are:

- (a) the patient;
- (b) the hospital;
- (c) the physician;
- (d) the fiscal intermediaries or carriers: "the third party payers" (those that take the premium dollars or government contributions and pay the claims or handle the reimbursement mechanism, i.e., Blue Cross-Blue Shield, Medicare, etc.); and
- (e) the premium payers or buyers, i.e., the government (through Medicare or Medicaid), employers, or employee groups.

To understand the incentives fully, it is important to realize that the bulk of care is *not* paid by the patient but by an employer or the government through some kind of carrier.

In 1981 10.8% of hospital care was paid by patients directly, and 89.2% by insurance, the government, or other funding mechanisms. In view of these data, a subjective review of the incentives can follow:

- (a) *The patient* entering the hospital has one all-consuming motivation: to get well. Naturally, patients are scared, in pain, anxious, and, as noted above, usually not paying the bulk of the bill.

They want the best and most complete care they can get. Because they are only paying a relatively small amount, money is not the primary concern.

(b) *The hospital*, whose bills are paid primarily by third parties or the government, has no incentive to control costs. Hospitals have traditionally been paid either on a fee-for-service basis, which includes cost recapture, or on a cost pass-through system such as Medicare. In a few health maintenance organization (HMO) programs, where the money comes in on a capitation base (so much per enrollee regardless of the service), there may be incentives for hospitals to control the use of resources because any money not spent in this way is available for other uses (including profits).

Since capital costs are passed through to Medicare and are readily incorporated into hospital charges, hospitals have, in the past, had ready access to capital.

In addition, hospitals depend in large part on local doctors to keep beds filled. It is evident that well-kept new facilities and state-of-the-art equipment attract these physicians and their patients.

(c) *Physicians* are trained to care for people, which is a major factor in their behavior. Another incentive to be considered is that physicians—as well as hospitals—are subject to professional liability. They are encouraged by their training to use all resources available to achieve a successful outcome: a healthy patient. At the same time, “defensive medicine,” which has affected both physicians and hospitals, also encourages the use of all available resources. Physicians who charge on a fee-for-service basis and whose income is directly proportional to their effort and productivity also have an incentive to do more rather than less. This may become more significant as the availability of physician manpower expands more rapidly than the population base. Now there are more physicians to do the work than there is work to be done.

(d) *Fiscal intermediaries*, to the extent that they are able to pass their costs through to the purchaser, have an incentive to maximize cash flow. This enables them to “play the float” (e.g., earn money on paid premiums against which claims have not been filed). Programs on a retention basis (i.e., in which the intermediary charges an administrative fee but does not retain unspent premium dollars) have an incentive to maximize the fee by maximizing the amount of premium. The more money passing through their hands at a fixed percentage for administration means more money for the administrative service. The only limit has been market demand.

(e) *Premium payers* such as government and business have been paying the bill or more accurately have been passing through the costs to their taxpayers or customers. Spreading the risk in this way has been relatively painless until recent years. The Business Council on Health, local business consortia, and other business groups have been articulating their objection to this “last unmanaged cost of doing business.” Federal expenditures for personal health care have been growing rapidly since the inception of Medicare in 1965—increasing from \$3.6 billion in 1965 to over \$84 billion in 1982.

Medicare costs, which are the target of the new PPS, have become ripe for cutting, and hospitals in particular because 67% of Medicare expenses are now allocated to hospital inpatient care. Hospital inpatient services, traditionally characterized by cost-based reimbursement, have displayed several inherent problems:

- insufficient incentives to control costs;
- lack of reward for efficiency;
- costly intrusive regulatory apparatus, which has developed over the years; and,
- unacceptable increases in hospital expenditures.

Physician services are the second greatest expense (around 20%), and will probably be the government’s next target. The government is finding it increasingly difficult to finance Medicare and Medicaid services and is looking for ways to limit the costs, or at least bring them under control. Surveys show that a strong health and hospitalization insurance program is the fringe benefit most valued by employees. Yet, cutbacks in health coverage under fringe benefit programs are beginning to occur. Increased deductibles and copayments are being required in new union contracts such as in the steel industry. In summary, until recently, all incentives moved in one direction: to do more and more, without worrying about costs.

Perhaps the most important reason for change is the solvency of the Hospital Insurance Trust Fund, which pays for Medicare. In 1983 the Fund was saved from insolvency through interfund borrowing. The Tax Equity and Fiscal Responsibility Act (TEFRA) of 1982 put the deadline for bankruptcy off until about 1987. The adoption of the Social Security Amendments Act of 1983 pushed the deadline farther away again. But even with this Act, which incorporates the PPS, the

Fund is still optimistically projected by the government to be bankrupt by the early 1990s. Therefore, we are certain to face more changes in the future.

**3. Medicare:** Because Medicare regulations are responsible for implementing the change in incentives, it is important to understand how Medicare operates and to bear in mind that Medicare now pays for almost 40% of all hospital costs. For the sake of brevity, I will omit many conditions, exclusions, and exemptions. Anyone interested in a more detailed analysis is welcome to contact me or read the Medicare regulations in 42 CFR 405 at your local library or in your hospital administrator's office.

Fundamentally, Medicare payments cover two areas: Part A and Part B. Part A pays the reasonable cost of hospital services to patients. Part B pays physicians on a reasonable charge basis for their services to patients. In nuclear medicine, for example, Part A might include supplies, nonphysician personnel, physician services to a hospital, e.g., committee service, managerial responsibilities, etc. The theory is that hospitals prepare a cost report and are paid by Medicare through its intermediary.

In the past, to allow individual institutions to maximize their cash flow (e.g., to avoid submitting detailed paperwork for every Medicare patient after a hospital stay), some calculations were determined on an average cost per discharge. Payments were made on a regular basis, based on the average nationwide cost per discharge (e.g., a hospital could bill Medicare for 20 patients who were treated for a variety of disorders and receive payment for 20 times the average cost per case). But certain hospitals handled more complex types of cases and provided more varied services so their costs were regularly higher than the national average. As a result, data began to be gathered by the type of discharge in order to allow for the case mix. This method became the precursor for the diagnosis related group (DRG) approach. About the same time, Medicare gave a waiver to the state of New Jersey to test a reimbursement technique using DRGs for all payers, both private and public. This system started about four years ago but the data concerning its impact are now only beginning to come forward.

### **Moves to Cut Federal Expenditures**

As Medicare costs spiraled upward and as talk of bankruptcy began, the government moved to cut its expenditures by setting a limit on the reimbursement rate for increased costs. In essence hospitals were told, "We don't care what your real increased costs are, we are only going to pay for a certain percentage increase over a base year." The rate was a "target amount" or really "less than the cost-reimbursement" system, which gave some incentives to institutions to control their costs or keep them within the target limits. It also gave hospitals anxiety attacks acute enough to cause them to look for ways to restructure the incentives of the health-care system. One idea was to motivate the other participants in the system to contain costs.

**TEFRA:** The cap "target rate" and other changes were implemented by TEFRA in 1982 and the accompanying regulations helped clarify some of the earlier overlap between Parts A and B. The new law and regulations clarified the distinction between Part B (physicians services to *patients*) and Part A (particularly, physician services to *hospitals*). Pathologists were particularly hard hit: now they are permitted to bill for their services under Part B only in very limited circumstances. A somewhat similar, but less onerous, restriction was placed on radiologists. The impact will certainly be felt by those nuclear medicine physicians who perform RIA procedures. In short, the physician will be unable to bill under Part B for RIA procedures that fall within the normal range and otherwise do not meet the regulatory requirements.

Physicians who provide supervisory or administrative time to the hospital may also be paid by the hospital for their time. The hospital will be reimbursed for the Medicare share based on a "reasonable compensation equivalent" determined by the Health Care Financing Administration. If a physician is compensated under Part A and the hospital seeks reimbursement, it is now necessary that the hospital or the physician have an agreement in writing and that careful records are kept to satisfy the auditors that the physician's time has been spent on behalf of the hospital.

In addition, the TEFRA regulations state that all nonphysician services offered by an outside provider to an inpatient will be reimbursed only as a hospital service under Part A. This provision has a significant impact on those leased departments frequently incorporating nuclear medicine, which have been billing for both the physician and the technical component under Part B. Combined billing by the hospital for physician services to inpatients and outpatients has also been eliminated. A separate billing arrangement is permitted.

As part of the TEFRA regulations, the Dept. of Health and Human Services was directed to develop a PPS and the "DRG" approach was proposed. The perception of the hospital industry was that the use of a "cap" on increases for average cost per discharge boded ill for the future. It led the hospital industry to give support to a proposal establishing a DRG system. What then is this system?

The PPS as enacted covers all hospitals with the following exceptions: psychiatric hospitals; children's hospitals; long-term care hospitals, where average length of stay for all inpatients is more than 25 days, during the most recent six-month reporting period; rehabilitation hospitals; hospitals in waived states, which I will discuss later; hospitals outside of the 50 states and Washington, DC; and wings and floors of participating hospitals that meet the specified requirements for rehabilitation and psychiatric units.

At the bottom of the PPS and the basis for its payment is the DRG system. Developed by Yale researchers in the 1970s, it is simply a way of classifying patients on the basis of diagnosis. DRGs basically are grouped into 23 major diagnostic categories based on organ systems, and further broken down into 467 distinct groupings each of which is said to be "medically meaningful." That is, patients in the same DRG category can be expected to evoke a set of clinical responses that will, on a statistical average, result in approximately equal use of hospital resources.

As a practical matter, DRGs will be assigned on the basis of five criteria: patient diagnosis, including complications and co-morbidities; treatment procedures; the patient's age; sex; and discharge status. However, not all criteria will be used in every case.

Hospitals will receive reimbursement for Medicare patients on the basis of DRG assignment as opposed to the traditional method of payment based on actual costs incurred during care. Although actual reimbursement formulas become quite complex, payment is generally a function of two factors: the DRG weight and the dollar rate.

The DRG weight is an index number that represents the relative hospital resources that would be used on an average for furnishing inpatient services. For example, one of the lowest DRGs is treatment of a concussion for an individual 0-17 years old. Obviously in the Medicare program, this would apply only to disabled children. The two highest DRG weights are 6.85 (cardiac valve procedure) and 6.86 (treatment of patient with extensive burns). These weights apply equally to all hospitals in the system.

The dollar rate is also, at least during the transition years, a function of two factors: the federally established dollar rate, and a hospital's specific rate, which is based on the hospital's own cost experience.

The law calls for a transition period to give hospitals a chance to adjust to the new pricing system. There will be a three-year phase in depending on when a hospital enters the system and its reporting periods. To help hospitals adjust, during the first year 75% of the dollar rate will be based on the hospital's specific cost experience and 25% on the federally established rate. During the second year, the hospital's own contribution decreases to 50% and the federal proportion increases to 50%. In the third year, the hospital's contribution declines to 25%, and the federal proportion increases to 75%, and, finally, in the fourth year, the system will be fully phased in with 100% of the dollar rate being established on a federal level with distinctions only for urban or rural areas.

As opposed to the DRG weight, which is fixed for all hospitals in the system, the dollar rate received by an individual hospital may be adjusted according to certain criteria. Cancer hospitals, for example, in which 80% of the patients fall into cancer-related DRGs, may choose to be paid on a "reasonable cost" basis. Rural referral hospitals outside of standard metropolitan statistical areas with 500 beds or more, will be paid at the urban DRG rate. During the second year of the system, urban referral centers may receive an as yet unspecified adjustment.

Sole community hospitals, those hospitals identified by criteria of isolated location, weather, and travel conditions, or absence of other similar hospitals in the area, will retain the first year phase-in rate indefinitely (i.e., that rate which is established by 75% based on the hospital's own cost experience and 25% of the regional rate). In addition, sole community hospitals will, if they experience a decrease in their patient populations of 5% or more, receive again an as yet unspecified adjustment.

Teaching hospitals will also receive an adjustment. Direct costs of medical education, basically the salaries of residents and interns, will continue to be paid on a reasonable cost basis. Indirect costs of medical education (e.g., additional lab tests) will be paid at twice the TEFRA adjustment rate. Thus a typical teaching hospital may receive an additional 12% revenue on top of the total

DRG reimbursement. There are also a series of special financial adjustments available.

Capital costs will continue to be paid as a pass through until at least October 1984 when Congress will receive a study on how to include them under the PPS.

Provisions are also made for payment of "outliers" or atypical patient cases. Specifically, additional payments will be made for cases that exceed the average length of stay by either 20 days or 1.94 standard deviations, whichever is less. In an earlier example, excessive burns, the average length of stay is approximately 12 days. Therefore, if a burn patient is admitted and stays in the hospital between 1 and 32 days (which is 12 days plus the 20 specified days), the hospital will receive only the DRG payment. However, if the patient stays beyond the 32 days, the patient will fall into the outlier category and the hospital will receive payment for those extra days (60% of the per diem rate).

Hospitals may also request additional payment for cases where costs exceed 1.5 times the DRG rate or \$12,000, whichever is greater. Again, hospitals would receive 60% of the extra costs. It is important to note that within the entire medical care system the payment for outliers cannot exceed 6% of the total federal Medicare Part A budget.

Other adjustments are available for kidney acquisition centers and transfer patients. Medicare will pay for the cost of procuring the organ including donor expenses. Under the PPS a hospital that transfers a patient will receive a per-diem reimbursement based on the number of days the patient was in the hospital. The receiving hospital will receive a full DRG payment based on its own diagnosis.

### **Maintaining Quality**

One of the greatest criticisms leveled against the PPS is that it does not contain sufficient safeguards to protect the quality of care.

Essentially, the legislation delegates the responsibility for monitoring quality to the peer-review organizations (PROs). All hospitals participating in the PPS are expected to contract with a PRO by Oct. 1, 1984. The PRO has responsibility for analyzing the validity of patient diagnosis and the appropriateness of admissions and discharges, reviewing outlier cases, and assessing the quality of care.

The law also provides that states may apply for waivers from the PPS. Currently four states have such waivers: New York, New Jersey, Maryland, and Massachusetts. Other states have passed legislation that will likely result in a waiver. If a state meets six specific requirements, the HHS Secretary may, at her discretion, grant the state a waiver. Perhaps the two most important criteria are that a state's plan must cover all the acute hospitals in the state and that the costs to Medicare under the state system cannot exceed the costs that would have been expended under the PPS. If the state meets all those six discretionary requirements plus six additional requirements, the Secretary must grant a waiver. Perhaps the most important consideration is that the system must be operated under state auspices, which in most states require state legislation.

The law also provides a mechanism for updating DRGs; this is delegated to the Office of Technology Assessment through the Prospective Payment Assessment Commission (PROPAC). The PROPAC must include physicians, nurses, hospital representatives, and others. A Society of Nuclear Medicine nominee, Barbara J. McNeil, MD, PhD, is one of the charter members.

As its main duty, the Commission will make recommendations to the Secretary and Congress on recalibration of the DRG weights for 1986 and at least every four years thereafter. In addition, the Commission is to make recommendations on the annual updating or inflation factors for the federally established dollar rates, and also to provide recommendations on coverage and technical issues.

The law has specified a number of studies to be carried out by HCFA that relate to analyzing the impact of the PPS and its perceived weaknesses and to consider extension of the PPS to other areas. Some of these studies are:

- an annual report to be submitted each year,
- the potential impact of PPS on skilled nursing facilities due in December 1983;
- the capital cost study, mentioned earlier, due in October 1984 to Congress;
- a study on the extension of the PPS to an all payor system is due by January 1985.
- In April 1985 studies are due on the impact of PPS on hospital cost information systems, the issues of sole community hospitals, uncompensated care, and also the experiences of Part A and B transfers.

□ In December 1985 a study is due on those hospitals currently exempt from the PPS system, the impact on admissions, experiences of the outlier system, the determination of whether the urban/rural distinction should be capped or perhaps expanded. One study, which should be monitored closely, is the extension of the DRG system to the provision of physician services to inpatients. Based on current activities there are no guarantees that Congress will wait until 1985 for the results of this study before acting.

The exact consequences of the PPS are as yet unknown, but a number of potential implications for physicians and hospitals have been raised. Under the PPS, hospitals are now economically at risk. If a hospital is able to provide services below the DRG rate of reimbursement, it will make a profit. Likewise, if a hospital's cost for rendering care is above the DRG rate, it will lose money. The economic incentive for a hospital is to find a way to provide services below the DRG reimbursement rate. This may lead hospitals to select a "mission" and to provide only those services at which it is most efficient. In essence, hospitals will no longer provide all services to all patients. In addition, hospitals will rigorously examine existing programs to determine their viability. If they consistently lose money on a given DRG, this service may be discontinued. Also, prior to acquiring new technology, the economic impact of delivering services will be determined.

### **Impact on Nuclear Medicine**

The basic incentives for hospitals will be to shorten the length of stay, to minimize the amount of resources required for proper patient care, to maximize occupancy rates, and to carefully review the impact of any new technology.

Nuclear medicine must take into consideration these incentives. It is important to note that other equally important incentives continue to counter the move toward minimizing resources and tests. The Joint Commission on the Accreditation of Hospitals continues to require the availability of nuclear medicine services. The pressures of professional liability require close attention to standards of care. The physician's incentive to act as the patient's advocate and to do the right thing offsets the incentive toward pure efficiency.

Therefore, it will be even more important for referring physicians to know the cost benefit of nuclear medicine procedures. *It is not what they cost, but what they can save.* If a nuclear medicine study can avoid the use of other more expensive procedures or shorten the time to diagnosis and, therefore, the time to discharge, the demand for nuclear medicine services will increase. On the other hand, nuclear studies that are "add-ons" will be carefully scrutinized, as will the quality of these procedures. It will be important for nuclear medicine physicians to consult on the type and timing of diagnostic services to minimize the length of stay. In order to accomplish this task, it is important that the Society carefully study protocols for utilization of diagnostic imaging procedures and their impact on the overall cost of services to the hospital.

Nuclear medicine professionals should become actively involved in DRG committees that many hospitals are establishing to oversee the transition to the DRG system.

Nuclear medicine can help reduce costs by shortening the time to diagnosis. It is imperative that the nuclear medicine community pay close attention to the rapid turnaround of results to shorten the time to diagnosis. We must also communicate effectively to the referring physician community that nuclear medicine procedures are efficacious in producing quick and accurate diagnoses and, therefore, the type of care received by the patient.

Nuclear medicine departments should review their ability to produce results rapidly and take a close look at their communication processes with referring physicians and hospital administrators to make sure that the message of the efficacy of nuclear medicine procedures is being sent—and received.

In marketing terms (which are becoming more and more acceptable in the hospital environment), what we should be doing is making sure that our product meets our customers' needs. But meeting needs is not enough. We must also be sure to communicate that fact to our market: the referring physician and the hospital administration.

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The "nuts and bolts" information in this article stems in large part from data provided by the American Medical Association.