U.S. Department of Health and Human Services
Assistant Secretary for Planning and Evaluation
Office of Disability, Aging and Long-Term Care Policy

Medicare's Post-Acute Care Benefit:

Background, Trends, and Issues to be Faced

January 1999

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This report was prepared under contract #HHS-100-97-0010 between HHS's DALTCP and The Urban Institute. For additional information about this subject, you can visit the DALTCP home page at http://aspe.hhs.gov/_/office_specific/daltcp.cfm or contact the ASPE Project Officer, Jennie Harvell, at HHS/ASPE/DALTCP, Room 424E, H.H. Humphrey Building, 200 Independence Avenue, S.W., Washington, D.C. 20201. Her e-mail address is: Jennie.Harvell@hhs.gov.

MEDICARE'S POST-ACUTE CARE BENEFITS: Background, Trends, and Issues to be Faced

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January 1999

Prepared for
Office of the Assistant Secretary for Planning and Evaluation
U.S. Department of Health and Human Services
Contract #HHS-100-97-0010

Task Order on "Synthesis and Analysis of Medicare Post-Acute Care Benefits and Alternatives." The views expressed are those of the authors and should not be attributed to the Urban Institute, its trustees, or its funders. The authors thank Barbara Manard and Bob Kane for insightful comments and suggestions on earlier drafts, and Felicity Skidmore for editing this version. Gregory Capaldini provided valuable assistance in preparing the document. Any errors are our own. Jennie Harvell is on the staff of the Office of Disability, Aging, and Long Term Care Policy. The other authors are analysts at The Urban Institute.

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EXECUTIVE SUMMARY

The escalating scale of expenditures for Medicare's post-acute care benefits--from about $2.5 billion in 1986 to more than $30 billion in 1996--has catalyzed concern among policy makers that use of these services has become excessive and does not necessarily improve the health of beneficiaries. Acting on these concerns, the 1997 Balance Budget Act (BBA), among other things, mandated prospective payment systems for skilled nursing facilities (SNFs), home health care, and rehabilitation facilities, and required a legislative proposal on a prospective payment system for long-term care hospitals. Changing from retrospective to prospective payment for post-acute care represents a major policy response to the expenditure escalation. But it does not address many other cost, quality, and access concerns.

Foremost among these is concern that Medicare continues to treat the different types of post-acute care providers differently--in terms of payment, eligibility, coverage, and certification -even though the different types of providers may be becoming more and more similar in the types and intensity of services they deliver, as well as the types of patients they serve. Other concerns include policy-induced incentives to discharge patients for financial rather than quality of care reasons and access problems faced by heavy-care patients.

In response to this changing policy environment and the policy concerns it is raising, the Office of the Assistant Secretary for Planning and Evaluation in the Department of Health and Human Services sponsored a study to examine potential problems with Medicare's post-acute care services and explore promising solutions. As the first product of that study, this report provides background on:

- Recent growth in Medicare's post-acute care expenditures and utilization, and Medicare policy changes that have contributed to these trends.

- Growth in the supply and changes in the distribution of the four major types of post-acute care providers.

- Characteristics of beneficiaries, providers, and market areas that are associated with differential use of particular types of post-acute care providers.

- Analytic and policy issues that need to be addressed in the effort to find effective policy solutions to the problems that now exist with respect to Medicare's post-acute care benefits.

Trends in Utilization and Expenditures

Until very recently, Medicare payments for all types of post-acute care have been growing at 25- 35 percent a year, depending on the type of provider and exact time period covered. They are now declining but are still substantially higher than the roughly 8 percent annual growth that characterizes other parts of the Medicare program. SNF and home health care account for most of the Medicare post-acute care spending (and therefore much of its spending growth). SNF spending growth was due primarily to increases in the numbers of users and increased use of ancillary services, while home health care growth was fueled by increasing numbers of users and increased number of visits per user.

As a result of this enormous growth, Medicare payments for SNF and home health care have grown from 3 percent of all Medicare expenditures in 1986 to 15 percent in 1996. During the same period, Medicare spending for inpatient hospital care declined from 61 percent to 49 percent. (It should be noted that these statistics understate the actual shift from acute- to post-acute care, because post-acute care hospitals are included in the inpatient total.)

Changes in Provider Supply

Between 1990 and 1996, the supply of all major types of Medicare post-acute care providers experienced double-digit growth. The number of SNFs increased from 10,500 to 15,500, the number of home health care providers from 5,800 to 9,900, the number of rehabilitation hospitals and distinct part units from 813 to 1,048, and the number of long-term care hospitals from 90 to 185. Ownership of post-acute care providers has also been shifting, with for-profit status becoming more common. Within these overall trends, the regional distribution of different types of post-acute care providers has remained uneven, with some regions being generally under- or over-represented relative to their shares of beneficiaries and other regions having disproportionately large (or small) shares of some but not all provider types. Regional patterns of use are broadly consistent with the regional patterns of relative supply.

Medicare Eligibility and Coverage Policies

A major reason for the enormous expansion in post-acute care expenditures and supply has been changes in SNF and home health care eligibility and coverage guidelines, some of which were mandated by court decisions. The 1986 court ruling in *Fox v. Bowen* resulted in revised guidelines for the SNF benefit, effective in 1988, making more explicit the conditions that constituted eligibility for the SNF benefit and forbidding fiscal intermediaries from using "rule of thumb" to facilitate claim denial. The 1988 ruling in *Duggan v. Bowen* resulted in revised guidelines for the home health care benefit, effective in 1989, which included qualifying patients for skilled observation (and therefore for the home health benefit) with stable health needs -rather than expectations

of improvement, as the former criterion had specified. Predictably, denial rates dropped for both types of claims following implementation of the new guidelines.

Payment Reforms Mandated by the BBA

The BBA mandated establishment of prospective payment systems (PPS) for SNFs effective July 1998, home health care effective October 1999, and rehabilitation facilities effective October 2000. It also required that a PPS proposal be developed for long-term care hospitals by October 1999.

It is important to note that (except for home health care) these systems are expected to be based on per diem payments rather than the per episode PPS system instituted in 1984 for acute care hospitals. Per diem systems help contain costs by establishing in advance a unit price for each service. But they do not contain incentives to limit the volume of services delivered. Episode systems, by placing the provider at risk for the entire costs of an episode, embody incentives to control price and volume--although they may present additional quality-of-care problems through their incentive to reduce length of stay.

Skilled Nursing Facilities. BBA moved SNFs into a per diem PPS that covers routine, ancillary, and capital costs--including post-hospital SNF services for which benefits are provided under Part A and most items previously paid for under Part B. The new system is being phased in, with payment for the first three years based on a combination of a casemix-adjusted Federal rate and (in shrinking importance) a facility's historical costs. By the fourth year, the historical cost component is scheduled to disappear. The BBA also included a consolidated billing measure, requiring the SNFs to bill for all services delivered for Part A stays (with specific exceptions to cover hospital-related services generally beyond the capacity of SNFs to provide). This consolidated billing requires SNFs to bill for services under Part B, including services delivered by independent therapists and other non-staff entities.

Home Health Care Providers. The BBA mandated an interim payment system (IPS) to capture Medicare savings until PPS is implemented for these providers. The IPS modified Medicare's home health payment method in two ways. First, it reduced the national cost limits for each service type from 112 percent of the average cost per visit to 105 percent of the median cost. Second, it added a new cost limit criterion to the payment formula. Instead of payments being based on the lower of the agency's actual costs or aggregate cost limit for the year, payments are now based on the lowest of the previous two limits or an average per beneficiary expenditure limit. Responding to concerns that the IPS would adversely impact both providers and beneficiaries, Congress marginally liberalized the IPS limits in the 1998 omnibus appropriations legislation.

Rehabilitation Hospitals. The BBA gave the Secretary of Health and Human Services broad discretion in designing a PPS for these providers, subject to

Congressional mandates to: (1) establish patient casemix groups and develop a method of assigning patients within these groups; (2) assign each group a weight that reflects the relative facility resources used by the group; and (3) determinine a prospective payment rate for each group payable under Medicare.

Long-Term Care Hospitals. The BBA required the Secretary to collect the data necessary to develop, establish, administer, and evaluate a casemix-adjusted PPS for these hospitals. A legislative proposal is also to be developed for establishing and administering a payment system that includes a patient classification system that reflects differences in resource use.

Characteristics and Outcomes of Post-Acute Care Users

The policy concern that Medicare may be paying different amounts to different types of post-acute care providers for patients with essentially similar care needs raises important questions: What is the extent of patient overlap? Are payments too high or too low for one type of provider relative to others, for a given quality of care? Most fundamental, what are the appropriate resource levels required to achieve desired outcomes for patients with particular needs?

Little information is available to address these questions. Hospital discharge patterns by DRGs of post-acute care patients show that the same DRGs can be found in the caseloads of all four provider types. At the same time, however, the distribution of patients by DRG is by no means uniform across provider type. In addition, patients within a given DRG can vary in terms of specific diagnosis, conditions, and co-morbidities, throwing back into question how much overlap there really is at this more refined classification level.

The heterogeneity within DRGs has led researchers to look for patient characteristics that might be associated with different types of post-acute care providers. Two conspicuous candidates are health or functional status and availability of informal care. With respect to the former, people who are very frail or disabled are less likely to be able to withstand (or benefit from) intensive rehabilitation therapy. With respect to the latter, availability of informal care almost certainly increases the likelihood that post-acute care can be provided on a home care basis.

Certain hospital characteristics are also associated with the type of post-acute care to which patients are discharged. Larger or teaching hospitals, for example, are more likely than other acute care hospitals to discharge patients to rehabilitation services, plausibly because such hospitals are more likely to contain rehabilitation units. Proprietary hospitals are more likely than non-profit hospitals to discharge patients to home health care, plausibly because they are more likely to own home health agencies. Some interactions between types of post-acute care have also been noted. For example, rehabilitation facility bed supply is positively associated with the rate of

Medicare home health care use, suggesting that these two types of care are used in sequence for significant numbers of beneficiaries.

On the relation between patient outcomes and costs, there is a paucity of information beyond the findings of a few studies. One study--comparing patients with hip fracture or stroke in rehabilitation facilities versus subacute SNFs and traditional SNFs--found that stroke patients had better functional recovery and community placement chances as a result of the (higher cost) rehabilitation facilities' environment. But the higher cost therapy did not confer additional benefits on hip fracture patients. Another study found that patients with hip fracture or stroke had better functional improvement in rehabilitation facilities or home care than similar patients discharged to nursing homes--suggesting, in turn, that more targeted discharge placement can achieve functional improvements at little or no additional cost to Medicare.

Unresolved Policy and Analytical Issues

The 1997 BBA provisions mandating PPS for Medicare's post-acute care benefit were an important policy response to the recent, rapid increases in post-acute care expenditures. The BBA provisions, however, are only part of a continuing process to reform Medicare's post-acute care services. Other important cost, quality, and access issues relevant to post-acute care under Medicare were not considered by the BBA. The following questions enumerate some of these concerns.

Are increasing expenditures evidence that Medicare's system of post-acute care services is broken? Greater than expected increases in expenditures are almost always a catalyst for a policy response. It is reasonable to ask, however, whether the growth in spending was justified because of increasing need for post-acute care, particularly in light of declining growth in inpatient hospital spending. Although there is evidence to suggest that some spending may have been inappropriate (e.g., recent GAO reports of fraud and abuse in the Medicare home health program), it is crucial that we improve our estimation of the extent to which the increase in spending reflects real increases in need for post-acute care.

What is the goal of Medicare's home health program? One factor behind the recent growth in Medicare's home health spending was the increase in number of visits beneficiaries received. That trend has raised questions about whether Medicare's home health services have been transformed into a long-term care benefit. We do not know the number of people who are using the benefit in this way. More important, there is lack of agreement about whether Medicare should, as a matter of policy, continue to cover persons needing extended home care services.

What will be the access, quality, and cost consequences of the BBA provisions? Designed to curb future spending increases for post-acute care providers, the BBA provisions could have adverse consequences for beneficiaries, as well as some providers. The prospective payment systems could provide incentives for SNFs,

home health care providers, rehabilitation facilities, and other providers to contain costs by selecting for relatively light care patients or by giving fewer services. Similar to the situation after Medicare implemented hospital PPS, there is the danger that patients will be discharged "quicker and sicker." To the extent that post-acute care services in general are constrained by the BBA provisions, increases in hospital readmissions could also result.

Will the supply of post-acute care providers change and how will these changes affect Medicare beneficiaries? According to anecdotal reports, some home health agencies are closing in the wake of the IPS mandated by the BBA. Potential changes in the supply of home health care providers are an indication of the effects of the BBA provisions on the supply of post-acute care providers. Depending on the specific features of the PPS systems to be developed for rehabilitation facilities and long-term care hospitals, incentives may be created that will decrease (or increase) their supply as well. Changes in the supply of post-acute care providers will likely affect beneficiaries' use of acute and post-acute care services.

What is the effect of eligibility and coverage policies on access, quality, and costs? The BBA post-acute care provisions did not extensively address eligibility and coverage policies. Because eligibility and coverage rules are potentially very powerful policy levers, they are likely to receive future legislative attention, either to improve the efficiency with which post-acute care services are delivered or at least to capture additional Medicare savings. As witnessed by changes in the past, any eligibility and coverage policy changes are likely to have important effects on access to post-acute care services.

Is integration of services on the basis of a "patient-centered" payment system a solution for Medicare post-acute care? Despite the major payment reforms mandated by the BBA, some observers note that "Medicare will have to make comprehensive structural changes to its benefit and payment policies" to improve the coordination of services and contain costs in the long run. One strategy that has been considered by HCFA is an integrated payment system that is "patient-centered." In this type of system, payments would be based on the type and intensity of services needed to achieve optimal outcomes, regardless of provider category. This system is conceptually appealing and may be a desirable goal for reforming payment of Medicare post-acute care services. But the urgency and speed with which this strategy is pursued depend on several practical issues.

First, a major motivation behind the strategy is the notion that Medicare beneficiaries with similar needs receive post-acute care services from different providers at different costs to Medicare. To the extent that the patient populations are substantially different across post-acute care providers, the need for an integrated payment system becomes less urgent. Second, there is a paucity of information on quality outcomes associated with use of post-acute care. But the level of effort and time required to analyze jointly patient characteristics, amount and types of services, and outcome-based quality measures is substantial. Thus as a practical matter, an

integrated payment system that includes quality outcomes may be able to cover only a portion of the Medicare post-acute care population. Third, assuming that normative payments for post-acute care could be developed for specific groups of patients, decisions have to be made about how the post-acute care payment will be administered. Assignment of the episode payment for post-acute care to any single entity will be controversial and politically sensitive, because of the potential impact of any particular choice on the multiplicity of acute and post-acute care providers.

I. INTRODUCTION

Medicare, which insures over 38 million elderly and disabled people, provides coverage for beneficiaries to access physician, hospital, skilled nursing facility (SNF), home health, hospice, and various therapy services, as well as medical equipment. Although hospital care, which is used by 20 percent of beneficiaries each year, continues to be the single most expensive component of Medicare, recuperative or rehabilitative services provided to people after acute-care hospital stays are the fastest growing. Approximately one-quarter of Medicare beneficiaries who enter acute-care hospitals are subsequently discharged to inpatient rehabilitation facilities, SNFs, or home health care providers (Gage, 1998). In addition to post-acute care services covered in such settings, a small number of beneficiaries are admitted to long-term care hospitals for both acute and post-acute care.[1] Post-acute care is also provided in various outpatient settings (e.g., comprehensive outpatient rehabilitation facilities), but these account for only a small share of Medicare post-acute care expenditures.

Until the mid 1980s, post-acute care accounted for only a small percentage of total Medicare expenditures and was viewed as a cost-effective and less intensive alternative to extended acute-care hospital stays. After implementation of Medicare's acute-care hospital prospective payment system (PPS) in 1984, however, Medicare spending for post-acute care services began to grow rapidly. Medicare payments for SNFs and home health care, for example, shot up from $2.5 billion in 1986 to 12 times that much in 1996. Not surprisingly, the supply of each type of post-acute care grew commensurately.

The rapid increase in post-acute expenditures catalyzed concern among policy makers that use of these services had become excessive and did not necessarily improve the health of Medicare beneficiaries. Acting on these concerns, Congress and the administration enacted provisions in the 1997 Balanced Budget Act (BBA) mandating--among other things--prospective payment systems for SNFs, home health care, and rehabilitation facilities to curb future spending.[2] These provisions represent a major policy response to the expenditure trends.

They do not address many extant cost, quality, and access concerns about Medicare's post-acute care services, however. A major one is that differences among the various types of post-acute care providers--in services offered, service intensity, and types of patients served--are becoming less distinct, even though Medicare payment, eligibility, coverage, and certification policies for each type of provider continue to differ. Patients with similar needs may be receiving similar types and intensity of services for which Medicare is paying different amounts depending on the care setting. Patients may

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[1] It should be noted that Medicare beneficiaries can also be covered for home health care, rehabilitation hospital services and long-term care hospital services without having a prior stay in an acute care hospital.

[2] For a detailed discussion of these issues see Barbara Gage, *The Balanced Budget Act: Implications for Post-Acute Services*, The Commonwealth Fund, August 1998.

also be receiving amounts of care reflecting the coverage policies of their providers rather than the services required by their medical condition. Despite these concerns about overlap in services and patients among the diverse providers of post-acute care services, we currently have very little information about its extent. Although SNFs, home health care, rehabilitation facilities, and long-term care hospitals all provide skilled or general nursing and various rehabilitation services, at least some of the differences between them may reflect differences in the average intensity of particular services provided. Compounding the problem, we do not currently have necessary information on post-acute care settings that produce optimal outcomes for different types of patient conditions.

A second concern is that current policies give providers incentives to discharge patients for financial rather than quality of care reasons. For example, SNFs have an incentive to discharge patients when coverage limits of 100 days in SNFs are exceeded. Hence, the system may be forcing Medicare beneficiaries who need post-acute care to use multiple providers during a single episode of illness, resulting in higher Medicare costs but not necessarily better outcomes. In addition, if the BBA-mandated PPSs do not adequately adjust for patients' health conditions, problems with access to appropriate post-acute care can be expected, most likely for the sickest and most disabled beneficiaries.

The Office of the Assistant Secretary for Planning and Evaluation in the Department of Health and Human Services sponsored a study (of which this is the first report) of the changing environment of Medicare's post-acute care benefit. The goals of the first part of the study are to identify the extent to which current research can address relevant questions and to identify areas that require further research. The goal of the second part of the study is to elucidate--through discussions with knowledgeable individuals in government, research, provider, and consumer communities--ongoing issues regarding Medicare post-acute care services, and alternative solutions for future reform efforts.

Information in this report is based on reviews of published and unpublished research, Medicare policy documents, and primary data analysis completed at the Urban Institute for related projects. We focus on SNFs, home health, rehabilitation facilities, and long-term care hospitals--the four major providers of Medicare post-acute care services--and address the following issues:

- Growth in utilization and expenditures for post-acute care services, changes in Medicare policies that have contributed to those trends, and increases in post-acute care spending relative to those of other Medicare services, in particular inpatient hospital care.

- Growth and distribution of the diverse post-acute care services providers.
- Factors that differentiate the use of one type of provider relative to others, including characteristics of beneficiaries, providers, and market areas.
- Policy and analytic issues relevant to Medicare post-acute care services reform.

II. TRENDS IN UTILIZATION AND EXPENDITURES

The rapid growth in post-acute care expenditures, which has slowed down very recently but is still substantially higher than the 8 percent annual growth rates averaged by other parts of Medicare, characterized all types of post-acute providers, and has substantially changed the distribution of total Medicare spending.

Post-acute Medicare spending growth. The past decade's growth in Medicare's payments for and availability of post-acute care services has been extraordinary. Payments to SNFs and home health providers have grown at double digit rates since the late 1980s, averaging 35 percent a year for SNFs and 25 percent for home health care. SNF payments rose from $2.5 billion to $11.7 billion between 1990 and 1996. Home health payments grew from $3.9 billion to over $18.3 billion during the same period (ProPAC, 1997). Payments to rehabilitation facilities and long-term care hospitals rose on average about 25 percent and 30 percent a year, respectively, between 1990 and 1994 (ProPAC, 1996).

For SNF growth, a driving force has been increasing numbers of users. Between 1990 and 1996, the number of people using SNFs nearly doubled (from 638,000 to 1.1 million) and the total number of days covered increased from 25.1 million to 40.2 million (Table 1). Days per user declined, however, from 39.4 to 35.1 (ProPAC, 1997). Much of the early growth in SNF spending was due to changes in coverage guidelines that led to fewer coverage denials. More recently, however, growth in SNF payments also has been affected by increased provision of ancillary services, such as therapy. Part A payments for SNF ancillary services (e.g., therapies, medications) represent a substantial part of total SNF spending, accounting for almost half of SNF payments in the mid 1990s (CBO, 1995). This increase does not include payments for therapy services to SNF patients made under the Medicare Part B insurance, which are excluded from SNF spending estimates.

TABLE 1. SNF and Home Health Users and Utilization, 1990 to 1996

	1990	1996
SNF		
Total Users (*millions*)	0.6	1.1
Users per 1,000 Enrollees	19.0	30.0
Total Days (*millions*)	25.1	40.2
Days per Person Served	39.4	35.1
Home Health		
Total Users (*millions*)	1.9	3.7
Users per 1,000 Enrollees	57.0	98.0
Total Days (*millions*)	69.5	285.7
Visits per Person Served	36.0	77.0

SOURCE: ProPAC, 1997. *Medicare and the American Health Care System: Report to Congress*.

Growth in home health has been fueled by both increasing numbers of users *and* increased number of visits per user. Between 1990-96, the number of home health care users nearly doubled (from 1.9 million to 3.7 million) and the annual utilization rate rose from 57 users per 1,000 enrollees to 98 per 1,000. During the same period, the number of visits per user *more than doubled*, from 36 to 77 visits per user per year (see Table 1).

Spending for rehabilitation facility services doubled between 1990 and 1994 (from $1.9 billion to $3.9 billion). The growth in number of users was almost as high, increasing from 172,000 discharges in 1990 to 288,000 in 1996. Payments for long-term care hospitals quadrupled between 1990 and 1994 (increasing from $200 million to $800 million). The number of discharges per year slightly more than doubled (increasing from 17,000 to 36,000) (ProPAC, 1997).

Medicare spending shifts. This growth in post-acute care utilization has shifted the distribution of total Medicare payments. For SNF and home health services, Medicare payments grew from 3 percent of all Medicare expenditures in 1986 to 15 percent in 1996. The share of hospital expenditures declined from 61 percent to 49 percent of all Medicare expenditures.[3] This shift toward post-acute care providers is due to multiple factors. First, implementation of Medicare's acute-care hospital prospective payment system in 1984, with its fixed payments per stay, provided strong incentives to discharge patients as quickly as possible, thereby increasing the number of people needing post-hospital recuperation or rehabilitation in other settings. Second, changes in technology allowed more complex services to be delivered in less intensive settings. Third, and perhaps most important, changes in Medicare eligibility and coverage guidelines in the late 1980s increased access to SNFs and home health care (ProPAC, 1995).

The shift in Medicare spending toward post-acute care is highlighted by the increasing proportions of total Medicare payment growth accounted for by post-acute care services. Table 2 shows increases in Medicare spending for three periods: 1974-83 (pre-acute-hospital PPS), 1983-90 (implementation of acute-care hospital PPS), and 1990-95 (after full implementation of acute-care hospital PPS[4]). The top panel details the dollar changes in Medicare spending by service category: total Medicare spending, hospital inpatient spending, and spending for SNFs and home health care.

[3] It is important to note that spending for rehabilitation facilities and long-term care hospitals are included in the hospital inpatient category. Hence, the decline in the share of spending for other acute care hospital services was actually greater.

[4] Changes during this period cannot be attributed solely to the impact of acute-care hospital PPS, because court cases led to revised coverage guidelines issued by HCFA for SNFs and home health providers. These changes are discussed in detail in the next section.

TABLE 2. Increases in Medicare Payment by Category: 1974-1995			
Category	**Time Periods**		
	1974-1983	**1983-1990**	**1990-1995**
Increase in Total Medicare Payments (millions)	$42,263	$47,973	$57,566
Increase in Inpatient (millions)	$26,839	$22,197	$22,228
Increase in SNF/Home Health Care (millions)	$1,474	$3,837	$17,260
Inpatient as Percent of Total Medicare Spending Growth	63.5%	46.3%	38.6%
SNF/Home Health Care as Percent of Total Medicare Spending Growth	3.5%	8.0%	30.0%
Combined Inpatient and SNF/Home Health Care as Percent of Total Medicare Spending Growth	67.0%	54.3%	68.6%
SOURCE: Derived from Table 13, *HCFR, 1997 Statistical Supplement*.			

The bottom panel shows the share of the increases coming from inpatient hospitals and SNF/home health care, respectively. Hospital inpatient payments accounted for 63.5 percent of the growth in total Medicare payments between 1974 and 1983, while SNF and home health services accounted for only 3.5 percent of spending growth. After hospital PPS was implemented, hospital payments as a proportion of total Medicare spending growth declined, while SNF/home health care spending growth increased. In the most recent period, 1990-95, inpatient hospital services accounted for 38.6 percent of the growth in total Medicare payments, while SNF/home health care payments accounted for almost as much (30 percent). It is important to recall that these figures *overstate* the growth in hospital inpatient spending and understate growth in post-acute care, because spending for rehabilitation facilities and long-term care hospitals is included in the hospital inpatient category.

As Table 2 clearly shows, SNF and home health care spending has become an important component of growth in total Medicare expenditures. It is also interesting to note from Table 2 that combined inpatient hospital and SNF/home health care spending accounted for almost the same proportion (67 percent versus 68.6 percent) of total Medicare spending growth before acute-care hospital PPS was implemented as in the most recent period. It is appealing to speculate that much of the increased spending for SNF and home health services has simply displaced the spending for in-hospital acute care that would have occurred in the absence of PPS. More rigorous analysis is required, of course, before any fair inference can be drawn. But we leave this finding as a beacon to guide future research on potential substitution between hospital inpatient acute-care and post-acute care of some type.

III. MEDICARE POLICIES FOR POST-ACUTE CARE

Although the immediate cause of the dramatically increased Medicare spending for post-acute care is increased use, a major underlying reason is modification in the policies governing Medicare post-acute benefits. It is important to understand that each type of provider is governed by different Medicare policies, and that these differences affect the distribution of use among the different types of providers.

In this section we look first at eligibility, coverage, cost sharing, and provider certification. We then review payment policy. Interestingly, although the first four policy parameters have had major impacts on Medicare post-acute care use patterns, the BBA focused primarily on payment reform.

A. Eligibility, Coverage, Cost Sharing, and Provider Certification[5]

Of the four types of policy covered in this subsection, eligibility and coverage changes have been by far the most dramatic. Changes in eligibility and coverage of SNF and home health care, indeed, have transformed Medicare's post-acute benefits. Changes in cost sharing and provider certification have played a considerably smaller role.

Skilled Nursing Facilities

Current eligibility for the SNF benefit is restricted to persons who have had a hospital stay of at least three days in the past 30-day period. Coverage is limited to a maximum of 100 days for each spell of illness. There is no deductible for SNF care. But after the first 20 days of a stay, a daily coinsurance payment ($95.50 in 1998) is required of the beneficiary. In addition to these eligibility, coverage, and cost-sharing provisions, SNFs must have a transfer agreement with a hospital to accept patients recommended for SNF care; sufficient staff to provide 24-hour nursing services; a physician who supervises patient care and is available 24 hours a day on an emergency basis; and dietary, pharmaceutical, dental, and medical social services available.

In response to the expenditure increases in all types of post-acute care, the Health Care Financing Administration (HCFA) sought to control the trend by increasing the stringency with which Medicare's fiscal intermediaries (FIs) scrutinized claims.[6] With respect to SNF claims, this led to a widely prevailing practice of developing "rules of thumb" to make coverage determinations, which reduced the need for detailed claim

[5] See Appendix A for full detail.

[6] A fiscal intermediary is an entity that has a contract with HCFA to determine and make Medicare payments for Part A benefits and to perform other related functions.

review on an individual basis.[7] This increasing FI arbitrariness drew the attention of advocacy groups, providers, and government agencies--and ultimately led to a court decision mandating change in the interpretation of the Medicare SNF benefit.

In 1986, as a result of *Fox v. Bowen*, FIs were expressly forbidden from using rules of thumb to deny coverage. Further, they were not permitted to deny any physician-ordered SNF (or home health) care--even if such care was only maintenance therapy--without providing specific clinical evidence about why a particular service should not be covered. The clinical evidence requirement made it much more difficult, as well as more costly, for FIs to deny claims (Leaf and Uili, 1990).

The response was predictable. In September 1988, the denial rate for SNF claims was 16.8 percent. In 1989 and 1990 the denial rates were 11.3 percent and 12.3 percent, respectively (Manard, Fama, and McParltlin, 1990). Between 1988 and 1996, SNF Medicare expenditures increased from $0.9 billion to $11.7 billion and utilization increased from 12 users per 1,000 enrollees to 30 (ProPAC, 1997).

Home Health

Currently, Medicare provides home health benefits to beneficiaries who require intermittent or part-time skilled nursing care and therapy services, and who are homebound, defined flexibly to include individuals who "occasionally leave the home." These services must be prescribed (and re-certified every 62 days) by a physician. But there is no prior hospitalization requirement or limit on the number of visits a person may receive. Nor is there any copayment or deductible associated with home health visits (although persons receiving durable medical equipment, for example, are responsible for a 20 percent copayment).

Prior to the Omnibus Budget Reconciliation Act of 1980 (OBRA 1980), the home health benefit was split between Medicare's Part A and Part B, with each component subject to different coverage and payment requirements. Both Part A and B home health benefits were subject to 100-visit limits. The Part A benefit required a prior hospital stay (of at least three days). No cost sharing was required for post-hospital benefits under Part A, but coinsurance was required under Part B (until repealed in 1972).

OBRA 1980 liberalized the home health benefit, while effectively consolidating it under Part A. The three-day prior hospitalization requirement and 100-visit limit were removed and for-profit home health agencies were allowed to become Medicare-certified, even in states that did not license proprietary agencies. By 1983, Medicare home health expenditures had increased to $1.4 billion, from $726 million in 1980. Utilization had increased to 45 users per 1,000 enrollees, from 34 in 1980. And the number of visits per user had increased to 27 per person, from 23 in 1980 (ProPAC, 1994).

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[7] Smits et al. (1982) also found wide inconsistencies among FIs in coverage determinations for Medicare's nursing home benefit.

Partly because of these increases, and partly because of reports that the home health benefit was being delivered to ineligible individuals (Kenney and Moon, 1997), HCFA issued new administrative instructions to Medicare's fiscal intermediaries (FIs) to control home health utilization more tightly. Home health care could now be provided only on a part-time (less than eight hours a day) *and* intermittent (four or fewer days a week) basis, and only to persons who were absolutely homebound.

Despite the concurrent introduction of hospital PPS, which could have been expected to increase home health expenditures with its incentive for rapid discharge, the new instructions proved effective in controlling home health care costs. FI denial rates for Medicare's home health benefit increased from 2.5 percent in 1984 to 7.9 percent in 1988. Utilization peaked in 1985 at 51 users per 1,000 enrollees and then dropped to 48 per 1,000 by 1987. Visits per user had dropped back to the 1980 level by 1987. And annual expenditure growth slowed to 6.8 percent in 1987 from the 1980-1983 average annual rate of 18 percent (ProPAC, 1994).

As in the case of the SNF benefit, a court ruling (*Duggan v. Bowen*) forced HCFA to revise the eligibility and coverage guidelines for home health. Effective July 1, 1989 HCFA changed the benefit language to include home health care that was part-time *or* intermittent, clarified the meaning of the term *intermittent* to mean up to 28 hours per week of skilled nursing and aide services with up to 35 hours available upon review, and liberalized *homebound* to include individuals who occasionally leave the home. Patients now also qualified for skilled observation if a reasonable potential for complications or possible need to change treatment existed--a reform that allowed those with stable health needs to become eligible. Need for skilled observation, in turn, qualified the individual for the home health benefit. In addition, the home health benefit now allowed for therapy services simply to maintain function, whereas the previous criterion required that patients show improvement from such services (U.S. GAO, 1996). These revisions made it harder for FIs to deny claims, made new groups of beneficiaries eligible for services, and made it possible for beneficiaries to receive more services.

Home health utilization and expenditures responded quickly to the liberalized coverage guidelines. Between 1988 and 1996, Medicare home health spending increased from $1.9 billion to $17.2 billion. This annual growth rate of nearly 37 percent was more than three times the growth rate for the rest of the Medicare program. Over the same period, service utilization increased from 48 users per 1,000 enrollees and 23 visits per user to 98 per 1,000 enrollees and 77 visits per user (ProPAC, 1997).

Rehabilitation and Long-Term Care Hospitals

Eligibility for both rehabilitation and long-term care hospital benefits from Medicare is physician-determined. Rehabilitation hospitals must demonstrate that 75 percent of their patients have at least one of ten specific conditions--nine related to neurological and musculoskeletal disorders, plus burns. Patients must require frequent physician involvement, 24-hour rehabilitation nursing, generally at least three hours of

therapy a day, and a coordinated group of skilled professionals. In order for Medicare to cover rehabilitation hospital services, patients are expected to improve as a result of therapy. For long-term care hospital admission, Medicare coverage for inpatient services is included under the basic Part A hospital benefit.

Both types of hospitals also have a deductible of $764 for each spell of illness (the same as for the Medicare benefit for an acute care hospital) and a daily coinsurance rate of $191 after the first 60 days.

Both types of hospitals also have the same maximum length of stay--90 days per spell of illness. To remain certified, rehabilitation hospitals must demonstrate that 75 percent of their patients do indeed receive three hours of therapy a day. Long-term care hospitals must preserve an average length of stay of at least 25 days.

All post-acute care providers, except SNFs, may be deemed to meet certification requirements by a national accreditation body found to have requirements that meet or exceed Medicare conditions of participation. The Health Care Financing Administration has recommended against deemed status for SNFs, in part because accrediting organizations were found not to have comparable standards and processes. In addition, others have expressed concern about permitting deemed status in these settings because of the nature of services provided (e.g., minimal physician involvement) and vulnerability of patients served.

B. Reimbursement

Cost-related reimbursement survived in the Medicare program for post-acute care until passage of the BBA of 1997. That legislation mandated establishment of prospective payment systems, on a phased-in schedule, for all types of post-acute care providers. For SNF implementation, the phase-in period was specified as July 1998 through 2001. For home health care, PPS was originally specified to begin in October 1999. Public pressure to reopen the issue and administrative delays have since led to postponement of initial implementation until the year 2000, with a possible transition period of up to four years. For rehabilitation hospitals, the phase-in period was specified as October 2000 through 2002. For long-term care hospitals, the legislation called for a PPS proposal to be developed by October 1999 with no specified phase-in schedule.

It is important to note here that the type of PPS expected for post-acute care providers differs from the system implemented for acute inpatient hospitals in a way that affects provider incentives. For inpatient hospitals, the reimbursement rate is based on per-episode payments. Such a system, by putting providers at risk for total costs of an entire episode, provides incentives to limit both the price and quantity of services. Its built-in incentive to discharge patients as quickly as possible, however, raised concerns that quality of care could be jeopardized. Various studies of the effects of hospital PPS (e.g., Des Harnais et al., 1987) suggested, however, that PPS, while reducing hospital use, did not produce deterioration in the quality of care.

The PPS system for SNFs is based on per diem payments, and per diem systems are anticipated for rehabilitation hospitals and long-term care hospitals. Such systems help contain costs by establishing unit prices for services in advance but do not give providers an incentive to limit the number of units delivered. Both per diem and per episode payments will require safeguards to monitor potential threats to quality of care created by financial incentives inherent in either approach. A key issue is whether one system is more amenable to monitoring potential quality impacts.

The BBA provisions for each major type of post-acute provider are discussed in turn, followed by a brief review of the BBA's post-acute hospital transfer policy, which can also be expected to affect utilization.

Skilled Nursing Facilities

Prior to the BBA, Medicare reimbursed SNFs on three different bases, depending on three components of costs. In general, routine operating services were paid on an actual cost basis up to a per diem limit, ancillary services were paid on a reasonable cost basis, and capital was paid on a pass-through basis. Separate cost limits applied to hospital-based and freestanding SNFs, and to urban and rural SNFs.[8] New providers were exempt from these limits for the first three years of operation. And facilities could receive exceptions payments if they could demonstrate that their Medicare patients casemix was sufficiently higher than average to warrant higher payments.

Ancillary services costs constituted a growing share of SNF expenditures and amounted to about half of all SNF payments in 1995 (CBO, 1995). This trend is not surprising, since ancillary services were not subject to a per-diem cost limit and, though subject to medical necessity criteria, were rarely reviewed by Medicare (U.S. GAO, 1996). Most ancillary services were reimbursed under Medicare Part A. But if they were not directly furnished by the SNF or if patients were not covered by Part A, ancillary services could be reimbursed under Medicare Part B. One study estimated that, in 1992, approximately 15 percent of therapy charges provided to SNF patients were billed to Part B (Liu, 1993). In general, however, discontinuities in Part A and Part B accounting systems meant that Medicare could not readily monitor total program spending for SNF patients.

The BBA moved SNFs into a per diem, prospective payment system that covers routine, ancillary and capital costs, including items and services for which payment had previously been made under Part B, with a few exceptions (e.g., physician and psychologist services). Under the new system, a SNF receives a payment that is derived from a blend of (a) a casemix-adjusted Federal rate and (b) a facility-specific rate based on the facility's historical costs. This blend will change over a three-year

[8] Low volume SNFs (i.e., those with less than 1,500 Medicare days in a year) could have elected to be paid at a rate that was equal to the lesser of the relevant limit or 105 percent of mean operating and capital costs of all (both hospital-based and freestanding) facilities in their region. This option was implemented to lessen the administrative burden on low use SNFs with the goal of increasing access to SNF care for Medicare beneficiaries.

period in a way that weights the Federal rate ever more heavily--with payments reflecting 25 percent of the Federal rate in the first year, 50 percent in the second year, 75 percent in the third year, and 100 percent thereafter.

The Federal rate is set at a level equal to a weighted mean of freestanding facility costs plus 50 percent of the difference between the freestanding mean and a weighted mean of all SNFs' (hospital-based and freestanding) costs. Separate rates were derived for SNFs in urban and rural areas, and further adjustments were made for geographic variations in wage rates and casemix. The Federal rates are also adjusted to account for a facility's casemix using a resident classification system (Resource Utilization Groups III). Exception payments for casemix are eliminated from the Federal rate.

Facility-specific rates are based on fiscal year 1995 cost reports, trended forward. Those rates are updated from 1995 by the SNF market basket percentage increase minus one percentage point. Included in the facility-specific per diem rate is an estimate of the amount payable under Part B for covered SNF services furnished during fiscal year 1995. In contrast to the Federal rates, facility-specific rates include exceptions to the routine cost limits.

The BBA also provided for a consolidated billing measure. This is interpreted to mean that essentially all Medicare claims for services delivered in the SNF--including those billed under Part B--be submitted by the SNF, regardless of whether the service was provided by in-house staff or external entities (e.g., independent therapists).[9] Consolidated billing requirements are effective for SNF residents whose stays are covered under Part A. These measures were intended to secure a full accounting for all costs associated with treating Medicare beneficiaries in the facilities, thus providing an incentive to limit the previously unrestrained growth in ancillary services.

The SNF PPS and consolidated billing measures have raised numerous questions, which HCFA is currently exploring, including whether payments for non-therapy ancillary services were set appropriately.

Home Health

Prior to the BBA, home health agencies were paid on a retrospective cost-related basis, subject to limits established at 112 percent of the mean cost per visit for freestanding agencies. Rural agencies received an extra payment. Cost limits were determined separately by type of visit and were updated annually using the latest available market basket to reflect cost increases (except for the labor-related portion of the payment limit, which was adjusted by the current hospital wage index). Each agency was also subject to an aggregate cost limit equal to the limit for each type of service multiplied by the number of visits of each type provided by that agency. There used to be an additional adjustment for hospital-based home health agencies, but this was removed several years ago.

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[9] The BBA listed specific exceptions for hosptial-related services beyond the capacity of SNFs to provide and outside the careplan for the patient (e.g., magnetic resonance imaging).

The BBA required that a home health PPS go into effect in October, 1999 and mandated an interim payment system (IPS) to capture Medicare savings until PPS implementation. Since then the implementation date has been extended to the year 2000 and the IPS has been revised.

The original IPS modified Medicare's home health payment method in two ways. First, it reduced the national cost limits for each type of service, from 112 percent of the average cost per visit to 105 percent of the median cost per visit. Second, it added a new criterion to the payment formula: an average per beneficiary expenditure limit. Agency payments are now based on the lowest of (a) actual costs, (b) the aggregate cost limits, or (c) the per beneficiary expenditure limit.

This new limit is based on 98 percent of the 1994 average per patient expenditures for each agency and the region. Seventy-five percent of the agency's historical costs are blended with 25 percent of the average regional expenditures to allow payments to reflect both agency-specific historical case-mix differences and variations in local practice patterns. Such a blend allows agencies with high cost patients to have a higher limit while moderating it with regional levels. Agencies with high costs in 1994 will have higher cost limits than agencies that had lower costs in 1994. Agencies that had lower cost patients in 1994 will face more restrictive limits in 1998 if their patient population grows sicker or if they start treating more chronic care patients needing higher numbers of aide visits (Gage, 1999).

In addition to general concerns about the new home health care cost-containment provisions in the IPS, two issues raised particular controversy, with anecdotal evidence quoted to support the arguments against them. The first was retroactive implementation. Although the final regulations were not issued until August 1998, the IPS rates were applied to all payments starting October 1, 1997. Since agencies had already estimated their expected payments under the old system and planned their behavior accordingly, there were many claims that retroactive applications had led to forced service reductions and even agency closings. The second issue was lack of legislative attention to factors that could lead to lower payments following enactment of the BBA. Specifically, agencies might face smaller increases in payment rates over time and possibly even lower absolute payments.

Spurred by advocates for the elderly, people with disabilities, and home health providers, the 105th Congress held hearings to revisit the IPS issues. The potential need to reform the IPS (rather than concentrate on the planned PPS system) took on added importance as a result of HCFA's announcement that year 2000 computer issues would further delay implementation of several BBA provisions, including the home health PPS. These delays--which HCFA said were necessary to ensure delivery of even routine Medicare services--would leave the IPS for home health in effect until October 1, 2000.

Congress made minor adjustments to the IPS for home health agencies in the 1998 omnibus appropriations legislation. It increased the beneficiary per visit limit from 105 percent to 106 percent of the national median. It increased beneficiary limits for older agencies. It set per beneficiary limits for newer agencies at the national payment median and, for start-up agencies (in 1998), at 75 percent of the national median. Finally, the legislation delayed a 15 percent payment reduction scheduled to take effect October 1, 1999 by one year, to coincide with the revised implementation schedule for the home health PPS.

Rehabilitation Facilities and Long-Term Care Hospitals

Rehabilitation facilities and long-term care hospitals have been paid historically on a cost-related basis subject to per discharge (case) limits. (They were excluded from the hospital PPS implemented in 1984.) The Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) established inpatient, facility-specific payment limits equal to the product of the facility's base year costs per discharge updated to the current year and its total discharges. A facility with operating costs below its payment limit ceiling received its costs plus an incentive payment equal to the lower of (a) 50 percent of the difference between the ceiling and its costs or (b) 5 percent of the ceiling. Facilities with costs above the target were paid the ceiling plus 50 percent of the difference between the ceiling and its costs up to a maximum of 110 percent of the ceiling. New providers were exempt from the payment ceilings for the first three years of operation. Facilities could also request exceptions if their costs were above the target payments. Capital costs were paid on a pass-through basis, subject to certain limitations.

Paying hospitals on the basis of per capita spending in a base year raised concerns that high-cost patients would have access problems once a provider's TEFRA limit was set. In addition, relying on spending in a base year created inequities between older and newer providers. Many have expressed concern that the financial incentives inherent in Medicare's payment policy disadvantage older providers relative to new providers.

Three provisions in the BBA were included to address the inequity created as a result of setting limits based on each provider's base year. First, the BBA changes incentives for new providers by limiting payment to the lesser of the provider's costs or 110 percent of the national median target amount for that class of providers (e.g., rehabilitation facilities). Second, it permits providers with base years beginning before October 1990 to rebase using their average costs from three recent cost reporting periods. Third, the BBA limits facility target amounts to the 75th percentile of the 1996 target amounts, adjusted for inflation.

The BBA further modified rehabilitation hospital payments by establishing a PPS for them that is to be phased in between October 2000 and the end of September 2002. The Secretary of Health and Human Services has broad discretion in the design of this system, subject to the following Congressional mandates: (1) to establish classes of patient groups and develop a method of assigning specific patients from rehabilitation

facilities within these groups; (2) to assign each casemix group an appropriate weighting that reflects the relative facility resources used by a group; and (3) to determine a prospective payment rate for each Medicare rehabilitation facility patient.[10]

The phase-in will be accomplished by blending the TEFRA-based hospital's target amount that would have been paid under Medicare Part A and the payment rate established by the Secretary. The blend would be two-thirds the TEFRA rate in the first year, and one-third in the second year. The PPS would be fully implemented by October 2002. During the phase-in period, the prospective payment amounts are to be kept budget neutral by setting total payments for rehabilitation hospitals equal to 98 percent of the payments that would have been made if the PPS had not been enacted.

For long-term care hospitals, the BBA required the Secretary to collect data to develop, establish, administer, and evaluate a casemix-adjusted PPS. A legislative proposal is also to be developed for establishing and administering a payment system that includes a patient classification system that adequately reflects differences in patient resource use. This proposal is to be submitted to Congress by October 1, 1999.

Hospital Transfer Policy

As of October 1, 1998 the BBA required that hospital discharges falling within ten specific DRGs and having lengths of stay below the national average for those DRGs will be treated as a transfer for payment purposes. The provision applies to patients transferred from a PPS hospital to a PPS-exempt hospital or unit, SNF, or home health care. Hospital payments will be based on Medicare's current per diem rate policies affecting transfers between PPS acute care hospitals -with a transfer defined as any patient discharged with one of the ten DRGs that is admitted to a post-acute care provider within the next three days.

As implemented by HCFA, the 10 DRGs for which the transfer policy applies are strokes (DRG 14), amputations (DRG 113), major joint procedures (DRG 209), other hip and femur procedures (DRGs 210 and 211), hip fractures (DRG 236), skin grafts (DRGs 263 and 264), organic disturbances and mental retardation (DRG 429), and tracheostomies (DRG 483) (U.S. GPO, 1998).

[10] The Secretary is also required to adjust the classifications and weighting factors to correct for forecast errors and to reflect changes in treatment patterns, technology, casemix, number of discharges paid for under Medicare, and other factors that might affect the relative use of resources.

IV. THE SUPPLY AND REGIONAL DISTRIBUTION OF POST-ACUTE CARE PROVIDERS

The enormous increase in the supply of all types of post-acute care providers has already been noted. In this section, we provide more detail on this increase in supply, followed by a discussion of the regional distribution of provider types and their use. Since the distribution of post-acute care needs among beneficiaries is unlikely to differ substantially by region, any large differences in these distributions by area of the country at least suggest that there might be casemix overlap among provider types.

Supply Increases

All major types of post-acute providers experienced double-digit growth between 1990 and 1996 (Table 3). The supply of SNFs overall increased from just over 10,500 to 15,000 (48 percent), with the supply of hospital-based SNFs growing much faster (82 percent) and the supply of swing-bed hospitals much slower (11 percent) than the overall average. The supply of home health care providers grew by 71 percent over the period, with the supply of freestanding providers growing slightly faster than the supply of hospital-based providers. Rehabilitation facilities grew at an overall rate of 29 percent over the period, with rehabilitation hospitals growing at 40 percent compared with 27 percent for distinct-part units. Distinct-part units still account for the great majority (about 85 percent of the total), however. The supply of long-term care hospitals more than doubled, from 90 to 185.

Distribution of Providers and Ownership, by Region

Table 4 shows the distribution of Medicare-certified providers by region, with the distribution of Medicare beneficiaries for comparison. If patient condition were the only factor driving the distribution, one would expect the percentages of each type of provider to more or less match the percentage of beneficiaries in an area. For the Mountain region, this is very roughly what we find. For the other regions, however, there are differences worthy of note. West South Central, with 9.7 percent of the beneficiaries, has higher proportions than that of all post-acute provider categories, but enormously higher shares of home health providers (27.4 percent) and long-term care hospitals (30.8 percent). South Atlantic, with 18.8 percent of beneficiaries, has less than its fair share of all types of post-acute facilities, but most underrepresented are home health care providers (11.4 percent).

With respect to provider ownership (not shown), there are also substantial differences across the country. Over 80 percent of SNFs in Arkansas, Oklahoma, and Texas are for profit, for example, compared with only 11 percent in North Dakota (AHCA, 1997).

For home health care, ownership has been shifting over time. In 1989, for example, 25 percent of home health agencies were government-owned, 35 percent for-profit, and 39 percent not-for- profit. By 1994, there had been a considerable shift toward for-profit ownership, with 17 percent government, 49 percent for-profit, and 34 percent not-for-profit (U.S. GAO, 1996). As in the case of SNFs, the ownership distribution differs substantially by region. Data for 1994 indicate that in New England, ownership was 5 percent government, 35 percent for-profit, and 60 percent not-for-profit. In the West South Central region, the distribution leans much more heavily toward for-profit status, with 13 percent government, 67 percent for-profit, and 20 percent not-for-profit.

For rehabilitation hospitals, according to 1994 data, the distribution of ownership was 4 percent government, 62 percent for-profit, and 33 percent not-for-profit. For distinct-part units, the ownership distribution was 14 percent government, 13 percent for-profit, and 73 percent not-for-profit.

For long-term care hospitals, 1994 data show 34 percent government, 36 percent for-prpofit, and 30 percent not-for-profit (ProPAC, 1996). This represents a significant change from 1988--when the ownership was split 50-50 between not-for-profit and government auspices (ProPAC, 1992). The change largely reflects the emergence of a single provider, Vencor, Inc., which now dominates the market. Further expansion in the supply of long-term care hospitals has become more costly due to amendments to the payment rules that discourage construction of new facilities (Adams, 1998). But long-term care hospitals might still prove attractive for systems that are striving to provide a complete continuum of care (i.e., full service integrated systems). And long-term care status might also prove an attractive option to solve excess capacity problems in the existing supply of acute care hospital beds. Finally, long-term care hospitals may be attractive because they are the only post-acute care provider for whom a date to implement a prospective payment system has not been required by law.

TABLE 3. Number of Post-Acute Care Providers, 1990 and 1996

Provider Type	1990	1996	Percent Change 1990-1996
Skilled Nursing Facility	10,508	15,553	48
Hospital-Based	1,145	2,084	82
Free-Standing	8,120	12,086	49
Swing-Bed Hospital	1,243	1,383	11
Rehabilitation Facility	813	1,048	29
Hospital	135	189	40
Distinct-Part Unit	678	859	27
Long-Term Care Hospital	90	185	106
Home Health Agency	5,793	9,886	71
Hospital-Based	1,543	2,593	68
Free-Standing	4,135	7,104	72
Other	115	189	64

SOURCE: ProPAC, 1997. *Medicare Post-Acute Care Providers: Coverage and Payment Policies*.

TABLE 4. Distribution of Beneficiaries and Medicare-Certified Providers, by Region					
Division	**Medicare Beneficiaries**	**SNFs**	**Home Health**	**Rehab Hospitals**	**Long-Term Care**
New England	5.6%	7.7%	4.4%	3.7%	14.1%
Middle Atlantic	16.0	11.8	6.7	13.8	8.7
South Atlantic	18.8	15.1	11.4	13.4	14.1
East North Central	16.9	18.3	14.5	19.3	10.3
East South Central	6.5	6.6	6.1	5.2	3.8
West North Central	7.6	11.7	11.3	8.8	4.9
West South Central	9.7	11.2	27.4	18.6	30.8
Mountain	5.3	5.4	7.8	6.3	6.5
Pacific	13.5	12.3	10.5	11.0	7.0
SOURCE: ProPAC, 1997. *Medicare and the American Health Care System: Report to Congress*.					

Distribution of Use by Region

Regional distribution by use (Table 5) is generally as expected, given the distribution of provider supply. With respect to Medicare beneficiary use of SNFs, the national average is 43.5 discharges per 1,000 beneficiaries per year. The regional breakdown shows highest use in the West North Central (61.8 per 1,000). This is the region with the highest share of SNFs relative to its beneficiary share. New England is next (55.0 per 1,000), another region where the SNF share is high relative to the beneficiary share. All the other regions cluster around the national average except Middle and South Atlantic (at 34.7 and 35.8 per 1,000, respectively). Both these regions have lower proportions of SNFs than beneficiaries.

TABLE 5. Post-Acute Care Provider Use, by Region and Provider Type				
Census Division	**Skilled Nursing Facility[1]**	**Rehabilitation Facility[1]**	**Long-Term Care[1]**	**Home Health[2]**
National	43.5	8.8	1.2	6,127.4
New England	55.0	8.0	5.1	7,710.1
Middle Atlantic	34.7	11.1	1.1	3,150.0
South Atlantic	35.8	7.3	0.8	5,623.1
East North Central	48.0	9.1	0.7	4,399.3
East South Central	39.4	9.8	0.6	11,242.5
West North Central	61.8	7.5	0.6	3,080.0
West South Central	48.2	15.0	2.5	18,804.0
Mountain	43.2	7.9	0.8	3,884.6
Pacific	42.4	4.2	0.4	2,674.9

SOURCE: ProPAC, 1997. *Medicare and the American Health Care System: Report to Congress*.
NOTE: These counts underestimate total use because they do not include services delivered to Medicare beneficiaries enrolled in managed care plans.

1. Discharges per 1,000 beneficiaries.
2. Visits per 1,000 beneficiaries.

Home health care use by beneficiaries nationwide averages about 6,100 visits per 1,000 beneficiaries per year. By far the highest use is in West South Central (18,800 visits), which has almost three times as many home health providers as would be

expected based solely on its share of Medicare beneficiaries. Next comes East South Central (11,200 visits), more unexpected given that its share of home health care providers just about reflects its share of beneficiaries. New England is also above average (7,700 visits) as is its share of home health care providers. At the low end of the spectrum are Middle Atlantic (3,100) and West North Central (3,000). Middle Atlantic is well under the national average in provider supply. But West North Central goes against the typical pattern in that it is higher than the national average in home health care provider supply.

For rehabilitation hospitals, the national average is 8.8 discharges per 1,000 beneficiaries per year. Here again there is wide regional variation, from a high of 15.0 per 1,000 in West South Central, which has about twice its expected share of rehabilitation hospitals, to a low of 4.2 per 1,000 in Pacific, with a somewhat lower than expected share of rehabilitation hospitals.

For long-term care hospitals, New England has much the highest use (5.1 per 1,000), and nearly three times its expected share of long-term care hospitals. West South Central is next (2.5 per 1,000), and has over three times its expected share of long-term care hospitals. Most of the other regions show use rates of under 1 discharge per 1,000 beneficiaries. All but one of these (Mountain) have considerably smaller than expected shares of long-term care hospital supply.

V. CHARACTERISTICS AND OUTCOMES OF POST-ACUTE CARE USERS

The policy concern that Medicare may be paying different types of post-acute care providers differently for patients with similar conditions raises important questions. The first is how extensive the patient overlap is among the different types of providers. The second, related to the first, is the extent to which personal and health status characteristics differentiate use of one type of provider relative to others. On the assumption Medicare is paying different amounts in cases where similar patients are served by different types of post-acute care providers, the third question is the extent to which payments are too high or too low for one type of provider relative to others, given quality of care considerations. In other words, what are the appropriate resources needed to achieve desired outcomes for patients with particular needs? A final question is also important: How much do Medicare policies affect not only patient outcomes but also provider choice?

The level of detail from many of the data sources permits only preliminary inferences about the extent of patient overlap among the providers. We know relatively more about the characteristics of individuals served by different post-acute care providers. Few studies have compared resource use and patient outcomes across post-acute care providers. This section reviews the limited evidence, with a focus on factors that differentiate the use of one type of provider relative to others. We first examine hospital discharge destinations by DRG. We then review research findings on beneficiary, provider, and market area characteristics that have been found to be associated with post-acute care use. Finally, we highlight findings from the relatively few studies that have compared patient outcomes among different types of post-acute care providers.

A. Hospital Discharge Destinations by DRG

Post-acute care, by definition, is provided after patients are discharged from hospital stays. Prior research has examined the discharge destination of representative samples of Medicare hospital patients as well as persons discharged from hospitals with DRGs that are commonly associated with post-acute care use (e.g., strokes, hip fractures). Such studies include large scale analyses of Medicare claims data by the RAND Corporation (Steiner and Neu, 1993; Neu, Harrison and Heilbrunn, 1989) and the Prospective Payment Assessment Commission (ProPAC, 1996), and other analyses using Medicare claims data merged with survey data on Medicare beneficiaries.

The discharge patterns for post-acute care patients give an initial impression of the extent to which patients with the same DRG are served by different types of post-acute care providers. This pattern is illustrated in Table 6, which presents the distribution of discharge destinations for the 32 most prevalent DRGs involving post-

PPS acute hospital use of SNFs, home health care providers and rehabilitation facilities in 1995.[11] The 32 DRGs account for 62 percent of all post-acute care episodes.[12] Table 6 uses tabulations from related work at the Urban Institute (Gage, 1998). For the DRGs taken together, 4 percent of the episodes resulted in the use of rehabilitation facilities and no other post-acute care provider. One-quarter of the cases involved only SNF use and half involved only home health agency (HHA) use. Almost one-fifth of the episodes involved the use of more than one type of provider.

The patterns in Table 6 indicate that most types of post-acute care cases--identified by the DRG of the prior hospital stay--appear in the caseloads of all three types of post-acute care providers. But some of them are conspicuously absent from the caseload of some provider types. For example, less than 1 percent of the episodes with chronic obstructive pulmonary disease (DRG 88) received post-acute care in rehabilitation facilities. In general, rehabilitation facilities, because of their goals and Medicare certification rules, serve primarily post-acute care patients who have "rehabilitation DRGs" rather than "medical DRGs." Among the more common DRGs found among rehabilitation facilities are stroke (DRG 14), procedures related to hip fracture repair (DRGs 209, 210), and back and neck procedures (DRGs 214, 215). Although SNFs and home health care providers are relatively common sources of post-acute care for most of the DRGs, home health agencies tend to have a particularly high prevalence of patients who have medical DRGs involving pulmonary or cardiovascular disease.

Table 6 provides only a broad-brush overview of the overlap question, however, primarily because each DRG encompasses a broad array of diagnoses, conditions, and co-morbidities within it. In addition, DRG information does not reflect personal characteristics of post-acute care patients (e.g., age and the availability of able and willing caregivers) that may influence the services needed and provider settings used. Recognition of the heterogeneous population within DRGs led researchers to examine the effects of personal characteristics and other factors that might influence post-acute care use of Medicare beneficiaries. Some studies focused on persons with the same DRGs.

[11] The 32 DRGs were derived by combining the top 20 most prevalent DRGs involving use of SNF, home health care and rehabilitation facilities respectively. Because of overlap in DRGs among the providers, we identified 32 unduplicated DRGs.

[12] Episodes were created by linking all post-hospital events of SNFs, home health care providers, and rehabilitation facilities that were not separated by 31 days.

TABLE 6. Discharge Destinations of Post-Acute Care (PAC) Users, by Selected DRGs						
DRG #	DRG Name	All Locations (Number)	Discharge Destinations (Percentage)			
			Rehab Only	SNF Only	HHA Only	More Than One PAC
Total number/Average percentage		76,081	4.08	26.16	50.62	19.13
001	Craniotomy age >17 except for trauma	517	15.86	23.60	30.56	29.98
005	Extracranial vascular procedures	492	7.32	9.96	69.31	13.41
014	Specific cerebrovascular disorders except TIA	7,943	10.65	31.85	28.23	29.27
015	Transient ischemic attack and precerebral occlusion	1,477	2.78	20.99	63.37	12.86
079	Respiratory infections and inflammations age >1	2,471	0.40	46.86	43.59	9.15
088	Chronic obstructive pulmonary disease (COPD)	3,203	0.72	15.89	75.74	7.65
089	Simple pneumonia and pleurisy age >17 with cc	4,862	0.29	33.90	57.67	8.14
104	Cardiac valve procedures w/cardiac catheter	424	5.66	8.96	70.75	14.62
106	Coronary bypass with cardiac catheter	1,857	2.80	7.32	77.44	12.44
107	Coronary bypass w/o cardiac catheter	1,052	2.85	5.89	82.41	8.84
112	Percutaneous cardiovascular procedures	753	1.33	5.58	87.38	5.71
113	Amputation for circulatory system disorders except UP	603	6.80	44.11	22.55	26.53
121	Circulatory disorders w AMI	1,855	0.54	23.29	66.31	9.87
124	Circulatory disorders except AMI	533	1.69	3.56	90.24	4.50
127	Heart failure and shock (CHF)	6,825	0.35	18.59	74.08	6.97
132	Atherosclerosis with cc	674	0.59	10.53	83.53	5.34
138	Cardiac arrhythmia and conduction disorders	1,506	0.53	16.73	76.36	6.37
140	Angina pectoris	720	0.00	9.44	87.08	3.47
143	Chest pain	405	0.74	13.09	83.21	2.96
148	Major small and large bowel procedures with cc	2,459	0.89	20.17	64.29	14.64
174	G.I. hemorrhage with cc	1,832	0.38	26.97	64.41	8.24
182	Esophagitis gastroent and miscellaneous digestive disorders	1,556	0.32	18.51	74.36	6.81
209	Major joint and limb reattachment procedures	10,950	9.84	19.42	31.30	39.44
210	Hip and femur procedures except major joint age	4,392	4.96	45.01	13.34	36.68
211	Hip and femur procedures except major joint age	780	7.95	38.21	16.03	37.82
214	Back and neck procedures with cc	883	11.10	11.10	43.49	34.31
215	Back and neck procedures without cc	337	10.09	12.17	53.41	24.33
236	Fractures of hip and pelvis	999	4.70	40.54	22.62	32.13
239	Pathological fractures and musculoskeletal and con	1,206	2.16	30.35	41.29	26.20
243	Medical back problems	1,238	3.39	28.19	45.15	23.26
294	Diabetes age >35	1,091	0.37	17.78	74.79	7.06
296	Nutritional and miscellaneous metabolic disorders >1	2,746	0.62	34.41	54.73	10.23
320	Kidney and urinary tract infections age >17	2,026	0.25	41.91	49.46	8.39
416	Septicemia age >17	1,992	0.55	43.83	45.38	10.24

TABLE 6 (*continued*)						
DRG #	DRG Name	All Locations (Number)	Discharge Destinations (Percentage)			
			Rehab Only	SNF Only	HHA Only	More Than One PAC
429	Organic disturbances and mental retardation	746	0.27	56.84	34.45	8.45
468	Extensive o.r. procedure unrelated to principal	795	3.40	29.94	46.16	20.50
471	Bilateral or multiple major joint procs of low	343	19.24	12.24	19.24	49.27
478	Other vascular procedures	1,152	2.34	17.10	67.36	13.19
483	Tracheostomy except for mouth larynx or pharynx	386	10.36	44.30	24.61	20.73

B. Beneficiary, Provider, and Market Area Characteristics and Post-Acute Care Use

Prior research has provided generally consistent and logical associations between beneficiary, provider, and market area characteristics and post-acute care use. The literature on post-acute care use includes findings on these groups of factors as they relate to the use particularly of SNFs, home health care providers, and rehabilitation facilities. The following sections highlight findings from that research, focusing on specific characteristics that differentiate the propensity to use one type of provider relative to others. More detailed information is presented in Appendix B.

Personal and Health Characteristics

The personal and health characteristics found to be associated with either use of post-acute care generally, or the propensity to use one type of provider relative to others, tend to reflect (a) health or functional status or (b) availability of informal care. These two factors, in turn, are logically related to some basic differences between the major types of post-acute care providers. For example, people who are very frail or disabled may not be able to withstand the intensive therapy regimen (i.e., three hours per day minimum) intended for rehabilitation facility patients. Similarly, severely disabled individuals may be more easily cared for in SNFs than in community settings with home health services. On the other hand, availability of informal care increases the likelihood that post-acute care could be provided in the community, or in institutional settings where the goal is to return to the community, rather than in institutional settings explicitly designed to provide long-term care.

Age, gender, and race. Older age increases the likelihood of post-acute care use, because it reflects both increased frailty, which requires more extended care after a hospital stay, and increased formal care needs as a consequence of a weakened informal care network. Persons at older ages are also more likely to use SNFs than younger persons, while younger persons are more likely to use home health care and rehabilitation facilities (Neu, Harrison, Heilbrunn, 1989; Steiner and Neu, 1993; Gage, 1998). Younger persons are also more likely to be able to tolerate the intensive therapy provided by rehabilitation facilities and to have access to the informal care necessary to receive post-acute care in community settings.

Women are more likely than men to use any post-acute care services, in part because they are less likely to have informal support from spouses (Steiner and Neu, 1993). Women also live longer than men and are more likely, in general, to be a provider of informal care for their spouses. Hence, after discharge from hospitals, women are more likely to need Medicare post-acute care services than men.

Whites have a greater propensity than blacks to use SNF services (Liu, Wissoker, and Rimes, 1998; Steiner and Neu, 1993; Gage, 1998). Although earlier studies found that blacks were more likely than whites to receive post-acute care services provided by home health and rehabilitation services, Gage (1998) found that race was not a significant predictor of rehabilitation service receipt in 1995 after controlling for other factors.

Availability of informal care. Studies have also examined measures that more directly reflect availability of informal care, such as living arrangement and marital status. Findings are generally consistent with the notion that availability of informal care reduces use of Medicare paid services. At the same time, informal care tends to reduce the likelihood of institutional care relative to home health care (Kane, Finch, Chen, et al., 1994).

Dual eligibility. Findings on the effect of Medicaid eligibility status on Medicare post-acute care use appears to be changing over time. In 1987-88, being eligible for Medicaid as well as Medicare slightly increased the use of SNFs, but slightly decreased the use of home health or rehabilitation services. By 1995, dually eligible persons were 7 percent more likely to use rehabilitation facilities and 53 percent more likely to use SNFs than other Medicare beneficiaries (Gage, 1998).

Health and functional status. Not surprisingly, measures of illness severity are associated with increased likelihood of post-acute care use (Steiner and Neu, 1993). Longer prior hospital stays for persons with the same DRGs, or the presence of a secondary diagnosis, for example, increased the likelihood of use of rehabilitation services, SNFs or home health care providers.

Poor functional status measured in different ways has consistently been found to increase likelihood of post-acute care use. The explanatory power of functional status in predicting such care has been strong both for samples of all hospital discharges and for persons with the same prior hospital DRG (e.g., stroke, congestive heart failure). Severe disability also has been found to increase the likelihood of SNF use relative to home health care use among persons who used either (Liu, Wissoker and Rimes, 1998).

Health factors are particularly important in predicting a Medicare beneficiary's propensity to use rehabilitation, skilled nursing facility, and home health services, either individually or in combination. One recent study analyzed the factors associated with using these services to determine the extent to which use is driven by medical need or

influenced by other factors, like payment policies (Gage, 1998). After controlling for DRGs, age, prior disability, hospital readmissions, race, sex, Medicaid status, and geographic regions, the study showed that discharge destinations for most of the 10 post-acute "transfer" DRGs did not change from what they were in a simple bivariate comparison. For example, in both the bivariate and multivariate analyses, pneumonia (DRG 89), congestive heart failure (DRG 127), chronic obstructive pulmonary disease (DRG 88), and patients with nutritional and metabolic disorders (DRG 296) are most likely to use only home health care. Joint patients (DRG 209) are most likely to use home health along with either rehabilitation or SNF services. They are also more likely to use home health (9.8 percentage points more) than SNFs.

Provider Characteristics

Characteristics of PPS hospitals have been studied to determine how they affect post-acute care use in general, as well as the relative use of SNFs, home health care and rehabilitation services.

Affiliation. A recurring theme about hospital characteristics and post-acute care use is the increased likelihood of post-acute care use when acute-care hospitals from which patients are discharged have an organizational affiliation with post-acute care providers. For example, larger hospitals have been found to be more likely to discharge patients to rehabilitation services, plausibly because such hospitals are more likely to contain rehabilitation units (Steiner and Neu, 1993). Similar conclusions have been inferred for teaching hospitals. For-profit hospitals have been found more likely to discharge patients to home health care, plausibly because for-profit hospitals are more likely than not-for-profit hospitals to operate home health agencies. Finally, greater likelihood of post-acute care use of stroke and COPD patients has been observed for hospitals recorded as owning post-acute care providers (Blewett, Kane and Finch, 1995).

Medicare volume and length of stay. For specific DRGs (e.g., hip fracture), persons discharged from hospitals with relatively greater volume of Medicare patients are more likely to receive post-acute care (Blewett, Kane and Finch, 1995). A discharging hospital's average length of stay, however, is more generally and negatively associated with the likelihood of using post-acute care, whether SNF, home health care, or rehabilitation services. In this case, average length of stay in the acute care hospital may be a proxy for local practice patterns, with longer hospital stays mitigating the need for post-acute care.

Market Area Characteristics

Supply of post-acute care providers, urban versus rural location, and Medicaid long-term care policies have also been found to influence use of Medicare's post-acute care services.

Provider supply. Although supply of all types of post-acute care providers has grown rapidly in recent years, the large numbers and geographic distribution of SNF and home health care mean that such services should be more accessible to more Medicare beneficiaries than rehabilitation facilities and long-term care hospitals. The latter two are relatively few in number and tend to be geographically concentrated, restricting use of services to many fewer beneficiaries, regardless of level or type of need.

Beyond the global picture of post-acute care provider supply, research has found some important relationships between the use of the different types of providers. Although greater supply of a particular type of post-acute care provider tends to increase utilization of that provider, it also tends to decrease utilization of other types. For example, higher proportions of Medicare enrollees used home health services in areas with fewer nursing home beds (both Medicare certified and other beds) (Kenney and Dubay, 1992, Cohen and Tumlinson, 1997). This finding suggests that, for some post-acute care patients, SNF and home health care services might be substitutable. Similarly, SNF and rehabilitation services have been found to act as substitutes for some of the most common DRGs resulting in post-acute care use (Steiner and Neu, 1993). In contrast, rehabilitation bed supply was found to be positively associated with the rate of Medicare home health use, suggesting that rehabilitation and home health care may be used in sequence for some beneficiaries.

Sequential use of SNFs, home health care, and rehabilitation facilities is not uncommon. MedPAC (1998) found, for example, that 17.7 percent of first post-acute provider stays were followed by a second post-acute provider stay, and the vast majority of the multiple provider use involved more than one type of provider (e.g., rehabilitation facilities followed by home health). What is not clear is which patterns of service use applies to which groups of patients, and little is known about optimal patterns of multiple post-acute care provider use.

Urban and rural areas. Use of post-acute care is more likely in urban than in rural areas, which is consistent with the greater availability of post-acute care providers in urban areas. Such an inference is supported by findings that, after controlling for supply of SNFs and home health agencies, urban versus rural location did not differentiate likelihood of use. It is also true, however, that people living in rural areas who use either type of provider are more likely to use SNF services (Liu, Wissoker, and Rimes, 1998).

State Medicaid policies. Because SNFs and home health care providers also deliver long-term care services financed in large part by Medicaid, state Medicaid policies governing those services can be expected to affect Medicare spending. Studies of interactions between Medicaid and Medicare confirm this expectation, finding a generally inverse relationship between expenditures for the two programs (Kenney, Rajan, and Soscia, 1998). Medicare home health use is also higher in states that face greater fiscal pressure concerning their Medicaid budgets (Cohen and Tumlinson, 1997). Particularly in recent years, some states have implemented a Medicare

maximization strategy, increasing pressure on nursing homes and home care organizations to increase their billing of Medicare for services that might otherwise have been paid by Medicaid. This pressure is exerted in various ways, ranging from educating providers about Medicare coverage rules to imposing penalties on providers that do not meet specified Medicare revenue growth targets.

C. Outcomes Differences across Post-Acute Care Providers

Central to any attempts to determine whether post-acute care is provided more efficiently by one type of provider relative to others is knowledge about which combination of services and settings result in optimal patient outcomes in recovery from illness, improvements in functional capacity, and other dimensions of wellness. We focus our review, in this section, on studies that have addressed the relative outcomes of patients served in post-acute care settings. Embedded in these studies are also some of the most detailed analyses of differences in intensity of services provided by different post-acute care providers.

As shown for post-stroke rehabilitation, practice patterns can vary substantially by geographic location in a way that cannot be explained by patient characteristics alone (Lee et al., 1997). To determine the extent to which post-acute care patients are receiving appropriate care in the most cost-effective manner, it is necessary to study outcome-based quality of care across multiple provider types. If similar outcomes were found for similar patients receiving care in different post-acute settings, it would be possible to infer, for example, that one modality was more efficient, or that a minimum level of (or spending for) post-acute care could produce the optimal outcomes for patients with specific needs.

Only a handful of studies have examined patient outcomes and costs in the post-acute care setting. At present, very little information exists on the balance between patient needs and the amount and types of services needed to achieve optimal outcomes. A study by Munin and colleagues (1998) found that individuals transferred to a rehabilitation hospital after three days experienced better initial outcomes than those beginning rehabilitation after seven days. However, the study does not allow conclusions about the relative efficacy of care in other post-acute settings.

Kramer and colleagues (1997) examined the effectiveness and cost of rehabilitation for patients with hip fracture or stroke admitted to rehabilitation facilities, subacute SNFs, and traditional SNFs. Rehabilitation facilities had better outcomes for stroke patients than SNFs, after adjusting for the fact that patients admitted to SNFs tended to be more functionally and cognitively impaired. SNF stroke patients had significantly more ADL difficulties than rehabilitation facility stroke patients at six months. And there were significant differences in Medicare costs between rehabilitation facility and SNF admissions, even after controlling for shorter lengths-of-stay in rehabilitation facilities. The authors concluded that for stroke patients the more comprehensive therapy services provided by rehabilitation facilities can lead to better

outcomes, in terms of functional recovery and community placement. However, these additional services led to higher costs, which in the case of hip fracture patients did not appear to confer any additional benefit vis-á-vis hip fracture patients treated in traditional SNFs.

In another major study on post-acute care outcomes, Kane and colleagues (1997a) found that improved functional outcomes could be achieved with better decisions about where older patients should go upon discharge from acute-care hospitals. Stroke or hip fracture patients who were discharged to rehabilitation facilities or to home health care, for example, had better functional improvement than those discharged to nursing homes at various time points after hospital discharge (six weeks, six months, and one year). Rehabilitation facilities, relative to SNFs and home health care, also demonstrated the greatest potential for functional improvement for stroke patients who had high ADL dependency scores at discharge. Home health care resulted in greater ADL improvement for stroke patients who had low ADL dependency scores at discharge.

Using these empirical findings, Kane and colleagues (1997b) conducted simulations in which actual discharge placements were compared to those that would have produced "optimal" outcomes for the patients at various points in time after discharge. They found very little (23 percent to 50 percent) concordance between actual discharge location and location settings where patients could achieve the maximum functional improvement. The study results also suggested that discharging patients to their optimal discharge locations could achieve functional improvements at little or no additional costs to Medicare. The authors concluded that decision-making around hospital discharge planning could be improved if pressures to discharge patients quickly were reduced and better data on patient outcomes were available. They suggested, further, that bundling the payment for hospitals with that for post-acute care would be one way to encourage more effective post-acute care choices.

Researchers at Marionjoy found that most outcomes were not significantly different for patients treated in subacute SNF and hospital-based rehabilitation settings after controlling for age, sex, diagnosis, primary payer, and admission status (Kilgore et al., 1993; Oken et al., 1994). Although hospital patients achieved better outcomes on some measures of independence (e.g., bowel and bladder function, skin care, and medication management), the researchers concluded that subacute care was more cost-effective overall. Keith, Wilson, and Gutierrez (1995) reached similar conclusions related to functional outcomes for SNF and rehabilitation hospital patients. In another Marionjoy study, however, rehabilitation patients treated in the subacute SNF had significantly higher death rates and emergency rehospitalizations than patients treated in the rehabilitation hospital (Rao et al., 1994).

Recognizing the paucity of information on outcomes of post-acute care, ASPE sponsored an initiative to design a quality measurement study that would compare outcomes of patients with similar post-acute care needs across multiple provider types. This two-and-a-half-year project, which is being conducted by the University of Colorado with assistance from the Urban Institute, is in its first year.

VI. PPS AND MANAGED CARE RESEARCH AND DEVELOPMENT

The BBA provisions are part of a continuing process to reform the Medicare post-acute care benefit. Responding to the BBA mandate, HCFA is in the process of developing prospective payment systems for most post-acute care services. This section discusses current efforts in that regard. It also discusses the limited information on post-acute care under managed care, an arena that could provide insight on how post-acute care services might be provided more efficiently under incentives to minimize resource use.

A. Current Development of Prospective Payment Systems

The difficulties inherent in establishing prospective payment systems will vary by provider type. Extensive completed research on establishing a per diem-based PPS for skilled nursing facilities enabled the development of a patient classification-based payment system that went into effect in July, 1998. Considerable research has also been completed on PPS for rehabilitation facilities, based largely on episodes of care (Carter et al., 1997; Stineman, 1995). Studies have been completed on per visit payment for home health care, and research is currently underway for episode-based payment alternatives. HCFA is beginning to examine casemix characteristics of long-term care hospital patients as an initial step toward developing a PPS for those providers.

SNFs. The PPS system for SNFs is based on what is known as RUG-III, a 44-group classification system designed and tested for Medicare and Medicaid nursing home patients (Fries et al., 1994). It classifies patients into homogeneous groups according to health and functional characteristics and the amount and type of resources they use. Information used to classify patients into RUG-III groups is derived from the Minimum Data Set (MDS). Unlike hospital DRGs, which classify patients based on a per discharge basis, RUG-III was developed to classify patients on a per diem cost basis. The initial set of groupings of the RUG-III system is a hierarchy representing residents grouped according to their clinical characteristics (rehabilitation, extensive services, special care, clinically complex, impaired cognition, behavior problems, and reduced physical function). Within each set of clinical characteristics, patients are grouped into more refined categories representing resource-use requirements. The rehabilitation category is divided into five levels of service intensity, for example, based on the total minutes of therapy received per week, the days of therapy per week, and the number of different types of therapy received. Residents whose clinical conditions do not require therapy are classified into descending order of severity, based on number of services used and the amount of time and resources required for their care. Although the RUG III-based payment system is already in operation, HCFA is continuing research into

further refinements of it, with a current focus on the cost of non-therapy ancillary services.

Home health care. Casemix measurement systems for home health are less well developed than for SNF services. HCFA is currently sponsoring two projects. One is a demonstration testing episode-based, casemix-adjusted payments. The casemix system used in this project is based on 16 cells that indicate, for example, whether a patient was recently hospitalized or has one of three chronic health care conditions. This casemix system is effective for distinguishing the health status of patients but not for predicting expected resource use. The second project aims to create a casemix measurement system based on the Outcome and Assessment Information Set (OASIS) developed by the University of Colorado for tracking the outcome-based quality measures of Medicare home health services. This project, being conducted by Abt Associates, has already added data items to the OASIS--the new instrument is called "OASIS-plus"--and is currently in the data collection phase.

Additional efforts, not sponsored by HCFA but growing out of extended research from the SNF measurement community, are using the MDS instrument as a basis to create MDS-HC (Minimum Data Set-Home Care). The MDS-HC instrument differs from OASIS in that it is designed to measure resource use rather than functional outcomes.

Rehabilitation facilities. Research on a casemix-adjusted payment system for rehabilitation facilities has focused on episode-based payments using the Function Independence Measure-Functional Related Groups (FIM-FRG) system. The FIM-FRG system for rehabilitation hospitals first assigns patients to one of 20 rehabilitation impairment categories (such as stroke or traumatic brain dysfunction) for which the patient is receiving rehabilitation. Patients are then further subdivided into 53 patient classes, using the patients' performance on the FIM motor test, the FIM cognitive test, and age (Stineman, 1995; Carter et al., 1997).

Other research is in progress to design a PPS for rehabilitation hospitals that would be based on a per diem payment. Part of this research is being conducted by the Hebrew Rehabilitation Center for the Aged, the prime contractor on a project to develop an assessment instrument. The study draws from prior research on the MDS for nursing home residents, with the current version of the data collection instrument, MDS-PAC (Minimum Data Set-Post-Acute Care), designed to accommodate the more intensive, short-term care needs of rehabilitation and long-term care hospital patients. In addition, HCFA has contracted with Muse Associates to develop a per diem PPS for rehabilitation facilities. At this time, HCFA anticipates that this classifiction system will be based on methodology that is similar to the one used to develop the SNF prospective payment system.

Integrated systems. Although the BBA has mandated that the development of PPS for SNF, for home health care, and for rehabilitation hospitals be put on a fast track, future reform efforts for Medicare post-acute care services are likely to focus on the integration of payment systems for all post-acute care providers. An obvious

problem in establishing an integrated post-acute PPS is that the research, like the payment systems, have been specific to each type of provider. Much work remains to be done to develop a casemix-based payment system that spans the various provider types.

HCFA is supporting a study by the University of Minnesota to design an integrated post-acute payment system demonstration. A major objective of that study is to develop payment and casemix systems based on a single assessment instrument modified to account for differences in patients' medical conditions, instead of provider type. An important aspect of the Minnesota study will be to determine possibilities for applying products from other studies such as MDS- PAC and OASIS to studying patients across different post-acute care settings. Other issues, such as determining which provider should manage the payment, are also being investigated.

B. Post-Acute Care under Managed Care

Medicare HMOs are required to provide all Medicare-covered services, but they are not limited to the same coverage rules. For example, HMOs can admit beneficiaries to a SNF without requiring them to spend three days in a hospital prior to SNF admission. Hence, by using more SNF services in place of hospitalizations, HMOs could possibly increase their efficiency without decreasing the quality of care provided.

Early studies of Medicare's managed care program showed that beneficiaries enrolled in HMOs did, indeed, have different utilization rates of post-acute care services from those of the fee-for-service comparison group (Brown et al., 1993). One study found that HMO enrollees tended to have shorter hospital stays, more admissions to SNFs (but shorter stays), and fewer home health visits per person. The mix of home health services also differed for the two groups, with HMO enrollees using fewer aide and nurse services than their fee-for-service counterparts. The study did not investigate the use of rehabilitation or long-term care hospitals, however. A more recent study found that HMO patients who experienced strokes were more likely to be discharged to SNFs and less likely to go to rehabilitation hospitals or units (Retchin et al., 1997). The study did not find differences in survival or acute care hospital readmission between the HMO and fee-for-service groups. And it did not follow either long-term functional status or institutionalization status.

A study focusing on home health use found lower home health service costs among HMO enrollees relative to fee-for-service beneficiaries, even after casemix adjustments were made to account for the better health status of HMO enrollees (Schlenker, Shaughnessy, and Hittle, 1995). However, this study also found that beneficiaries enrolled in fee-for-service plans showed greater improvement than their HMO counterparts in some activities of daily living (ADLs) and other measures, such as medications management. Another study found that Medicare HMO enrollees received significantly fewer home health services than their fee-for-service counterparts, although there was no difference in *total* expenditures between the two populations. This study

found that Medicare HMO enrollees also had a significantly higher rate of multiple hospital admissions than fee-for-service participants (Experton et al., 1997).

A recent study compared hip fracture patients enrolled in HMOs with individuals served by integrated fee-for-service systems (Kramer, 1996). HMOs were less likely than fee-for-service systems to provide rehabilitation in rehabilitation hospitals, relying largely on SNFs that provided more comprehensive rehabilitation services than typical SNFs. After controlling for case mix differences, the rehabilitation strategies used by the two systems produced comparable functional status outcomes.

Managed care organizations for Medicare enrollees provide a natural experiment for studying how post-acute care is provided in an integrated payment system, although thus far only a few studies have compared post-acute care use between fee-for-service and managed care settings. Even fewer studies have compared outcomes in the two care settings. Such research efforts could be cost-effective, particularly if assessments of quality outcomes were incorporated into the study design.

VII. POLICY ISSUES FOR THE FUTURE

The 1997 BBA provisions mandating prospective payment systems for Medicare's post-acute care providers were an important policy response to the recent, rapid increases in post-acute care expenditures. Such provisions are only part of a continuing process to reform Medicare's post-acute care services, however. Other important cost, quality, and access issues relevant to Medicare's post-acute care services were not addressed by the BBA provisions. We highlight such issues here and note gaps in our knowledge about them.

1. Are increasing expenditures evidence that Medicare's system of post-acute care services is broken? Greater than expected increases in expenditures are almost always a catalyst for a policy response. The recent trends in SNF, home health care and other post-acute care expenditures prompted the BBA provisions aimed at curtailing this spending growth. It is reasonable to ask, however, whether the growth in spending was in fact justified by an increasing need for post-acute care, particularly in light of declining growth in inpatient hospital spending. It is also possible, of course, that the recent levels of post-acute care spending have been excessive relative to the needs of Medicare beneficiaries discharged from acute-care hospitals. There is evidence to suggest that some spending may have been inappropriate (e.g., recent GAO reports of fraud and abuse in the Medicare home health program), but it has yet to determine how much of the increase in spending reflected actual increases in need for post-acute care rather than inappropriate resource use.

In the past few years, the rate of growth in spending for Medicare SNF and home health care has actually been declining, suggesting that such services may be approaching the "appropriate" level of need for the beneficiary population. As with the general trend in spending, however, we have yet to determine if the declining growth rates reflect response to beneficiaries' needs or to other factors--which include recent federal actions directed at post-acute care providers (e.g., increased scrutiny of billing practices) and other efforts to limit aggregate federal spending.

2. What is the goal of Medicare's home health program? One factor behind the recent growth in Medicare's home health spending was the increase in number of visits that beneficiaries received, raising questions about whether Medicare's home health services had been transformed into a long-term care benefit. The increased use certainly resulted, at least in part, from the 1989 changes in eligibility and coverage guidelines that enabled more individuals to qualify for Medicare home health care services and more services to be provided to eligible individuals. For example, as long as they are homebound and in need of skilled care (or supervision), chronically ill patients can receive Medicare coverage primarily for help in performing personal care activities. Such activities, performed by home health aides, are more typical of long-term care needs than acute medical needs. No one knows how many people are using the benefit in this way. More important, there is much debate about whether Medicare should continue to cover persons needing extended home care services in any case.

In the process of designing the prospective payment system for home health care, it is important to address the overall goals of Medicare's home health care benefit. An episode-based payment methodology usually contains incentives for providers to constrain the amount of care delivered. As the design details are being set, it is important to remember that the treatment of outlier cases (those with extraordinarily long episodes) will directly affect the extent to which Medicare continues to serve persons needing extended home care services.

Several factors highlight the importance of addressing the extended home care issue in the development of new Medicare home health payment policies. Because the high visit users of Medicare home health care are generally older and more disabled (Komisar and Feder, 1998), they are more likely to need considerable amounts of care. If Medicare home health coverage is constrained, their need for services might be met by other types of Medicare post-acute care providers, possibly at higher costs to Medicare. In addition, constraints on Medicare financing for home care will increase the pressure on Medicaid to provide more home care for dually- eligible beneficiaries. Although we have yet to see how states will respond to the increased Medicaid burden, it is likely that publicly supported home care services for dually-eligible beneficiaries will be reduced from current levels.

3. What will be the access, quality and cost consequences of the BBA provisions? Designed to curb future spending increases for post-acute care providers, the BBA provisions could have adverse consequences for beneficiaries, as well as for some providers. Ultimately depending on the design details, the PPS could provide incentives for home care providers, rehabilitation facilities, and other post-acute providers to contain costs by selecting relatively light care patients or by giving fewer services. Implementation of the SNF PPS in July 1998, for example, has already raised concern about the extent to which SNFs will refuse to admit patients with high non-therapy ancillary costs (e.g., for intravenous medications), because those costs might not be adequately accounted for in the casemix adjustments of the new payment system. Until further adjustments are made, SNFs are faced with financial incentives not to serve patients with high non-therapy ancillary costs. The BBA required the Secretary to review the effects of the SNF prospective payment system on quality, particularly for those beneficiaries in need of medication therapy.

The BBA provisions also could increase the likelihood of patients having to use multiple providers because of the financial needs of providers rather than well-being of patients. This is because prospective payment systems tend to create incentives to reduce costs, with possible negative implications for quality of care. As happened after Medicare implemented acute-care hospital PPS, some patients may be discharged "quicker and sicker." Pro-rated payments and appropriate transfer policies for certain cases that use multiple providers could mitigate this danger.

To the extent that post-acute care services generally are constrained by the BBA provisions, the result could be longer prior acute-care hospital stays and increases in

acute-care hospital readmissions. Such an eventuality could indicate access and quality of care problems, which could, in turn, result in higher overall Medicare spending.

The fact that the BBA-mandated PPS will be implemented in stages over time suggests the possibility of a dynamic environment, in which incentives created by each of the new payment systems will affect behavior, first of the targeted provider type and then of other types of providers as well. This makes it hard (and hazardous) to visualize the post-acute care system that will ultimately emerge in response to all these changes. Since the collective effects of the BBA provisions cannot be adequately assessed for some time, a synthesis of impact studies conducted *during* implementation will be needed to identify the impact of the various BBA provisions on access, quality, and costs.

4. Will the supply of post-acute care providers change, and how will these changes affect Medicare beneficiaries? As noted, according to anecdotal reports, some home health agencies are closing in the wake of the interim payment system (IPS) mandated by the BBA. In July, the National Association for Home Care reported that over 750 agencies or branch offices had been forced to close, over half of them in Texas, Louisiana, California, and Florida. While it is unclear whether these provider closings have resulted in services being discontinued in the area, or whether agencies have maintained staffing levels but redistributed the staff to other branch offices, the closings could potentially shift patients from home health to other settings. As also noted, this anecdotal evidence has stimulated Congress to study various options to lighten the impact of the IPS. These suggestions of post-IPS change in the supply of home health agencies is one indication of the effects that the BBA provisions may have on the supply of post-acute care providers. Depending on the specific features of the PPS to be developed for rehabilitation facilities and long-term care hospitals, incentives may be created that will affect (increase or decrease) their supply also.

The stronger financial incentives in the new payment rules could also lead to increased certification of certain types of facilities relative to other types. Distinctions among different post-acute care settings are already blurring because of new technologies (e.g., home infusion therapy), enhanced service delivery capacity (e.g., subacute care SNFs), and changes in the financing and delivery system (e.g., managed care organizations). But we know very little about whether the different post-acute care provider types provide comparable quality of care for various types of patients.

5. What is the effect of eligibility and coverage policies on access, quality and costs? The BBA post-acute care provisions were directed primarily at reforming payment systems for post-acute care. Eligibility and coverage policies were not extensively addressed. As discussed above, changes in such policies had a major effect on expenditure trends in the past decade. And existing eligibility and coverage rules continue to provide a basis for increasing utilization of post-acute care services. Like the reimbursement policies, these rules also vary by type of post-acute care provider, and do not appear to have been systematically coordinated. Because eligibility and coverage rules are potentially very powerful policy levers, they should receive

further consideration, either to improve efficiency with which post-acute care services are delivered or to capture additional Medicare savings.

6. Is integration of services on the basis of a patient-centered payment system a solution for Medicare post-acute care problems? Despite the major payment reforms mandated by the BBA, some observers continue to note that Medicare's post-acute care system remains fragmented, with payment and coverage policies that vary by type of provider. ProPAC (1997), for example, pointed out that "Medicare will have to make comprehensive structural changes to its benefit and payment policies" if it is to improve the coordination of services and contain costs in the long run.

One testing ground for better integrated services has been in the managed care arena. Medicare beneficiaries who belong to HMOs at least theoretically have their entire continuum of care managed. Research indicates that, although HMO enrollees had different patterns of post-acute services than fee-for-service beneficiaries, quality of care was not necessarily better and sometimes worse. It is important that more information is collected on how quality is affected by use of different service mixes, regardless of whether it is in a managed care or fee-for-service system.

A fee-for-service strategy considered by HCFA is development of an integrated payment system that is patient-centered (Winn, 1997). In this type of system, payments would be based on the type and intensity of services needed to achieve optimal outcomes, regardless of provider category. This system is conceptually appealing and may be a desirable goal for reforming payment of Medicare post-acute care services. The urgency with which this strategy is pursued depends, however, on several practical issues.

First, a major motivation behind the patient-centered strategy is the notion that Medicare beneficiaries with similar needs receive similar post-acute care services from different providers at different costs to Medicare. We do not know the extent of this overlap. To some extent, the degree of overlap is mitigated by Medicare rules defining each provider category. For example, unlike home health care, SNF services are covered for individuals who need continuous nursing or therapy services that can only be provided in an institutional setting. Such types of requirements tend to direct patients, even those with the same hospital DRG, to different post-acute care settings. Research also indicates that personal and health characteristics tend to differentiate use of one type of post-acute care provider relative to others, even for patients with the same DRG. Important for policy applications is whether differences between patients, by provider setting, are relatively small (and can be risk-adjusted) or whether they require that patients be classified into separate groups. To the extent that the patient populations are substantially different across post-acute care providers, the need for an integrated payment system becomes less urgent.

Second, there is a paucity of information on quality outcomes associated with use of post-acute care. If different provider types serve similar patients, we cannot infer

that Medicare payments to one type, relative to others, are too high or too low until we can relate quality outcomes to appropriate amounts and types of services required. Only a few studies, as discussed above, have addressed this subject. The level of effort and time required to analyze jointly patient characteristics, amount and types of services, and outcome-based quality measures is substantial. Even the few prior studies on the subject focused only on selected hospital DRGs. Because of the inherent complexities in the task, as a practical matter, an integrated payment system that includes quality outcomes may be able to cover only a portion of the Medicare post-acute care population. The issues with and feasibility of integrating payment for the entire post-acute care population or a subset thereof require consideration.

Third, if normative payments for post-acute care can be developed for specific groups of patients, decisions still have to be made about how the post-acute care payment will be administered. One option that has been discussed is to bundle post-acute care payment together with Medicare acute-care hospital payments. This option gives hospitals primary authority and responsibility for managing episodes of care. Such bundling conceptually provides hospitals the opportunity to manage efficiently the total episode of care, but it also gives them incentives (as in more general managed care models) to use affiliated providers and to minimize costs. Hence, questions can appropriately be raised about patients' access to alternative post-acute care providers and quality of patient care under this option. Other, less discussed options include making post-acute care episode payments to particular types of providers--such as integrated networks of providers, or independent case management organizations. Regardless of the eventual choices made, this issue is bound to be controversial and politically sensitive, because of the potential impact of any particular choice on the multiplicity of post-acute care providers.

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APPENDIX A: ELIGIBILITY, COVERAGE, CERTIFICATION, AND COST-SHARING[13]

Skilled Nursing Facilities

SNFs provide post-acute services to Medicare beneficiaries within 30 days of a prior hospital stay and who require a lower level of inpatient care upon discharge (SNFs can also provide therapy services on an outpatient basis under Medicare Part B). SNFs can be hospital-based facilities, freestanding entities, or rural swing-bed hospitals (which use beds as either acute or skilled nursing care). SNFs bill Medicare Part A for therapy services that they provide directly. These therapy services, in addition to other ancillary services provided during a Part A covered stay, may also be provided by outside providers--such as rehabilitation agencies and independent therapists--under agreement. These providers are paid under Medicare Part B, but SNFs are required to bill for the services as a requirement of the consolidated billing provision.

Benefit. The SNF benefit is primarily a Part A benefit that covers routine services (room, board, skilled nursing care), physical, speech, and occupational therapy, medical social services, pharmaceutical, laboratory services, supplies, and equipment. Individuals must require skilled nursing or rehabilitation services on a daily basis in an inpatient setting. The SNF stay must commence within 30 days of a prior hospital stay (that lasted for a minimum of three days). Medicare pays for up to 100 days of SNF care for each spell of illness. The SNF stay must be certified by a physician within 14 days of admission and at least every 30 days thereafter. After 100 days, Medicare will continue to pay for some ancillary services under Medicare Part B.

Certification.

- Transfer agreement with a hospital to accept patients recommended for SNF care
- sufficient staffing to provide 24 nursing care by licensed nurses and other nursing staff
- have at least one registered nurse for at least 8 hours every day
- have a physician who supervises patient care and is available 24 hours a day to provide emergency services
- have dietary, pharmaceutical, dental, and medical social services

Cost Sharing. There is no deductible for Medicare SNF care. Daily coinsurance ($95.50 in 1998) is required for days 20-100. If ancillary services are paid under Part B, then the beneficiary is subject to Part B deductible and coinsurance.

[13] Relies on Prospective Payment Assessment Commission, *Medicare Post-Acute Care Providers: Coverage and Payment Policies* (Intramural Report I-97-01), July 1997.

Home Health Agencies

HHAs serve individuals who require skilled nursing care or therapy at home. Some agencies are freestanding while some are affiliated with other providers such as hospitals, SNFs, or rehabilitation facilities. HHAs employ registered nurses, licensed practical nurses, home health aides, therapists, social workers, and personal care attendants.

Benefits. Medicare covers intermittent or part time skilled nursing care and physical, speech, or occupational therapy to Medicare beneficiaries confined to their homes. There is no prior hospitalization requirement or limit on the number of visits, although the individual must be under the care of a physician who reviews the plan of treatment at least every 62 days. Under the 1997 BBA, home health visits not related to a prior hospital stay or any home health visits in excess of 100/spell of illness will be funded through Medicare Part B--effectively relieving Part A from home health expenditures which are not directly "post acute."

Certification. Home health agencies must have capacity to provide part-time or intermittent skilled nursing care and at least one other therapeutic service (e.g. physical therapy or home health aide services) on a visiting basis (agency can contract for other rehabilitation services). Agencies must have a physician or registered nurse who supervises all care.

Cost sharing. There is no copayment or deductible for home health visit, but individual is responsible for 20 percent copayment for durable medical equipment and some prescription drugs.

Rehabilitation Hospitals and Distinct Part Units

These facilities specialize in intensive inpatient rehabilitation and offer medical, rehabilitative nursing, physical, occupational, or speech therapy, social and psychological services, and orthotic and prosthetic services. Rehabilitation hospitals may also have outpatient departments.

Benefits. Medicare Part A covers inpatient services at rehabilitation hospitals. Benefits include bed and board, medical and nursing services, lab tests, X-rays, pharmaceuticals, supplies, and other diagnostic or therapeutic services. Coverage last up to 90 days per spell of illness--beginning with the first day of hospitalization (including acute hospital stays prior to admission to a rehabilitation facility) and ending 60 days after beneficiary is discharged and receives no other inpatient hospital or SNF services. The setting must be "reasonable and necessary" for the patient--meaning that the individual must require frequent physician involvement, 24-hour rehabilitation nursing, generally at least 3 hours of therapy per day, and a coordinated team of therapists. Individuals must also be expected to improve as a result of therapy.

Certification. Rehabilitation facilities must demonstrate that 75 percent of their inpatients in the previous reporting year received intensive rehabilitation services for at least one of ten specific medical conditions. Each facility must also have a physician who acts as the full time director of rehabilitation. Most other requirements are met through the facility also being certified as a hospital through the Joint Commission on Accreditation of Healthcare Organizations and the Commission for Accreditation of Rehabilitation Facilities. Distinct-part units need to meet the same requirements and be part of a hospital that is paid under PPS, while remaining distinct administratively (e.g. admission and discharge).

Cost sharing. Same as PPS inpatient hospital cost sharing. Deductible is $764 for each spell of illness with daily coinsurance of $191 for days 61-90.

Long-Term Care Hospitals

Hospitals in which the average patient stay is over 25 days. Can offer specialized services (e.g. physical rehabilitation, or ventilator dependent care) or can provide more generalized services (e.g. cancer treatment, chronic disease care). Can be associated with another facility (a "hospital within a hospital").

Benefits. Inpatient stays at long-term care hospitals covered under Medicare Part A include bed and board, medical and nursing services, lab tests, X-rays, pharmaceuticals, supplies, and other diagnostic or therapeutic services--covered up to 90 days in "spell of illness."

Certification. Long-term care hospitals must have provider agreement with Medicare. Intermediaries verify that facility meets the requirement that average stay is at least 25 days. Long-term care "hospitals within hospitals" must demonstrate independence from parent organizations on several levels in order to be paid under TEFRA and not PPS--as other long- term care hospitals and rehabilitation facilities are.

Cost Sharing. Same as PPS inpatient hospital cost sharing. Deductible is $764 for each spell of illness with daily coinsurance of $191 for days 61-90.

APPENDIX B: DETERMINANTS OF POST-ACUTE CARE USE

This appendix reviews findings from research on the determinants of post-acute care use, including patient characteristics, provider characteristics, market area factors, and state Medicaid policies on long-term care services. It emphasizes factors that differentiate the use of one provider modality relative to others.

Most prior research has focused on persons discharged from hospitals with particular DRGs (e.g., representing stroke or hip fractures), but some studies have analyzed post-acute care use of all persons discharged from hospitals, regardless of their hospital DRG. For example, the Prospective Payment Assessment Commission (ProPAC) identified the DRGs with the greatest volume or the highest proportion of hospital discharges to rehabilitation or long-term care hospitals, skilled nursing facilities, and home health agencies in 1994. Discharge destinations for these DRGS were studied, as well as prior hospital length of stay, duration of post-acute services, variations in beneficiary characteristics, and the significance of whether a provider was a hospital-based facility. In contrast, recent studies by Liu, Wissoker and Rimes (1998) and Gage (1998) have examined destinations of all hospital discharges to identify factors predicting the use of post-acute care providers.

A. Personal and Health Characteristics

Age. Increasing age has widely been found to be associated with higher use of post-acute care, reflecting both an increased frailty that requires more extended care after a hospital stay and need for more formal care as a possible consequence of a weakened informal care network. Age was a significant predictor of increased use of post-acute care in studies of all hospital discharges (Gage, 1998; Liu, Wissoker and Rimes, 1998) and discharges for specific DRGs that are commonly followed by post-acute care service use (Neu, Harrison, Heilbrunn, 1989; Steiner and Neu, 1993).

Increasing age also differentiates use of the different types of post-acute care providers. The RAND studies, for example, found that older hospital patients were more likely than younger ones to use SNF care (Neu, Harrison, Heilbrunn, 1989; Steiner and Neu, 1993). The very oldest patients (85 or older) were less likely than younger ones to use HHA and rehabilitation services. Gage (1998) found similar differences in SNF and rehabilitation hospitals but did not find significant differences in the use of home health care providers in 1995, after controlling for medical conditions, Medicaid eligibility, and use of other services. Coverage rules for rehabilitation care requiring certification for improvement or recovery of patients may reduce the likelihood that the oldest (frailest) beneficiaries will use this provider modality. The oldest patients may be less likely to use HHA services because they are most likely not to have the informal care resources that are often required to remain in the community.

Gender. Neu, Harrison and Heilbrunn (1989) found that, in 1984-85, being female was associated with increased likelihood of using SNF, HHA, and rehabilitation hospital services. In 1987-88, the one exception to the generally greater use of post-acute care services by women was the finding that women discharged from hospitals with stroke DRGs were less likely to use rehabilitation services than men (Steiner and Neu, 1993). Because older women, relative to older men, are less likely to have a spousal caregiver, the effect of gender on post-acute care use may be a proxy for the effect of informal caregiver availability. Liu, Wissoker and Rimes (1998) found that being female was not a significant predictor of use of either SNF or HHA care when marital status, functional disability and other factors were taken into account.

Race. Blacks are more likely than whites to use post-acute care services provided by home health care providers and rehabilitation facilities (Steiner and Neu, 1993). In contrast, whites have a higher propensity to use SNF services. Consistent with those results, Liu, Wissoker and Rimes (1998) found that non-whites were less likely than whites to use SNF care relative to HHA care. Controlling for medical conditions, age, and Medicaid eligibility, Gage (1998) found that race was not a significant predictor of rehabilitation services or home health care, but found that whites used significantly more SNF services than others in 1995. Beyond the empirical findings, it is still unclear whether the differences by race in types of providers used "denote the preferences of patients, providers, or discharge planners, supply constraints, or some combination of these" (Steiner and Neu, 1993).

Medicaid eligibility. Small differences have been found in the use of post-acute care services by Medicaid and non-Medicaid elderly persons. Medicare beneficiaries who are also entitled to Medicaid might be expected to have higher post-acute care costs than other beneficiaries because their overall Medicare costs are higher. It has been estimated that, whereas dually Medicare and Medicaid eligible individuals comprise about 16 percent of the total Medicare population, their expenditures are approximately 30 percent of total Medicare payments (HCFA, 1997). A major reason for the higher costs of the dually eligible is that they have more complex medical needs and are also more functionally disabled than other beneficiaries.

In their analysis of post-acute care use in 1987-88, Steiner and Neu (1993) did not find major differences between the propensity for Medicaid and non-Medicaid elderly persons to use some form of post-acute care services when all hospital discharges were considered. They did find that Medicaid beneficiaries, in contrast to non-Medicaid beneficiaries, were slightly more likely to use SNF and slightly less likely to use HHA care or rehabilitation hospital services. Examining post-acute care use in 1992-93, Liu, Wissoker, and Rimes (1998) found that, after controlling for health status, functional status, and other characteristics, being eligible for Medicaid increased slightly the likelihood of using either SNF or HHA care. By 1995, dually-eligible individuals were 7 percent more likely to use rehabilitation services and 53 percent more likely to use SNFs than beneficiaries who were not Medicaid eligible (Gage, 1998). These findings

indicate that the effect of Medicaid eligibility on post-acute care use has been changing over time.

Functional status. Poor functional status, measured in terms of dependencies in activities of daily living (ADLs) and instrumental activities of daily living (IADLs), increases the likelihood of using post-acute care service use. Analyses addressing all hospital discharges and selected DRGs found that functional dependency increased likelihood of post-acute use of SNFs, home health care providers and rehabilitation services. For all hospital discharges in 1992-93, Liu, Wissoker, and Rimes (1998) found that people with ADL or IADL dependencies were more likely to use post-acute care than people who were not dependent. They also found that among people who used either SNF or HHA services, those who were dependent in three or more ADLs were more likely to use SNF rather than HHA services. These findings are consistent with those of Kramer, Shaughnessy and Pettigrew (1985), who found that greater percentages of Medicare SNF patients were dependent in ADLs than home health patients.

In their analysis of post-acute care for selected DRGs, Kane and colleagues (1996) found that ADL and IADL scores were positively associated with post-acute care for stroke, congestive heart failure patients as well as those with hip procedures. The investigators also found that patients who went home, rather than to institutional care, had lower disability on discharge from the hospitals (Kane, 1994). In general, the Kane studies found that poor functional status measured in various ways (e.g., self-reported dependencies, physical demonstration of ADLs prior to discharge) was a significant predictor of post-acute care use (Blewett, Kane and Finch, 1995).

Living arrangement, informal support, marital status. The availability of "able and willing" informal caregivers tends to reduce the likelihood of post-acute care use, and favor home care instead of institutional care among users. The potential availability of informal caregivers is reflected by numerous variables including living arrangement, marital status, and informal support. Patients discharged from hospitals are more likely to use formal home health care if they have "less accessible social support" (Solomon et al., 1993). Among stroke patients, Kane et al. (1994) found that those going home were less likely to live alone than those going to institutions. Liu, Wissoker, and Rimes (1998) found that elderly persons discharged from hospitals were less likely to use post-acute SNF or HHA services if they were married, suggesting that informal care from spouses substituted for formal post-acute care. They also found that being married decreased the likelihood of using SNFs relative to home health care providers among persons who used one or the other service.

Health factors. Health factors are particularly important in predicting a Medicare beneficiary's propensity to use rehabilitation, skilled nursing facility, and home health services, either individually or in combination. One recent study analyzed the factors associated with using these services to determine the extent to which use is driven by medical need or influenced by other factors, like payment policies (Gage, 1998). After controlling for DRGs, age, prior disability, hospital readmissions, race, sex, Medicaid

status, and geographic regions, the study showed that discharge destinations for most of the 10 post-acute "transfer" DRGs did not change from what they were in a simple bivariate comparison. For example, in both the bivariate and multivariate analyses, pneumonia (DRG 89), CHF (DRG 127), COPD (DRG 88), and patients with nutritional and metabolic disorders (DRG 296) are most likely to use home health only. Joint patients (DRG 209) are most likely to use home health with either rehabilitation or SNF services, but they are also more likely to use home health (9.8 percentage points more) than SNF, all else equal.

Patient characteristics and medical need were related to changes in the post-acute providers used by other high post-acute DRGs, including stroke (DRG 14), hip (DRG 210), and respiratory patients (DRG 79) suggesting that medical conditions play a significant role in predicting discharge destination for these cases. Stroke patients (who were most likely to use multiple services) were next most likely to use home health services instead of a SNF after controlling for individual characteristics. The change in the relative probability of using each service between a bivariate and multivariate comparison suggests that patient acuity plays a significant role in directing stroke patients into one setting over another which would moderate the effects of other factors, such as new payment incentives.

Severity of illness. The RAND studies found that severity of illness, measured in several different ways, increased the likelihood of post-acute care use. In 1984-85 and 1987-88, Neu and colleagues found that longer hospital length of stay, within DRG categories, was associated with greater propensity to use post-acute care. They also found that persons with a secondary diagnosis were more likely to use post-acute care (Steiner and Neu, 1993). Longer hospital length of stay was also significant in predicting rehabilitation hospital, SNF or HHA care in 1995, even after controlling for medical conditions preceding post-acute care use (Gage, 1998).

B. Provider Characteristics

Hospital size and teaching status. Hospital size and teaching status are not generally associated with patterns of post-acute care use. Steiner and Neu (1993) found that size of hospitals had no effect on SNF or HHA use. Larger hospitals were more likely to discharge patients to rehabilitation services, possibly because such hospitals contained rehabilitation units. Teaching hospitals were also more likely to discharge patients to rehabilitation, a finding that would be consistent with the likelihood that teaching hospitals are tertiary hospitals with rehabilitation units. Blewett, Kane, and Finch (1995) found that effects of teaching hospital status on post- acute care use varied by DRG of the discharges.

Ownership. Researchers have also examined the impact of ownership on use of post-acute care. Steiner and Neu (1993) found that proprietary hospitals were more likely than nonprofit ones to discharge patients to home health care providers, possibly because proprietary hospitals also operate home health agencies to a greater extent

than non-profit hospitals. ProPAC (1996) found that home health beneficiaries who used proprietary agencies had longer episodes and more visits per episode. This mirrored Kenney and Dubay's (1992) finding that metropolitan statistical areas with proportionally more proprietary home health agencies had higher numbers of visits per user. A study that included directly hospital ownership of one or more post-acute care providers as an explanatory variable found that hospital ownership considerably increased (3 to 5 times) the likelihood of use of post-acute care for stroke and chronic obstructive pulmonary disease (COPD) patients (Blewett, Kane, and Finch, 1995). Interestingly, that study did not find a significant relationship between hospital ownership and post-acute care use for congestive heart failure, hip procedure and hip fracture patients.

Hospital-based, post-acute care providers. Several studies have documented differences between hospital-based and freestanding facilities. In an analysis of discharges to post-acute care for selected DRGs, Blewett, Kane, and Finch (1995) found that for stroke and COPD cases, patients discharged from hospitals that owned a post-acute care facility were more likely to use post-acute care than patients discharged from other hospitals. ProPAC (1996) found that post-acute care use was about 10 percent more likely when the hospital owned a post-acute care provider, and that among beneficiaries who used post-acute care, acute inpatient length-of-stay was shorter in hospitals that owned a post-acute care provider.

ProPAC also found that length-of-stay in hospital-based SNFs (16.7 days) was only half that of freestanding SNFs (33.6 days) and that patients in hospital-based SNFs were less likely to be 85 years or older (26 percent) compared to patients in freestanding SNFs (37 percent). Patients discharged from hospital-based SNFs were also more likely to receive additional post-acute care services than patients discharged from freestanding facilities, 24 percent (versus 13 percent in freestanding facilities) received home health benefits, and 9 percent (versus 4 percent) received care in another SNF.

Disproportionate share hospitals (DSH). Steiner and Neu (1993) found that stroke and hip fracture patients discharged from hospitals that serve a "disproportionate share" of low-income patients had lower probabilities of receiving SNF care than patients discharged from other hospitals, while stroke patients were more likely to use HHA care if they were discharged from disproportionate share hospitals. A stronger finding by the same researchers was that patients in DSH hospitals were generally more likely to receive post-acute rehabilitation care than other hospital patients.

Medicare volume and length of stay. Among hip fracture patients, hospitals with relatively greater volume of Medicare patients were more likely to be discharged to post-acute care than patients from hospitals with fewer Medicare patients, but this relationship was not found for other DRGs (Blewett, Kane, and Finch, 1995). Steiner and Neu (1993) found that the discharging hospital's average length of stay is inversely related to propensity for post-acute care use, despite the positive association between an individual's length of stay and likelihood of post-acute care use. Hospitals' average length of stay was negatively associated with post-acute care use for many of the DRGs

studied and for all three modalities of post-acute care providers. They conclude that hospital average length of stay "appears to be a proxy for local practice patterns, whereby longer stays mitigate the need for post-acute services."

C. Market Area Characteristics

Supply of providers. The supply of different types of post-acute care providers can have an important influence on the overall use of post-acute care. For example, Kenney and Dubay (1992) found that higher proportions of Medicare enrollees used home health services in areas with fewer nursing homes beds and with more home health agencies. Cohen and Tumlinson (1997) examined state variations in the use of the Medicare home health benefit and found that, among other factors, an increase of one skilled nursing facility per 1,000 people older than age 65 resulted in a decrease of between 34 and 52 home health users per 1,000 Medicare enrollees between 1991 and 1993. Similarly, in an analysis of home health utilization between 1978 and 1984, Swan and Benjamin (1990) found that the number of nursing home beds per 1,000 elderly persons was negatively related to the number of Medicare home health visits per 100,000 elderly persons.

RAND analysts found that, in 1987-88, supply of SNF beds in an area had only a weak effect, increasing likelihood of SNF use only in the case of certain DRGs (Steiner and Neu, 1993). On the other hand, they found that the extent to which SNF beds were hospital-based had a strong effect on the likelihood of increasing SNF use for all five of the DRGs they studied. SNF bed supply was not found to be associated with home health care use in four of the 5 DRGs, but SNF and rehabilitation care were found to act as practical substitutes for each other with a negative relationship between the use of one type of care and the other. Interestingly, this study found a negative relationship between the number of Medicare-certified SNF beds and the rate of home health use in only one of the five selected DRG groupings.

RAND also found a positive association between rehabilitation bed supply and the probability of home health care use in four of the 5 DRGs, suggesting that rehabilitation and home health care may be used in sequence for some recovering beneficiaries. In their analysis of all hospital-discharges in 1992-93, Liu, Wissoker and Rimes (1998) found that, for users of either SNF or HHA services, rehabilitation bed supply increased the likelihood of SNF use relative to HHA use. They hypothesized that availability of rehabilitation beds indicate geographic areas where institutional-level (both SNFs and rehabilitation hospitals) post-acute care is more common.

Urban and rural areas. Use of post-acute care is more likely in urban, relative to rural, areas. Neu, Harrison and Heilbrunn (1989) speculate that this outcome may reflect the greater availability of each type of provider in urban areas. Liu, Wissoker and Rimes (1998) did not find differences between urban and rural areas in the likelihood of SNF or HHA use, when supply of SNF beds, rehabilitation beds and HHA nurses were controlled in a multivariate analysis. They did find, however, that among users of post-

acute SNF or HHA care, living in a rural area had a positive association with SNF, relative to HHA, service use.

D. State Medicaid Policies

State Medicaid policies have been found to have an effect on the use of Medicare post-acute care services. Cohen and Tumlinson (1997) and Kenney, Rajan and Soscia (1998), for example, found an inverse relationship between Medicare and Medicaid home care expenditures, attributing some of those differences to state policies. Cohen and Tumlinson found that utilization of Medicare home health care is higher in states that face greater fiscal pressure concerning their Medicaid budgets and in states that lack personal care programs. They concluded that the overlap of the population served and the services provided by state Medicaid programs and Medicare has given states and providers an opportunity to leverage Federal funds. Similarly, Kenney, Rajan and Soscia (1998) found that Medicare home health use was a direct function of Medicaid use in many states, and identified state policies and activities, such as invoking penalties when providers are not "Medicare maximizing," that are strongly related to geographic variations in Medicare home health care use.

SYNTHESIS AND ANALYSIS OF MEDICARE POST-ACUTE CARE BENEFITS AND ALTERNATIVES

Reports Available

Medicare's Post-Acute Care Benefits: Background, Trends, and Issues to be Faced

Executive Summary	http://aspe.hhs.gov/daltcp/reports/1999/mpacbes.htm
HTML	http://aspe.hhs.gov/daltcp/reports/1999/mpacb.htm
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Post-Acute Care Issues for Medicare: Interviews with Provider and Consumer Groups, and Researchers and Policy Analysis

Executive Summary	http://aspe.hhs.gov/daltcp/reports/pasisses.htm
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