

Special Report

Developing payment refinements and reforms under Medicare for excluded hospitals

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Four classes of specialty hospitals (children's, psychiatric, rehabilitation, and long-term) and two types of distinct-part units in general hospitals (psychiatric and rehabilitation) have been excluded from the Medicare hospital prospective payment system since it was enacted by Congress in 1983. The number of these facilities and the Medicare dollars expended have more than doubled in less than 5 years, prompting renewed policy interest in developing payment reform. In this context, the substantial research and policy development efforts to refine case-mix classification and payment policies for these facilities are reviewed and examined. Findings are discussed relative to possible legislative and regulatory directions.

Introduction and background

The Social Security Amendments of 1983 (Public Law 98-21), passed by Congress and enacted by the President in the spring of that year, established the statutory framework for the Medicare hospital prospective payment system (PPS). Under PPS, the Medicare program has been paying hospitals in 48 States and the District of Columbia on the basis of a prospectively determined rate for each type of case. At discharge, each case is classified into one of about 475 diagnosis-related groups (DRG's). Medicare pays, based on the DRG, an amount that is published at the beginning of the fiscal year—that is, prospectively.

PPS generally applies to all hospitals participating in the Medicare program, with certain exclusions, exemptions, and adjustments specifically set forth under the law. At present, four major classes of specialty hospitals (children's, psychiatric, rehabilitation, and long-term) and two types of distinct-part units in general hospitals (psychiatric and rehabilitation) are excluded from PPS.

The exclusion for these hospitals and units presently has no limitation; however, the Secretary of Health and Human Services was mandated to report to the

Congress the results of research studies on whether and how these excluded hospitals and units might be included under a prospectively based system.

According to the 1983 amendments: "In the annual Report to Congress under subparagraph (A) for 1985, the Secretary shall include the results of studies on whether and the method under which hospitals, not paid based on amounts determined under such section, can be paid for inpatient hospital services on a prospective basis as under such section." (Sec. 603(a)(2)(C)(ii).)

In response to the legislative mandate, the Health Care Financing Administration (HCFA) has undertaken and funded a wide range of research studies during the last 5 years regarding the inclusion of the four classes of facilities excluded under PPS. Coordination with additional studies conducted outside HCFA has also taken place. This article, based on the Secretary's Report to Congress, *Developing a Prospective Payment System for Excluded Hospitals* (U.S. Department of Health and Human Services, 1987), reviews these research studies for each hospital class—children's, psychiatric, rehabilitation, and long-term. The research findings are examined relative to possible legislative and regulatory recommendations regarding inclusion of each class of facilities under PPS, and relative to payment policy reform generally.

Perhaps more importantly, the progress toward the development of a prospective payment system for these facilities is evaluated in the context of more substantial, and sometimes longer range, directions of Medicare reform that have emerged since PPS was enacted. These directions include a reexamination and extension of Medicare program benefits, such as the recent catastrophic care legislation implemented January 1, 1989. These also include payment policies that foster capitation and alternative private health plans, and program initiatives that emphasize the delivery of truly effective and appropriate services to Medicare beneficiaries. Overall, the discussions here can identify and outline policy implications and can provide directions for future research and legislation that may be proposed for each class of hospitals.

This article is organized into three sections. In the first section, we focus on characteristics and policy issues that cut across the four classes of excluded hospitals. We begin with a brief legislative history and rationale for exclusion under PPS, discuss the process developed for initial exclusion of these hospitals, and then update their current status. Data on the different levels of Medicare program expenditures for these classes of hospitals are presented, and current Medicare payment policies—that is, those legislated under the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA)—for these facilities are discussed.

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Table 1

Criteria for exclusion of hospitals from the Medicare prospective payment system

Type of facility	Exclusion criteria
Children's	<p>Inpatients must be predominantly individuals under 18 years of age (based on hospital's most recently filed cost report).</p> <p>Facility must have a provider agreement with Medicare.</p> <p>Facility must meet Medicare's definition of a hospital.</p>
Long-term	<p>Average inpatient length of stay must be more than 25 days (Section 1886(d)(1)(B)(iv)).</p> <p>Facility must have a provider agreement with Medicare (see Health Insurance Manual 15, Section 2803).</p>
Rehabilitation ¹	<p>Facility must have a provider agreement with Medicare.</p> <p>Facility must be primarily engaged in furnishing intensive rehabilitative services during the hospital's most recent cost-reporting period for an inpatient population of which at least 75 percent required treatment for one or more of 10 specified conditions (e.g., stroke, spinal cord injury).²</p> <p>Facility must have a director of rehabilitation who is a licensed Doctor of Medicine or Osteopathy and who has had at least 2 years' experience in treating inpatients requiring rehabilitation services.</p> <p>Facility must have in effect a preadmission screening procedure.</p> <p>Facility must use a multidisciplinary team approach in the rehabilitation of each inpatient.</p> <p>Facility must ensure that patients receive close medical supervision and furnish rehabilitation nursing, physical therapy and occupational therapy, plus other special services such as speech therapy and prosthetic services.</p> <p>Facility must have a plan of treatment established, reviewed, and revised as needed by a physician in consultation with other professional personnel.</p>

See footnotes at end of table.

In the second section, we introduce the methods and tasks involved in construction and design of a prospective payment system for excluded facilities. The section includes a discussion of the present Medicare PPS and an analysis of issues that must be considered in a payment system for the excluded facilities.

In the final section, we provide a synopsis of the unique aspects of each specialty hospital class, then we review and analyze relevant research studies and draw implications for policy. This section concludes with a consideration of future directions for policy and further research.

Table 1—Continued

Criteria for exclusion of hospitals from the Medicare prospective payment system

Type of facility	Exclusion criteria
Psychiatric ¹	<p>Facility must have a provider agreement with Medicare.</p> <p>Facility must treat only patients with a principal admission diagnosis contained within the 1983 American Psychiatric Association's <i>Diagnostic and Statistical Manual (DSM-III)</i>.</p> <p>Facility must be directed by a board-certified (or board-eligible) psychiatrist.</p> <p>Facility must furnish psychological and social work services.</p> <p>Facility must be supervised by a registered nurse qualified in psychiatric nursing.</p> <p>Facility must provide an individualized treatment patient plan developed by a multidisciplinary team consisting of at least a physician, a psychologist, and a psychiatric nurse.</p>

¹In addition to meeting the same requirements as acute care hospitals, rehabilitation and psychiatric distinct-part units must satisfy a few special requirements. They must apply written admission criteria uniformly to Medicare and non-Medicare patients, in order to discourage patient shifting. The units must be separate cost entities, with separate medical and financial records. Distinct-part units' beds may not be used for acute care patients. (See 42 CFR 412.23(a), 42 CFR 412.23(b), 42 CFR 412.27, 42 CFR 412.29, and 42 CFR 412.30.)

²A hospital may also provide a written certification that the inpatient population it intends to serve over the next 12 months meets these requirements.

Understanding the excluded hospitals

Rationale and status of exclusion

The Medicare PPS is an empirically based system; that is, payment for services was initially derived from past experience and historical costs. This was foremost among the reasons for congressional consideration of exclusion for certain groups of hospitals.

The exclusion legislated for these four classes of hospitals was based on the fact that the national data base used for creating the DRG's either did not include or underrepresented these groups. The HCFA-funded data base used by Fetter, Thompson, and colleagues to develop DRG's (Fetter et al., 1977; Fetter, Shin, and Freeman, 1980; Fetter et al., 1982) was drawn from general acute care hospitals. No children's hospitals or freestanding psychiatric hospitals, for example, were included in the data base, so few of the patients typically treated in these types of hospitals were to be found in the sample. Furthermore, the Medicare, Michigan Medicaid, and Maryland all-payer cost data used to initially construct low-volume DRG weights for the Medicare PPS did not include adequate data for these classes. For example, the Michigan and Maryland cost data included only one children's hospital. Thus, any distortions introduced during the development of DRG's by the omission or underrepresentation of data

were not accounted for in the development or implementation of PPS.

The U.S. Department of Health and Human Services (DHHS) Report to Congress, *Hospital Prospective Payment for Medicare* (1982), recognized this deficiency. The report stated that the "DRG's were not designed to account for these types of treatment" found in the four special classes of hospitals, and noted that "including these hospitals will result in criticism . . . (and) their application to these hospitals would be inaccurate and unfair."

This latter phrase reflects a further and more implicit reason for exclusion of these hospitals—namely, that anecdotal data suggested that DRG's worked less well for these treatment classes than for other medical categories. One problem was that the available evidence suggested that the resource needs of patients in these hospitals were not necessarily correlated with diagnoses. A second concern was that the mix of service intensities provided by these classes differed significantly from that of general medical and/or surgical hospitals. The legislative history report of the 1983 amendments asserted that the "DRG system was developed for short-term acute care hospitals and as currently constructed does not adequately take into account special circumstances of diagnoses requiring long stays" (United States Code, 1983).

Following the initial legislative mandate, the published rules and administrative regulations addressed several important program issues for implementation purposes, including exclusion criteria for a diverse set of providers. These included psychiatric, rehabilitation, and alcohol and drug units, and exempted certain types of providers such as cancer treatment centers and rural referral centers. (For a description and discussion of these other excluded and exempted hospital types, see, for example, the Secretary's annual Report to Congress for 1984 on the impact of PPS [U.S. Department of Health and Human Services, 1986a].)

Exclusion criteria for children's and long-term hospitals were simply defined in the 1983 amendments' legislative language. For psychiatric and

rehabilitation hospitals and units, however, determination for exclusion from PPS has been based on specific regulatory criteria relating to the types of patients treated, services provided, staffing characteristics, and certification status. For psychiatric or rehabilitation freestanding hospitals, the facility has been required to meet the general conditions of participation for hospitals as well as the special conditions of participation within its particular specialty class. For distinct-part units within these two classes, exclusion has hinged upon several very specific criteria:

- Association with a participating hospital.
- Written admission criteria that apply to both Medicare and non-Medicare patients.
- Separately identified admission and discharge records.
- Policies under which necessary clinical information is transferred to the unit with each patient.
- Compliance with applicable State licensure laws.
- Utilization review standards for the type of care offered by the unit.
- Separate beds that do not "commingle" with the hospital's other beds.
- Servicing by the hospital's regular intermediary.
- Financial structuring as a separate cost center.
- An accounting system that separately identifies and allocates its costs.
- Maintenance of data to support the basis of allocation.
- Use of the same fiscal report period and cost apportionment method as the hospital (42 CFR 412.25(a)).

The individual exclusion criteria for each of the four specialty types are outlined in Table 1.

Current exclusions

Statistics broadly indicate the extent to which providers across these four treatment groups have responded to Medicare's hospital payment system. A total of 5,686 hospitals, or about 85 percent of all hospitals in the United States, were operating under

Table 2
Numbers of hospitals and distinct-part units excluded from coverage under the Medicare prospective payment system (PPS), by type of facility: Fiscal years 1984-88

Type of facility	Fiscal year							
	1984		1985		1986		1987	1988
	March	September	March	September	March	September	September	September
Children's	38	47	49	53	53	55	60	58
Psychiatric								
Hospitals	429	439	448	481	492	515	578	608
Units	380	722	737	762	874	906	950	1,051
Rehabilitation								
Hospitals	35	49	54	68	71	79	84	100
Units	166	308	351	386	440	473	535	565
Long-term	68	84	83	86	98	92	87	87

NOTES: 1984 figures do not include hospitals and units in the waived States. The numbers for 1985 forward do include data for hospitals and units in waived States that meet the criteria for excluded hospitals and excluded units under PPS. These data are phased in according to the fiscal year start dates of the facilities.

SOURCE: Health Care Financing Administration, Health Standards Quality Bureau: Reports of Exclusion Activity.

Table 3
Medicare expenditures and utilization data for hospitals and distinct-part units excluded from coverage under the Medicare prospective payment system, by type of facility: Calendar years 1984-87

Type of facility	1984	1985	1986	1987
		Number of discharges		
Children's	1,375	1,790	2,275	2,140
Psychiatric Hospitals	59,660	63,800	75,625	80,480
Units	61,890	92,800	120,190	137,775
Rehabilitation Hospitals	23,595	21,300	29,800	33,255
Units	30,145	47,620	59,220	71,010
Long-term	21,700	21,455	13,265	13,140
		Average length of stay in days		
Children's	7.35	8.60	10.30	8.40
Psychiatric Hospitals	40.06	36.24	37.60	36.10
Units	16.55	16.49	16.87	17.40
Rehabilitation Hospitals	23.52	23.82	25.50	25.00
Units	21.66	21.90	22.16	22.70
Long-term	30.67	31.67	37.80	37.90
		Covered charges in millions		
Children's	\$13.1	\$20.6	\$27.9	\$31.5
Psychiatric Hospitals	322.6	368.8	476.7	572.8
Units	328.4	542.2	815.0	1,008.9
Rehabilitation Hospitals	106.8	203.9	340.1	418.5
Units	298.2	507.2	718.2	930.0
Long-term	283.1	188.4	125.3	137.8
		Actual payments in millions		
Children's	\$7.8	\$12.4	\$16.3	\$15.6
Psychiatric Hospitals	202.6	226.8	280.9	332.4
Units	240.1	368.3	489.7	581.8
Rehabilitation Hospitals	67.7	130.0	211.7	255.5
Units	201.6	349.4	445.6	563.3
Long-term	177.8	119.4	75.0	81.2
		Percent of Medicare total inpatient hospital payments		
Children's	—	—	—	—
Psychiatric	1.1	1.4	1.5	1.9
Rehabilitation	0.6	1.1	1.4	1.5
Long-term	0.4	0.27	0.16	0.17

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations.

PPS through the end of fiscal year 1988. Nearly 2,500 certified facilities (843 hospitals and 1,616 distinct-part units) had received exclusions under PPS.

The aggregate numbers of excluded hospitals and units are shown in Table 2 for March and September of 1984, 1985, and 1986, as well as for September of 1987 and 1988. As can be seen in this table, the numbers of some types of excluded hospitals (such as children's and long-term hospitals) have remained

relatively unchanged since March 1984, while other types (e.g., rehabilitation hospitals) and excluded units (e.g., psychiatric and rehabilitation) have increased consistently and markedly in number over time. Psychiatric freestanding hospitals have shown relatively less change, because historic participation in Medicare allowed automatic exclusion under the new system. Some of the large increases in numbers of exclusions in 1984 and 1985 reflect, in part, 5- to

6-month lag times sometimes encountered in the application and certification process established during the initial year of PPS implementation. In other instances, final rules were modified in the early years after PPS to allow for a greater number of exclusions.

There are two further points about these numbers that require consideration in research, analysis, and policy development efforts. First, not all hospitals and units that might generically fall into one of these four classes necessarily meet HCFA criteria for eligibility. For example, only 1,051 of more than 1,300 general psychiatric units of short-term hospitals have been granted an exclusion. As Lave et al. (1988) have pointed out, some hospitals and/or units may not comply with one or more exclusion requirements because of what they perceive to be favorable payment incentives presented by the PPS.

A second point is that exclusion category status may not fully reveal the institutional characteristics or patient population served. For example, the exclusion process does not allow identification of a subset of patients that overlap exclusion categories (e.g., children's rehabilitation and children's psychiatric cases). The approximately 30 children's psychiatric hospitals could be included on the list of children's hospitals or on the list of the excluded psychiatric hospitals. Correspondingly, a long-term hospital excluded on the basis of its average length of stay (ALOS) could well have patient populations very similar to those in psychiatric or rehabilitation facilities, but might choose not to meet regulatory standards for exclusion in one of the latter categories.

Trends in utilization

Available information on the number of discharges, length-of-stay (LOS) patterns, covered charges (the portion of total charges for which Medicare accepts financial responsibility), and actual total payments for beneficiaries in the excluded facilities by specialty class are presented in Table 3. These numbers are similar to trends reported by the American Hospital Association (American Hospital Association, 1982-1987; Sonik, 1987) throughout this decade. Gornick and Hall (1988) have pointed out that increasing numbers of Medicare discharges over time may reflect in part a shifting of patients who previously would have been covered under Medicare in other facilities (specifically acute care hospitals) rather than a true increase in Medicare discharges. At the same time, utilization of specialty services might be expected to increase in a population in which the proportion of persons with chronic disabilities is becoming larger.

Currently, Medicare expenditures for excluded hospital services are relatively low, compared with other types of health services under Medicare, especially medical and surgical procedures in acute care delivery settings. This is because of the specialized nature of care delivered by excluded hospitals and because the Medicare benefit structure has historically included a limited number of inpatient

hospital days. For example, a relatively small part of overall Medicare payments are for psychiatric services. In Federal fiscal year 1984, slightly more than 1 percent of total Medicare payments (or \$443 million of the approximately \$41.3 billion in total hospital expenditures) were for psychiatric inpatient services. During the last 5-year period, however, total payments to all specialty facilities, as a percent of overall Medicare hospital payments, have grown significantly—in fact, they have roughly doubled.

The differences in levels of expenditures and in payer mix can have pronounced implications for payment policies relating to these excluded classes of hospitals and units. For rehabilitation facilities, for example, Medicare is the single largest payer of rehabilitative care, accounting for an average of 40 percent of revenues in hospitals and more than 50 percent in distinct-part units. Therefore, changes in Medicare payment policy will have a substantial impact on their provision of care (Hosek et al., 1986; American Hospital Association, 1988). For psychiatric, children's, and long-term facilities, Medicare payments constitute a considerably lower percentage of provider revenues. Very few children (specifically, only those with end stage renal disease) qualify for Medicare. Hence, only about 3 percent of expenditures for children's hospitalization come from the Medicare program. To the extent that Medicare payments constitute a small portion of revenue for some facilities, possible concerns arise that inadequate payment levels could affect beneficiary access to those institutions, the quality of care provided upon admission, and the timing of the decision to discharge.

An additional level of public funding has become available under the newly enacted Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360). This legislation provides the greatest single expansion of benefits under Medicare since the genesis of the program in 1965. In terms of changes relating to hospital payment, the concepts of "benefit periods" and "lifetime reserve days" are replaced by unlimited hospital coverage for the entire year, with the beneficiary paying a 1-day deductible once each year.

Coverage under a related public program—Medicaid—can also play an important role. Children's hospitalization provides the most dramatic example of the situation in which Medicaid payments can sometimes account for a majority of a facility's total revenues. Almost one-half (45.8 percent) of expenditures for children's hospitalizations comes from public sources, the most important of which is Medicaid. For chronic care patients, Medicaid has also generally shouldered the majority of the payment burden. To the extent that States adopt prospective or alternative payment approaches for their Medicaid programs, Federal policies could serve as precedents for hospital exclusions, taking on additional importance.

In short, any consideration of payment refinement and reform for excluded hospitals could be a

function, in part, of the absolute level of Medicare dollars involved, the relative rate of change in those payments in recent years, and the relative impact of PPS and other factors on Medicare payments to these facilities in the future.

Current payment policies

Current Medicare payment policies for these excluded hospitals demonstrate the contrast in economic incentives of the present cost-based system of limits (established by TEFRA) with the incentives of a prospectively based system.

Prior to the TEFRA legislation, hospitals were reimbursed by Medicare according to a system of limits for daily routine occupancy costs, plus reasonable costs incurred for special and ancillary care. With the passage of TEFRA, reimbursement limits were extended to total operating costs per discharge for nearly all hospitals—acute care and specialty providers alike. Upper limits for inpatient operating costs per case were established by Section 1886(a) of the act, using an initial averaging of costs across the aggregate of cases treated in similar hospitals. “Similarity” of provider type was defined as belonging to one of seven Medicare-designated urban or rural bed-size classes. Medicare case mix was also taken into account.

An early form of DRG’s, using Medicare stay files to develop relative cost weights, was used to create a case-mix index (CMI) for each hospital. This CMI collectively weighted each hospital’s average costs per discharge to account for differences in patient populations. Cost adjustments were made for wage-index differences nationally, and adjustments to limits were made for indirect medical education. Only sole community hospitals, new (i.e., established less than 3 years) providers, health maintenance organizations (HMO’s), and rural hospitals with fewer than 50 beds were exempted from these TEFRA limits.

In effect, the global limit on inpatient operating costs under the initial TEFRA legislation established for each hospital a target inpatient operating cost per discharge—conceptually, a single DRG case-mix adjusted amount applicable to all cases. The legislation also established a target rate of increase (applied at the case level) for subsequent years and provided for incentive and penalty payment provisions to hospitals that achieved operating costs less than or equal to their target amounts. The incentive payment is the lesser of one-half of the difference between actual and target costs per discharge, or 5 percent of the target amount. For hospitals whose operating costs per discharge exceeded their targets, TEFRA provided for reimbursement of up to 25 percent of the allowable operating costs in excess of the target amount. This provision applied only to cost-reporting periods beginning before October 1, 1984. Since then, the target has been the maximum amount—a further efficiency of the initial TEFRA limit approach.

With the Social Security Amendments of 1983, the excluded hospitals and units continued under the

TEFRA system of limits. The implication is that the present Medicare method for reimbursing inpatient hospital care to beneficiaries in these facilities can be termed a form of reasonable operating costs per discharge. The transition from per diem occupancy costs to total operating cost limits, coupled with the incentive payment provided to hospitals that contained costs under the prospectively determined limit, generated much greater incentives for providers to be efficient than did former Medicare limits on routine daily occupancy costs. And although the TEFRA limits have meant that excluded facilities do not participate in PPS, they still arguably function under a prospective limit-based system that uses economic incentives similar to those of PPS. Indeed, the target rate of increase has been a visible tie between excluded facilities and those under PPS; until Federal fiscal year 1988, Congress granted the same percent increase to both.

Developing payment system reform

Any critical deliberation of the relative merits of payment reform for excluded facilities necessitates a framework and strategy for deciding what constitutes a satisfactory system. Changes in policy should promote a cost-effective system of accessible, appropriate, and high-quality care for Medicare beneficiaries, while maintaining a high degree of equity or fairness of Medicare payments across providers. Toward these goals, the methods and tasks for constructing and choosing the design features of payment system changes should include:

- Analysis of existing delivery system.
- Development of a classification system.
- Design of a payment system.
- An impact assessment of proposed system.

Analysis of delivery system

The collection of data and other information to provide an analysis of the delivery system of the excluded facilities must be undertaken. The use of resources required for patient care must be related to variables describing the nature of patients and providers.

Patient types

Patients treated in the four classes of excluded facilities typically fall into one of two broad categories:

- Those with acute or well defined treatment needs.
- Those with more long-term treatment requirements, reflecting (generally) more chronic care needs.

What differs across these four facility types are, of course, the clinical reasons for admission as well as the mix of acute and long-term treatment needs.

Diagnosis and treatment of acute diseases and conditions are most common in children’s hospitals. The process of pediatric hospital care for many

patients is, in fact, probably closer to the paradigm of acute care than that of the other three excluded hospital types. Often the clinical goal is to minimize the length of stay in order to reduce the stress of separation from parents. The purpose of typical pediatric hospitalizations is also the same as for acute care: to diagnose disease and then treat it. Thus, services rendered in both settings often involve a heavy emphasis on physician care and reliance on diagnostic and therapeutic technologies (Payne and Restuccia, 1987).

In rehabilitation hospitals, stays are often longer and care usually emphasizes the treatment of functional limitations and disability, not pathology and impairment. The end point of an admission may not be a specific clinical event so much as the consensus of a multidisciplinary provider team that treatment goals have been optimally achieved. Still, a high percentage of patients—especially Medicare patients—enter a rehabilitation facility with a confirmed diagnosis. Conditions such as stroke, hip fracture, and arthritis can often be treated in relatively short, well defined periods of time.

Similarly, acute episodic psychiatric care is frequently found in distinct-part psychiatric units in general community hospitals. The type of patient and type of care appear to correlate highly with the treatment setting in psychiatric care. What makes this excluded class more problematic, however, is the unknown degree—perhaps more so than in other areas of medical care—to which differences in treatment approaches reflect true patient needs or merely different styles of medical practice.

At the same time, these four classes of hospitals frequently share a common characteristic: Their patients need either intermittent care over long periods of time or continuous care as a result of disability. Examples of such patients range from pediatric patients with severe congenital diseases, to the mentally disabled in psychiatric hospitals, to respirator-dependent patients in long-term hospitals.

About 10 percent of psychiatric admissions for Medicare beneficiaries are for patients under 65 years of age who are eligible because of permanent disability. The majority of this group is presumably composed of individuals who may reasonably be described as chronically mentally ill. In addition, it appears likely that 5-10 percent of psychiatric care use by those 65 years of age or over is by individuals who became permanently disabled before 65. Patients in both of these groups probably qualify as chronically mentally ill.

For pediatric cases, there are a number of specific childhood diseases or conditions for which this acute, episodic intervention model does not hold. Certain genetic diseases (e.g., cystic fibrosis, muscular dystrophies), congenital cardiac and gastrointestinal tract deformities, childhood malignancies (particularly leukemias), and a number of other medical presentations may require prolonged stays, with periodic or continual active intervention and physician involvement. There are 7.2-10.8 million children

(10-15 percent of all U.S. children) with some type of chronic impairment. Of these, 1-2.8 million have conditions severe enough to limit their daily activities significantly (National Center for Health Statistics, 1983; Payne and Restuccia, 1987). These impairments necessitate repeated episodes of hospitalization and varying treatment levels.

A good initial approach to classification of a larger number of patient treatment needs is the development of measures of chronicity levels and the need for intermittent or continuing care. This is especially useful for rehabilitation and long-term facility patients. A substantial number of rehabilitation patients and—almost by definition—the great majority of long-term hospital patients can be expected to be on the upper end of a spectrum of functional disability. They are frequently severely impaired, requiring a high level of nursing attention or technological support (e.g., chronic ventilator dependence).

Transfer and referral patterns

It is precisely at the point at which patients require significant and continuing amounts of medical care that excluded facilities become important. During the last several decades, these facilities have developed as a specialized part of multi-level care systems. Excluded hospitals and units cannot be viewed in isolation, but rather as part of highly differentiated care systems. Patients with greater-than-average treatment needs are more often than not systematically transferred or referred to a few specialized facilities.

Almost twice as many psychiatric patients are discharged to another inpatient mental health facility as are general patients (25 percent versus 12 percent). There is also a tendency for long-stay mental patients to go to State or county hospitals, for short-stay patients to go to psychiatric units of general hospitals, and for private psychiatric hospitals to occupy a middle ground.

For rehabilitation services, most patients admitted to rehabilitation hospitals and units are referred from other hospitals. Rehabilitation care is further characterized by interruptions and by conditions requiring acute care (either recurrences of the original problem or new conditions or complications). When this occurs, acute care may be provided in the same facility, if rehabilitation is being given in a defined unit of an acute care hospital; if not, the patient may require transfer to an acute care hospital (Hosek et al., 1986). Long-term hospital patients are transferred to acute care settings for surgery, intensive care, and so on. Long-term hospital patients may also be discharged to facilities providing lower levels of care or to their homes.

For children's facilities, regionalization of pediatric services (such as perinatal care, cardiac surgery, end stage renal disease treatment, cancer treatment, and care for multiple congenital anomalies) has been promoted nationally as a means of attaining

economies of scale and assuring quality of care in settings of appropriate level (March of Dimes National Foundation, 1976; Payne and Restuccia, 1987).

Overall, it is important to recognize in the policy development process that one common denominator in understanding why these facilities may not "fit" the present DRG system is that they are parts of highly differentiated treatment systems. The effects of certain transfers or selective admissions may cause problems to a PPS system. Similarly, the greater the degree of differentiation, the greater the amount of trouble. To the extent that transfers are made to and among other hospitals, it is difficult to capture the clinical judgment leading to those transfers in a DRG or other system. As Bachofer (1984) and others have suggested, the health care delivery system is often found to be more complex than originally thought. To the extent that a clinically appropriate set of referral relationships exists among providers, and those referral arrangements are not reflected in the payment system, the "consequence of moving to an averaging system may well be the destruction of referral relationships" (Bachofer, 1984), as well as of an efficient differentiated care system.

Cross-subsidization issues

A last system characteristic that distinguishes excluded facilities is the possible cross-subsidization of services. For children's services, the question has been raised as to whether or not pediatric charges in general hospitals or tertiary hospitals with pediatric units are subsidized by shifting some of the costs from children's to adult services. This could result in the charges in general hospitals being lower than those for the same services in children's hospitals, which cannot shift costs to adult services. If this is indeed happening, and if DRG rates are developed and based on average charges, hospitals specializing in pediatric services may be financially penalized.

Patient classification

The feasibility of a patient classification system that could be used as the basis for a case-based prospective payment for excluded facilities must be assessed. Although the medical diagnosis is the basis of the DRG system, excluded facilities often provide care for conditions that are not well described by standard diagnosis and procedure codes.

Children, for example, may have diseases that adults do not (or different clinical presentations of the same diseases) and may require different types of treatment. In addition, there are congenital diseases (such as Hunter's syndrome and cystic fibrosis) that may result in death before adulthood and are therefore not seen in adult medicine (Payne and Restuccia, 1987). Clearly, these situations can render a case-mix system for adults largely inapplicable to children.

In mental health, measures of functional status or

chronicity can be as important as diagnosis in properly classifying psychiatric services. For example, individual needs may be defined clinically in terms of diagnosis, level of impairment and/or disability, and treatment requirements. This is closely analogous to the medical-surgical system. But in the mental health system, needs can also be defined socially in terms of the patient's ability to cope with the social demands of living in sheltered or unsheltered environments, and can also be defined legally in terms of the need of the patient and society to be protected from harm that the patient might cause.

Similarly, for rehabilitation and long-term facility patients, measures such as functional status or level of chronicity may provide as good or better an approach to classification for case payment as diagnoses do. It was previously pointed out that long-term hospital patients are at the upper end of a spectrum of disability. For rehabilitation services, patients with different pathologies leading to similar disabilities may form a more homogeneous group than do patients within diagnoses who may span the treatment-requirement spectrum.

Measures other than—or in conjunction with—diagnosis, then, may provide as good or better an approach to classification for case payment on a prospective basis. Such measures might include functional status upon admission, living situation, and general level of social support.

Design of payment system

The additional hospital- or provider-specific characteristics of resource use in these excluded facilities must also be examined. These factors include urban or rural location, teaching status, proportion of public-pay or poor patients, and other characteristics that affect the cost of care for like cases treated in different facilities. The effects of these factors may need to be taken into consideration to moderate the incentives of a national payment system for either a transitional or indefinite period.

In addition to hospital-level factors and the CMI, PPS makes special additional payments for outliers—patients with unusually costly or lengthy stays. The Social Security Amendments of 1983 required that 5 or 6 percent of payments under PPS be made through a system designed to account for outlier or unusual cases.

It is essential to discuss how transfers are handled under PPS, as they may be particularly important for excluded hospitals, because not all discharges to other institutions meet the definition of a transfer under PPS. Using the current PPS definition, a transfer occurs when a patient is moved from a short-term acute care hospital paid under PPS to another such hospital. In this situation, the transferring hospital is paid a per diem amount for each day of the hospital stay (up to the DRG rate), and the receiving hospital is paid the full DRG rate. No payments in addition to the regular DRG rate are made for patients transferred from one inpatient area or unit of a

Table 4

The likelihood of incurring negative net Medicare revenues of 10 percent or more¹ for facilities under the prospective payment system (PPS), by number of Medicare discharges

Annual number of Medicare discharges	Provider response to PPS		
	No response	10 percent reduction in length of stay	20 percent reduction in length of stay
		Percent risk	
1	46	41	36
25	31	13	3
100	16	1	0.1
400	2	0.01	0.1

¹The numbers in this table rely on an assumption that the distribution of cases is normal within classes and the coefficient of variation is 1.0.

SOURCE: Adapted from McGuire et al. (1985).

hospital covered under PPS to another covered unit within the same hospital.

Impact assessment issues

An impact assessment of the redistributive outcomes for included facilities and for other parts of the health care delivery system must be performed. This analysis should assess the consequences, in terms of both systematic and unsystematic risk, for the structure of these delivery systems, and should also consider the additional administrative requirements (e.g., data bases) of the proposed payment system.

McGuire et al. (1985) examined provider risk, especially as it related to the excluded classes of facilities.¹ They broadly define risk as the degree of dispersion of payoff around an expected value. Risk arises from two factors, described as systematic and unsystematic effects of a payment system. Random or unsystematic effects occur because the set of actual patients receiving care at a facility will never be exactly like the "average" patients within each category of a classification system. Cost and/or revenue discrepancies that are the result of random effects will tend to balance out over time as the number of discharges grows. Facilities with many Medicare discharges are protected from unsystematic risk by the "law of large numbers." The DHHS December 1982 Report to Congress, *Hospital Prospective Payment for Medicare*, refers to this law of large numbers and states that "approximately 50 Medicare cases are needed for the averaging process to work reasonably well."

In terms of unsystematic risk, of course, the facility has as much chance to lose as to gain. A high coefficient of variation (CV) implies that the chance of relatively high gains (or losses) is greater. Risk as a function of the number of discharges (when CV = 1) is shown in Table 4. In the case of a group of categories, such as the nine current psychiatric DRG's, a CV of one can be thought of as being the

weighted average of the CV's for the various categories in the group. With no change in LOS in response to prospective payment, the risk of incurring negative net revenues of 10 percent under prospective payment is 16 percent with a caseload of 100 Medicare patients. With a caseload of 400, the risk is trivial. Most Medicare providers have many more than 100 Medicare discharges per year.

There is appropriately some concern that smaller facilities or units will be less attractive to maintain. For distinct-part units, though, because the unsystematic risk of cases is independent of the risk associated with medical and surgical cases, the addition of an excluded unit may actually decrease the risk at the facility level. Only excluded hospitals that treat fewer Medicare patients may not have a large enough caseload to rely on the law of large numbers to balance gains and losses over time.

The total caseload of many of these facilities is likely to be in the hundreds, however, so that the financial risk of unsystematic losses from Medicare will be small in relation to total income of the facility. For example, consider a facility with only 100 cases averaging \$2,000 total cost per case. If 25 of these cases were under PPS with a CV of 1.0, the facility would face only a 2-percent chance of a loss of 10 percent or more during the year on its overall operation.

A more significant concern involves systematic risk, because the factors associated with this type of risk are not affected by the law of large numbers. A systematically more expensive facility or one that systematically draws a more resource-intensive caseload (not reflected in the classification system) will have an expected loss per case that does not diminish as the number of discharges increases. The distinction between risk and systematic effects is recognized by Jencks et al. (1984), who state that "case-by-case inequities may cause some management difficulties, but it is the hospital-by-hospital equity or inequity which makes the system fair or unfair."

Systematic underpayment could lead to discrimination against admission of patients anticipated to be more costly than average for their classification. It is this concern that brought about payment adjustments for urban and teaching hospitals in the original PPS legislation. In the matter of excluded hospitals, a main concern is that a more specialized facility may treat more costly cases. A classification system based on the average cost for all types of facilities may be detrimental to certain classes of institutions, such as specialized excluded facilities. In comparing case-mix classification systems, then, a critical issue is whether the variation in treatment requirements that is not explained by the classification system is associated with particular groups of hospitals in such a way as to result in unfair payment.

Administrative burden

A national system of classification and payment must rely on uniformly collected data. The system

¹The discussion on risk is based on work developed by McGuire et al. (1985).

Table 5

Status matrix for tasks involved in the development of a prospective payment system (PPS) for facilities currently excluded from the Medicare PPS, by type of facility

Type of facility	Task				
	Delivery system	Classification system	Payment system	Impact assessment	Recommendations
Children's	C	C	B	B	P
Psychiatric	C	B	B	B	P
Rehabilitation	B	B	B	B	P
Long-term	C	B	B	P	P

NOTES: C is completed. B is begun. P is planned.

should be easily applicable to any health care setting. Ease of implementation has been a criterion of general consensus, usually in the context of the advantage of using data items available on the Uniform Hospital Discharge Data Set (UHDDS). These data elements are routinely collected by Medicare and many other payers for all hospital admissions and are therefore routinely available in automated form for case-mix classification. Whether a classification system uses the UHDDS is obviously a matter of considerable practical importance, because other data are not routinely available to either test a system or set weights.

Reviewing research studies

The paradigm in Table 5 of the tasks in the development of a prospective payment system for excluded hospitals provides a useful structure to present research studies for each of the four specialty classes. Legislative and regulatory recommendations to include the four classes of excluded hospitals under a broader system of prospective and capitated payment constitute, in essence, a fifth and final task. As research proceeds and results are reported, options for including the excluded facilities can begin to take shape. The studies briefly described in the following sections address a subset of the five tasks. The matrix in Table 5 presents an overview of those tasks that have been completed (C), begun (B), or planned (P) for each of the four classes of hospitals. As the matrix indicates, work is probably not now sufficiently advanced to support legislative recommendations for any of the excluded classes of hospitals.

Children's hospitals

In the first year of PPS, HCFA awarded a cooperative agreement to the National Association of Children's Hospitals and Related Institutions (NACHRI), which was matched with funds from The Pew Memorial Trust, to develop a revised classification system for pediatric hospital services (NACHRI, 1985a, 1985b, 1986a, 1986b). The NACHRI study was organized into three phases (which parallel the first, second, and third tasks as described in the last section of this article):

- First, a description of the delivery of pediatric services by hospital class.

- Second, the development of a revised case classification system.
- Third, an analysis of the financial impact on children's hospitals of a payment system based on the revised classification system.

The NACHRI data base consisted of a specially created file of 500,000 pediatric and 250,000 adult discharges, with the pediatric discharges divided evenly between children's hospitals and general hospitals. For the financial analysis, NACHRI collected detailed cost data from 12 children's hospitals.

The first phase of the NACHRI study indicated that children's hospitals and university hospitals with major pediatric residencies perform similar roles in the delivery of pediatric care. In contrast with all other hospitals that treat children, children's hospitals and university hospitals with pediatric residencies treat a broader mix of pediatric conditions. Furthermore, they are almost the exclusive sources of care for certain pediatric procedures and conditions, such as cardiac surgery, oncology, and treatment for severely impaired neonates.

In the second phase, NACHRI used its large data base of pediatric discharges to refine the DRG's developed at Yale University. Applying the same statistical method as that applied at Yale, the NACHRI researchers revised the "splits," or groups, for pediatric services. In some of these, the revised categories distinguish children from adult patients; in others, the new groups distinguish children with underlying chronic illnesses and assign them to groups on the basis of particular medical diagnoses or surgical procedures. Most significantly, the revised system creates a substantial number of neonatal DRG's, based first on birthweight and then on diagnosis or procedure. In all, the revised classification system, which NACHRI has named children's diagnosis-related groups (CDRG's), proposed 73 additional groups to supplement the approximately 475 existing DRG's.

The third phase of the NACHRI study used the detailed cost data from a stratified random sample of 12 children's hospitals. These were supplemented with similarly detailed cost data for a small number of pediatric discharges from a sample of hospitals stratified by teaching status, which had been collected in a major study of graduate medical education funded by DHHS (1986b). These cost data were

applied to test the validity and fiscal impact of the revised CDRG's.

In the NACHRI study, the data base that was used for the assessment of the impact of the revised CDRG's was limited primarily to children's hospitals and did not include all hospital settings in which children might receive services. With this important caveat, the CDRG's more accurately predict resource utilization for pediatric services. Additional analyses by Payne et al. (1987) indicated that the Medicare teaching adjustment is extremely significant in the payment of children's hospitals and university hospitals with pediatric residencies and that children for whom Medicaid is the payer use higher levels of resources.

The NACHRI final report strongly recommends the revised CDRG's for policies relating to pediatric services in all hospital settings. Although Medicare expenditures for pediatric services are minimal, the adoption of CDRG's by the Medicare program could serve as a model for State Medicaid programs and private payers.

HCFA has directed a research team at Boston University (BU) to evaluate the NACHRI study to assess the validity and impact of the proposed CDRG's, and to examine the implementation-related issues (Payne, 1987). Because no single national data base can provide an adequate number of pediatric discharges from all hospital settings, the BU study will supplement its analyses with several State data bases. This approach is consistent with the Federal goal of developing a model PPS for pediatric services that any payer—State or private—might adapt to its pediatric delivery system.

Psychiatric hospitals and distinct-part units

In June 1984, the National Institute of Mental Health (NIMH) awarded a contract, jointly funded by NIMH and HCFA, to develop a patient classification system on which a Medicare PPS for psychiatric hospitals and distinct-part units could be based.² In addition, substantial work on this problem has been conducted at NIMH and outside the Federal Government by trade and professional associations in the psychiatric field.

These studies reinforce the suspicion that a psychiatric inpatient care system for Medicare beneficiaries differs from other medical and/or surgical services. Hospital-based psychiatric care is delivered in five kinds of settings:

- General hospital beds that are not part of organized psychiatric units (so-called "scatter beds," which are paid under PPS).
- General hospital beds that are part of organized psychiatric beds but are not excluded from payment under PPS.
- General hospital beds that are part of organized

psychiatric beds and that have been excluded from payment under PPS.

- Psychiatric hospitals that are either owned by investors or sponsored by voluntary boards of trustees (nonpublic hospitals, which are all paid under TEFRA).
- Psychiatric hospitals operated by States or counties (public hospitals, all paid under TEFRA, which serve as a safety net for the psychiatric inpatient system).

These various settings were found to provide care to patients with different needs and with different lengths of stay and costs. The five categories constitute a continuum of length of stay, frequency of psychotic disorders, frequency of civil or criminal commitment, and frequency of permanent disability. Differences among settings result from the types of patients initially admitted to particular hospitals and from patient transfers between facilities, especially transfers from short-stay to long-stay facilities for patients who have not responded to treatment.

At least 10 major studies assessed the feasibility of applying DRG's or a comparable classification system to determine national payment rates for psychiatric patients. To date, neither DRG's nor any variations thereof explain much of the currently observed variations in length of stay and cost for psychiatric hospitalizations within or across settings. The current psychiatric DRG's were examined using data from many sources and were generally found to account for less than 10 percent of this variation. Refinements of the DRG's were also examined, and though these did better in many circumstances, the amount of variation explained remained less than 15 percent. One system, the Psychiatric Severity of Illness Index (PSOII), provided substantially better power in accounting for observed variation; unfortunately, the PSOII tested was still developmental and depended substantially on implicit or subjective methods, raising concerns about its reliability. For the interim, then, it does not appear to be a viable tool to determine payments for psychiatric hospitalization.

Some of the difficulties with implementing DRG's or their modifications might be reduced by adjustments to the PPS payment system. For example, the outlier policy might be modified for psychiatric facilities to allow short-stay outliers and a larger proportion of long-stay outliers. Facilities might also be paid differently according to the relative number of patients received in transfer and transferred out. Lastly, using capitated payments for psychiatric services may be especially important for disabled Medicare beneficiaries. Although these individuals have no higher cost per admission than do the nondisabled, the former are admitted far more often. In this situation, the incentives of capitation are particularly appropriate. Although the feasibility of capitated psychiatric payments awaits fuller exploration, it might be examined in the context of broader proposals for capitation.

Simulations of the financial impact of applying

²This section is based on Jencks et al. (1986) and does not include detailed references.

either the existing PPS or a modified PPS indicate the possibility of substantial reallocation of payments among psychiatric facilities. Given the high degree of differentiation in the psychiatric system, there is some concern that such a reallocation would not adequately recognize differences in patient treatment requirements among facilities. Moreover, the volume of transfers and the low volume of Medicare patients further suggest that if Medicare's payments were perceived to be inequitable, hospitals could have a financial incentive to discriminate against Medicare beneficiaries. Accordingly, studies have consistently cautioned against using any currently available version of PPS for payment reform.

At the same time, the analysis of classification and payment options suggested several research strategies to be tested using HCFA data becoming available during the next few years. One strategy is to treat the kind of intensive psychiatric treatment that is delivered in psychiatric units and hospitals as a procedure akin to a surgical procedure. When this is done, the explanatory power of the DRG system rises sharply, though not to the level currently observed for surgical DRG cases. A second strategy is to use mathematical models that predict length of stay or cost individually for each patient, instead of classifying each patient into one of a relatively limited number of groups. This approach appears to produce more flexible systems that predict actual current variations in cost and length of stay more accurately, but sacrifice some of the simplicity of the DRG model.

Some of this work has already been initiated by NIMH in collaboration with HCFA. Other organizations (e.g., professional associations) in the psychiatric field are continuing to undertake other studies, and this research from outside the public sector may also contribute to the development of a psychiatric PPS or other payment reform approach.

Rehabilitation hospitals and distinct-part units

In 1984, HCFA funded a study conducted jointly by The RAND Corporation and the Medical College of Wisconsin (RAND/MCW) to assess the feasibility of developing a PPS for excluded rehabilitation facilities (Hosek et al., 1986). For the study, the excluded facilities were stratified by region and by type (such as freestanding hospital or distinct-part unit) and 100 facilities were selected for the study. Patient data were abstracted from 80 discharges from each of these 100 excluded facilities. The data included the standard items from the HCFA billing form (such as age, diagnoses, procedures) and a variety of additional measures, including functional status at admission and at discharge, mobility, paralysis, complications, and other indicators appropriate for rehabilitation services. Currently, HCFA does not routinely collect these latter measures on its billing instrument.

The data were examined through a series of regression models and related analyses. In the regression analysis, using data routinely available from the HCFA data base, a modest 12 percent of the variation in Medicare covered charges could be explained. In a second regression model, when characteristics of the rehabilitation facilities were not included, but additional data about patient functional status were included, 34 percent of the variation in Medicare covered charges was explained. In the third regression model, when additional characteristics of patients and facilities were added, 39 percent of the variation was explained.

The strong implication from the RAND/MCW study is that patient diagnosis predicts relatively little of the variation in patient resource use in rehabilitation facilities, but that measures of functional status may be substantially better at predicting resource use.

The RAND/MCW report also notes the very high incidence (85 to 90 percent) of rehabilitation patients who receive services after discharge from an acute care hospital. This pattern of service delivery suggests that a payment system for rehabilitation facilities should be developed in coordination with payment policies for acute hospital services and for other post-acute services, such as skilled nursing care. A last important finding of the RAND/MCW study is that the field of rehabilitation does not currently recognize a uniform system of functional status measurement. Validating and reaching consensus on an instrument to measure functional status could likely require several years.

In response to the RAND/MCW study, HCFA requested that RAND (Neu, 1987) investigate the feasibility of developing a transitional PPS for rehabilitation services that would be based on patient and facility characteristics currently available in HCFA data bases. The results of this work confirmed the earlier findings. The variation in Medicare-covered charges across all diagnoses treated in excluded rehabilitation facilities is less than the average variation within DRG's in acute care hospitals. This variation is not further reduced by either specific DRG assignment or patient diagnostic condition (defined as 1 of the 10 conditions broadly recognized in the field of rehabilitation, plus a remainder category as seen in Table 1). One conclusion that could be drawn from this analysis is that a single prospective rate could be set for all diagnoses treated in excluded rehabilitation facilities.

The proposed alternative of a single-rate payment for rehabilitation facilities, however, points to the possibly adverse incentives of a payment policy not linked to prior use of acute hospital services or other types of post-acute services to which apparently similar patients may be directed. Without substantial regulatory controls on the appropriate utilization of rehabilitation services, the opportunities for abuse (e.g., "cream-skimming") become readily apparent. At present, then, a patient classification system for rehabilitation services that can predict appropriate

utilization, costs, and outcomes remains to be developed.

Recognizing the need to develop a basis for predicting appropriate payment and outcomes for rehabilitation services—and for all post-acute hospital services—DHHS (HCFA in conjunction with the Assistant Secretary for Planning and Evaluation) is undertaking a study comparing costs and outcomes across several post-acute treatment settings. The study will also develop measures of patient severity, functional status, and possible other measures that might routinely be collected on HCFA billing instruments. Initially, these measures are being developed for targeted diagnostic conditions, such as stroke and congestive heart failure, that require substantial post-acute services. This study is being conducted by the University of Minnesota (Kane, 1986).

At present, the HCFA policy direction for a PPS for rehabilitation facilities includes several strategies. Further research is being conducted to identify additional patient characteristics on which a PPS may appropriately be based. The product of this effort (in the form of changes in patient information on the HCFA billing instrument) may require several years, and the development of a PPS based on these new data may be even further in the future. In the interim, other policy directions, such as capitation, could prove much more attractive and viable than the development of a separate PPS for excluded rehabilitation services.

Long-term hospitals

HCFA requested that the extramural Health Policy Research Center at Brandeis and Boston Universities examine the feasibility of including under the Medicare PPS the long-term hospitals that HCFA now excludes. Long-term hospitals have a mean patient stay of 25 or more days. This study (Schwartz, 1986) based a more detailed description of these institutions on data from the hospital characteristics files of HCFA and the American Hospital Association and on telephone interviews with a sample of administrators and nursing directors at these facilities. An analysis of the impact on hospital revenues of including these hospitals under PPS was based on HCFA patient billing files.

The excluded long-term hospitals constitute a widely diverse set of institutions. Of the approximately 90 institutions, a little more than one-third may be termed chronic-disease hospitals, organized for the care of persons seriously or terminally ill with multiple diseases. These hospitals are located on the East Coast from Maine to Virginia. Many are located in Massachusetts, where chronic-disease hospitals are separately licensed. The remaining two-thirds of the long-term hospitals include rehabilitation, psychiatric, pulmonary disease, and other types of specialty and general hospitals.

The chronic-disease hospitals typically reported one of two historical antecedents. They were either

institutions with a long history of serving a population with a disease having public health implications—such as tuberculosis—or hospitals more recently formed out of a nursing home or constellation of nursing homes. The former are frequently large institutions, whereas the latter may include only a score or so of hospital-level beds in the midst of a large nursing home. These hospitals share in common a mission of providing care for seriously ill persons who cannot find care in other institutions. The patients are neither acutely ill nor sufficiently independent of life-sustaining technology to be cared for in a traditional nursing home.

The pattern of service delivery for these patients varies widely across States, largely shaped by State licensing laws and payment levels for nursing home services. For example, the patients in Massachusetts who may be cared for in specially licensed chronic-disease hospitals may be cared for in California in special sections of public hospitals where beds may be licensed for either hospital-level or nursing-level care.

An analysis of the impact on revenues of moving from the present cost-based TEFRA payment method to the PPS method indicated gains for institutions with a low Medicare volume and losses for institutions with a high volume. The evidence appears to indicate that the facilities with a low volume are treating Medicare beneficiaries whose benefits have been exhausted, who are therefore left with a substantial number of uncovered hospital days—days that Medicare, Medicaid, and private insurance do not reimburse. In effect, these days are covered under PPS, because a single covered day triggers the PPS payment. Facilities with a large volume of Medicare patients apparently lose financially because of the very long stays of their patients.

For this class of hospitals especially, the new catastrophic benefit should introduce important changes. At least in the short run, extended coverage for inpatient hospital services will shift expenses from beneficiaries and Medicaid to Medicare; long-term hospitals might encounter both greater guaranteed revenues and increased demand. The greater barrier to including long-term hospitals under a Medicare PPS, however, will remain quite similar to that for rehabilitation hospitals. In the majority of cases, patients treated in long-term hospitals are admitted after an acute hospital stay. The treatment episode therefore combines two hospitalizations, one acute and the other post-acute. Separate and uncoordinated payments based on prospectively set rates for both hospital stays, without substantial regulatory controls on the appropriateness of the second hospitalization, would introduce strong incentives to provide the least care in both hospital settings.

In addition, typical patients of chronic-disease hospitals are treated in a wide array of acute and post-acute settings—acute hospitals, chronic-disease hospitals, skilled nursing facilities, etc. This diversity would make it seem imprudent—or even impossible—to structure a PPS that would be equitable across States.

Finally, the provision of adequate payment for the appropriate treatment of chronically or terminally ill patients across a continuum of settings appears to be exactly the problem for which a managed, capitated system offers the best approach. At present, the inclusion under PPS of long-term hospitals that cannot be reclassified as psychiatric or rehabilitation hospitals appears unlikely, particularly in light of policy directions toward a capitated approach.

Discussion

A Medicare payment system for the excluded classes of hospitals will increasingly be shaped by the movement toward a fully integrated capitation policy. A capitated approach for Medicare implies offering the Medicare beneficiary a range of health plan options that resembles the range presently offered by many employers in the private and public sectors. Indeed, traditionally Medicare can best be understood in the context of the evolution of the private health care marketplace. If, for example, multigroup providers and prepaid health plans serve increasing numbers of health care consumers, Medicare can be expected to mirror this shift (Dobson and Langenbrunner, 1987).

The continuing evolution of the health care marketplace indicates that Medicare beneficiaries will be offered a full choice of delivery approaches. These include prospective payment, fee-for-service, or one of several forms of Medicare-approved capitated systems (health maintenance organizations, preferred provider organizations, individual practice associations, and employer-based managed care systems). The current number of capitated Medicare beneficiaries is relatively small but could grow briskly, and beneficiaries might be encouraged (with the incentives

of additional benefits and reduced expenses) to choose capitated options over the next few years.

In this environment, health care providers and managers could be expected to seek appropriate utilization patterns through a packaging or bundling of ever-larger segments of health care services. For example, services may be bundled for illness episodes extending across acute and post-acute treatment. The implications appear obvious for rehabilitation and other types of post-acute treatment settings. Prospectively set payment systems may develop and survive for Medicare beneficiaries electing more traditional options, but may include payments for bundled acute and post-acute services. Changes in drug and treatment technologies affecting length of stay, shifts from inpatient to outpatient treatment, and increasing availability of treatment alternatives will probably reinforce these directions.

The passage of catastrophic legislation may contribute to the longer term uncertainty facing excluded facilities. The underwriting of Medicare payment for unlimited stays may initially generate additional patient demand and revenues. Expansions in other Part A and Part B benefits, though (outpatient prescription drugs, skilled nursing facility care, home health care, and hospice care), signal that the mix of services and patients will likely become more clearly delineated from acute care. Ultimately, results of studies on long-term care and adult day care, and recommendations of the Bipartisan Commission on Comprehensive Health Care (all mandated by the Medicare Catastrophic Coverage Act of 1988) may further affect the nature and demand for services in specialty facilities.

Still, the recent growth in numbers of excluded facilities and units, and the increasing share of Medicare hospital payments being allocated to these providers, have renewed interest in more immediate

Table 6
Medicare payment system design features: TEFRA and PPS

System feature	TEFRA hospitals	PPS hospitals
Differences		
Determination of costs limits	Hospital specific (generally) ¹	Approaching national averaging
Case-mix payment adjustment	Base year only	Ongoing/automatic
Medicare operating surplus to provider	Limited to 5 percent of target amounts	Unconstrained/no limit
Malpractice costs	Excluded from limit	Included in payments
Outlier cases	Included in averages	Additional payments provided
Similarities		
Discharge is unit of reimbursement or payment.		
Special care and ancillaries, as well as routine occupancy costs, are included in the limits or standards prices.		
Payments are adjusted by "pass-through" for direct costs of medical education, capital costs, and costs of kidney acquisition, outpatient care, nonphysician anesthetists.		
Payments are standardized wage-index differences.		
Adjustments are made for indirect costs associated with conducting general medical education.		
Hospitals may receive Medicare payments in excess of actual costs.		
Target amounts and/or rates are known before the year to which they are applied.		

¹Initially, based on seven TEFRA groups defined by characteristics such as bed size and urban/rural location, and rate of increase applied to hospitals over costs. Currently, only rate of increase provisions apply.

NOTES: TEFRA is Tax Equity and Fiscal Responsibility Act of 1982. PPS is prospective payment system.

payment refinements and reform. In this interim period, though, results of recent policy research also point to continuing TEFRA-based payment arrangements for the excluded facilities. Providers and policymakers alike will probably be faced with assessing the longer run acceptability and feasibility of payment policies originally intended by the Congress to be temporary or stop-gap at best. Since the 1983 amendments were enacted, the TEFRA system of limits has been perceived as beneficial only in the context of transition. As a permanent system, it is arguably deficient in several important ways.

TEFRA limits do provide incentives somewhat similar to those of PPS for per case efficiency and often similar limits on inflation of prices. However, the TEFRA incentives for hospitals to curtail costs are weaker than those of PPS—because TEFRA offers less reward for such behavior. Further, although TEFRA and PPS payment policies share several design features, there are also several significant structural differences between them, as seen in Table 6. First, the TEFRA target amounts are largely hospital-specific, whereas PPS uses blends of hospital-specific and Federal and regional standardized payment amount factors. Second, the maximum incentive payment for hospitals that hold costs within TEFRA targets is 5 percent of the target operating cost per case. PPS, on the other hand, places no ceiling on any difference between prospective payments and costs. Third, changes in case mix—which are argued to be substantial for these hospitals since the advent of PPS, because of the incentives to discharge “quicker and sicker”—are not taken into account after the TEFRA base year. PPS, on the other hand, automatically adjusts for case-mix changes as they occur. Fourth, TEFRA has no special provisions for exceptionally lengthy or costly cases, while PPS has an explicit outlier payment method.

From the policymaker's perspective, the overall degree of effectiveness of TEFRA incentives will depend, to some degree, on the proportions of Medicare outlays to excluded hospitals and units. Each of the design distinctions of TEFRA, however, may work to compromise incentives for improving efficiency in the delivery of needed health care, in comparison to a system such as PPS. As a result, excluded facilities can be expected to have, for example, smaller LOS reductions and perhaps smaller reductions in special and ancillary care than are found in facilities under PPS. Lave et al. (1988), for example, found that the providers of psychiatric services remaining under PPS in 1984 responded to incentives in much the way hospitals as a whole did—with significantly reduced lengths of stay (as much as 20 percent). Data in Table 3, on the other hand, indicate that LOS in the aggregate for these facilities has been mostly stable for years 1984-87. These are, of course, not comparable years with the Lave et al. data; the financial constraints imposed by PPS since 1984 have also become tighter, and the ability to adjust treatment patterns may have become more limited for all providers.

Operating surpluses under TEFRA will be correspondingly less than those being generated by providers under PPS. Similarly, CMI levels will be somewhat equivalent to (or even less than) those of their base year—in contrast to recent CMI growth under PPS (see, for example, Carter and Ginsburg, 1985). A very clear implication, then, is that although TEFRA-type limits restrain the rate of growth in expenditures by excluded hospitals, a PPS or other prospectively based approach could encourage more efficient behavior and promote better access for Medicare beneficiaries.

In fact, opting for a system that incorporates at least some prospectively based design features might offer a number of advantages for both HCFA and excluded providers. The first and most obvious advantage would be longer run cost control and efficiency. As already discussed, TEFRA incorporates incentives for efficiency that are much weaker than those under PPS, because hospitals cannot currently share in surplus revenues. Hospitals could—at least theoretically—gain more under some type of modified PPS, as all savings (surplus) then accrue to the individual hospital. Moreover, efficient hospitals would be rewarded and poorly managed hospitals penalized, unlike the present situation. Similarly, HCFA could become a more prudent buyer, because in the long run, savings resulting from increased efficiencies would be realized. Such savings will probably not accrue under TEFRA.

A second advantage would involve greater flexibility. As with acute care services and the private health plan option, facilities of these four types could realize greater flexibility in spending a fixed payment. The ability to extend coverage for certain services, or to substitute more cost-effective approaches (e.g., outpatient services in psychiatric care), could be welcomed by providers. Certainty of revenues could also promote more rational planning.

Another flexibility issue relates to the TEFRA regulations under which excluded facilities continue to operate. Because each facility has its own target amounts based on its costs in Federal fiscal year 1983, it is difficult for historically underfunded facilities to achieve a more equitable payment under Medicare. (This situation could be exacerbated under coverage for catastrophic care, because payment rules use base-year amounts but will be applied to an increased level of care.) If facilities had high costs then—whether the result of overstaffing and administrative inefficiencies or a more resource-intensive mix of patients—these costs continue to be integral in determining current payments. Thus, when the American Hospital Association (1988) reports that 30 percent of all rehabilitation facilities encountered operating losses in 1986, policymakers may discount or even disallow such findings in favor of other proxy measures, such as continued high market entry over the last 5 years.

The specific design features for some type of modified prospective payment policy for these facilities would be less than straightforward. Under a

recent award to Health Economics Research, Inc., though, the Department has begun to examine the effects of one model to refine TEFRA for psychiatric services. Payment rates would be adjusted by one or more facility characteristics (e.g., urban or rural location, bed size, unit or freestanding), and a modified outlier policy for extremely costly cases developed.

Whether refinements to TEFRA will be developed for other specialty groups remains uncertain at this point. Regardless, as the Medicare program moves more aggressively toward promotion of a strongly competitive health care marketplace, excluded providers may also want to consider moving beyond the vulnerabilities of the current TEFRA-based environment.

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