

# 4

## Impact of Policy Change on Hospital Treatment Patterns

The purpose of this chapter is to measure the impact of the implementation of the transfer payment policy under inpatient PPS on hospital treatment and discharge patterns. This chapter looks at the impact of the policy change on costs and profits as well. Of particular concern, as raised in the Proposed Rules of the Federal Register, is the potential for PPS hospitals to respond to the payment system by reducing the rate of postacute care transfers that qualify for the lower per diem payments without reassuming the supply of such services in the inpatient setting. This can be done by eliminating postacute transfers, by delaying postacute care transfers beyond the one-day window for skilled nursing facilities and PPS-exempt hospitals and the three-day window for home health, or by increasing inpatient lengths of stay beyond the national geometric mean length of stay minus one day for each DRG. In addition, PPS hospitals can increase per diem payments by increasing the inpatient lengths of stay of short-stay transfer cases without necessarily altering the rate of postacute

care transfers paid on a per diem basis. Each of these potential responses is discussed in greater detail below.

The chapter begins with a discussion of the PPS payment incentives created by the postacute care transfer payment policy. Average revenues and profit margins under both payment regimes using the pre-policy change set of observations are presented as a way of demonstrating the magnitude of the payment incentives for each DRG. The chapter next outlines eight possible scenarios regarding changes in hospital behavior and relates each potential response to expected changes in PPS and postacute care payments. The third task of this chapter is to examine the trends in treatment and discharge patterns over the study period that are unrelated to the specific incentives of the payment methodology. In the absence of a formal control group, the impact of the policy reform can be better understood by comparing changes among postacute care transfer cases with changes in non-transfer cases.

The fourth section of this chapter compares changes in PPS transfers, lengths of stay, costs and profits before the policy change versus after the policy change. Because of the lag in claims submissions and truncation of the post-period data on the episode-level file, claims from the first two quarters of fiscal year 1998 (e.g., the pre-period) are compared with claims from the first two quarters of fiscal year 1999 (e.g., the post-period). Because only cases with lengths of stay below the national geometric mean length of stay minus one day for that DRG qualify for the lower per diem payments, changes in treatment patterns for short and long-stay cases are presented separately. Treatment and financial variables are presented by both DRG and postacute care provider type.

The results are also disaggregated by hospital characteristics (size, location and teaching status) and beneficiary characteristics (age, sex, and medical status). The chapter further assesses the impact of the policy change on average lengths of stay for each of the three types of postacute care providers. Finally, the chapter examines the impact of the policy change on the time interval prior to postacute care readmission or visit by calculating the number and share of transfers occurring on Days 2 or 3 following PPS discharge, in the case of inpatient facilities, and on Days 4 or 5, in the case of home health. The full results of the impact analysis are reported in the Appendix A. Summary tables are presented in this chapter.

#### **4.1 Changes in PPS Payment Incentives**

As previously stated, the postacute care payment policy unequivocally lowers average PPS payments to acute care hospitals for patients transferred to a post-acute care provider whose inpatient length of stay is at least one day less than the national geometric mean for the same DRG. At the same time, the postacute care payment methodology increases per diem payments under inpatient PPS for each additional day the patient remains in the hospital up to one day less than the geometric mean. Once the patient reaches the geometric mean less one day for the same DRG, PPS hospital payments match, and are capped at, the DRG level.

The financial incentives are evident in Table 4-1 below. Table 4-1 compares actual DRG payments with simulated per diem payments using the same pre-policy change set of observations. The table relates actual and simulated payments to costs to determine the difference in profits under each payment regime. As previously stated, the pre-policy change period is defined as the first six months of fiscal year 1998. The difference between actual DRG payments and simulated per diem payments reflects the full effect of the policy change on PPS profits prior to any changes in hospital behavior. Actual and simulated profits are



calculated by subtracting total operating costs from actual and simulated total hospital payments from all sources, including adjustments for medical education, disproportionate share and cost outliers, as well as deductibles, co-payments and payments from third-party sources. Costs were determined by multiplying reported charges by department-level cost-to-charge ratios. Average total actual and simulated payments and profits are weighted averages of the DRG-specific means, weighted by the DRG share of total discharges.

According to the figures in Table 4-1, actual average DRG payments during the first six months of fiscal year 1998 were \$10,102 for short stay postacute care transfers under the pilot 10 DRGs. Average DRG payments ranged from a low of \$2,732 for DRG 236 to a high of over \$77,000 for DRG 483.

By comparison, average simulated per diem payments for short-stay PAC transfers under the postacute care transfer policy were \$7,850 across all 10 pilot, ranging from a low of \$2,367 for DRG 236 to a high of \$49,944 for DRG 483. The figures show that, with no changes in hospital treatment or discharge policy, the payment reform would reduce PPS payments by \$2,251 per transferred short stay patient, representing a percentage reduction in revenue of nearly one-quarter. The postacute care transfer reimbursement methodology would have lowered average PPS payments to short stay transfers for three DRGs (DRGs 113, 263, and 483) by over one-third.

By subtracting actual costs from payments under both reimbursement regimes, the table further illustrates the impact of the policy change on profits,

again with no changes in PPS hospital treatment or discharge decisions. The figures show that, during the first six months of fiscal year 1998, average profit margins for short stay PAC transfers under the DRG reimbursement system for the 10 pilot DRGs as a whole were 27 percent. Positive average profits under the DRG system for short stay PAC transfers ranged from a low of \$362 for DRG 211 to a high of \$37,285 for DRG 483. In contrast, simulated per diem profit margins for short-stay transfer cases were six percent across all 10 pilot DRGs. Under the per diem payment methodology, PPS hospitals would have earned an overall profit of \$461 per short-stay transfer. Per case profits ranged from a loss of \$784 for DRG 211 to a surplus of \$9,938 for DRG 483. Simulated per diem profits were negative for three DRGs. Thus, under the policy reform, profits would have fallen on average by \$2,251 (from \$2,713 to -\$461) for each patient transferred under the 10 pilot DRGs to a postacute care facility prior to reaching the geometric mean length of stay minus one day.

The evident decline in payments and profit margins creates two independent financial incentives. First, under the policy reform, PPS hospitals are confronted by a strong financial motivation to reduce the number of short-stay postacute care transfers. As stated above, a reduction in the rate of postacute care transfers qualifying for the lower per diem payments can be achieved in a variety of ways, with vastly different implications for the quality of care. The second financial incentive is to increase the inpatient length of stay of short-stay cases without necessarily altering the rate of postacute care transfers

qualifying for the lower per diem payments. PPS payments will continue to increase for each additional day that a short-stay transfer remains in the sending hospital. Under the null of hypothesis of no hospital response to the policy change, both the short-term postacute care transfer rate and the average length of stay of such cases will remain constant across the two payment periods after controlling for external trends in treatment. As per diem payments approach the actual cost of treating short stay PAC transfer cases, the impact of the policy change on hospital treatment behavior should be lessened, at least among non-profit maximizing facilities. The preliminary evidence on how hospitals have responded to the financial incentives created by the policy change is empirically examined in the following section. However, before turning to the empirical evidence, it is necessary to place the potential outcome measures in the context of longer-term secular trends in inpatient treatment and discharge patterns.

## **4.2 Trends in Postacute Care Transfer Volumes and Lengths of Stay**

One of the challenges of any impact analysis is to control for changes in the variable of interest that are unrelated to the policy reform. Figure 4-1 below compares the number of postacute care transfers that would have qualified for the lower per diem rates with the number of short-stay patients who were not referred to postacute follow-up treatment for each quarter contained in the analytic database. Because of problems associated with truncation of the data

and unreported claims submissions, the last quarter of fiscal year 1999 has been omitted from the comparative analysis. The figures show that the number of both short-stay referrals and short-stay non-referrals remained fairly constant throughout calendar year 1997 and the first three quarters of 1998. After the introduction of the 1999 GLOS thresholds, the number of short-stay postacute care referrals fell precipitously, from 76,149 cases during the third quarter of calendar year 1998 to 45,545 cases the next quarter, or 40 percent. Short-stay non-referrals fell from 50,401 cases to 41,148 cases during the same



two-quarter period, representing an 18 percent decline. Clearly, not all the reduction in short-stay postacute transfers is attributable to the change in GLOS.

The number of short-stay referrals has continued to decline, albeit at a much more modest pace. The number of short-stay transfers fell 23 percent in 1999 (from 45,545 in the fourth quarter of 1998 to 35,155 in the second quarter of 1999), compared with a reduction in non-transfers of 11 percent (from 41,148 to 36,628 over the same period).

A similar comparison of the average inpatient length of stay for short-stay transfers versus short-stay non-transfers is provided in Figure 4-2. The figures show that the average LOS of short-stay postacute care transfers and non-transfers fell steadily during most of 1997 and the first three quarters of 1998. When the 1999 GLOS thresholds became effective, the average LOS of short-stay non-transfers immediately increased, from 3.81 days to 4.11 days, while the average LOS of short-stay transfers initially remained constant. However, the average LOS of short-stay postacute care referrals rose dramatically during the next quarter, from 4.11 days to 4.56 days. Interestingly, the effect of the lower GLOS threshold for DRGs 14 and 209 was to increase the average LOS of all short-stay cases as the distribution of cases shifted in favor of the longer staying DRGs. The average LOS of short-stay postacute transfers resumed its downward trend in the last two quarters of fiscal year 1999.

Ideally, one would like to have a group of patients who have experienced a similar trend in discharge and treatment patterns over the study period against

which to isolate the impact of the policy change. In the absence of such a group, we use the comparable set of non-transfer cases. In the empirical section that follows, the change in volume and average

lengths of stay, costs and profits for postacute care transfers between the two study periods is compared with the pre versus post change in comparable treatment and financial measures for non-transfer cases. The relevant comparison group for short-stay transfers is short-stay non-transfers. The indicators for long-stay postacute care transfers are contrasted against the same indicators for long-stay non-postacute care referrals.

Non-transfer cases are an imperfect control group. As made evident in the discussion of hospital response options presented earlier, the non-transfer sample may itself be affected by the policy reform. Under certain response scenarios, a change in the number of postacute care referrals will have an indirect impact on the volume or average length of stay of non-transfer cases. Thus, the non-referral discharges used in the empirical section that follows are only meant to serve as a reference group against which to better interpret the changes in the postacute care population.

### **4.3 Impact of Policy Change on Postacute Care Transfer Rate and PPS Length of Stay**

Missing postacute care claims prevent us from using data after the first half of fiscal year 1999. The comparative analysis thus relies on a pre-policy change sample based on claims for PPS discharges from October 1, 1997 through March 31, 1998 and a post-policy change sample based on claims for PPS discharges from October 1, 1998 through March 31, 1999. All figures

presented in this section are derived from these two sample periods. PPS discharge claims were then linked with all immediate postacute care claims which occurred within one-day (for PPS-exempt and skilled nursing facility referrals) and within three-days (for home health referrals) to create the episode of care. To ensure the completeness of all episodes, we included postacute care claims for the first three days of April 1999 as well. The pre and post samples are divided into short-stay cases (those with a PPS length of stay at least one day below the geometric mean) and long-stay cases (those with a PPS length of stay above the geometric mean minus one day). Volume and share of observations in both payment periods, as well as mean length of stay, were calculated for each of the 10 pilot transfer DRGs. The full results of the pre-post comparison are provided in Appendix A. The main findings are summarized below.

### **Postacute Care Transfer Rate**

Table 4-2 shows the volume and share of short-stay postacute care transfers by DRG during the pre and post-policy change periods. The share of short-stay postacute care referrals is expressed relative to all discharges, as well as to all short-stay discharges. The share of short-stay referrals divided by all short-stay cases provides the best indication of the change in PPS transfer patterns after accounting for secular declines in short-stay hospitalizations. According to the figures presented in the table, the number of transfer cases

qualifying for the lower per diem payments fell from 154,631 during the first half of fiscal year 1998 to 89,439 during the first six months of fiscal year 1999 period.

The number of short-stay transfers fell 42 percent between the two study periods. Short-stay transfer volume fell for each of the 10 pilot transfer DRGs.



The table also shows a marked decline in the share of short-stay postacute care referrals, relative to both total short-stay cases and total discharges. The share of short-stay postacute care transfers relative to all discharges fell from 28 percent during the first half of fiscal year 1998 to 18 percent during the first half of calendar year 1999. The share of short-stay postacute care referrals relative to all short-stay cases fell as well, from 59 percent during the earlier period to 54 percent during the latter. The share of qualifying short-stay postacute care transfers relative to all discharges fell 35 percent after the payment change was implemented. The share of short-stay postacute care referrals relative to all short-stay discharges fell 8 percent between the study periods under review. The decline in short-stay postacute care transfers applies to almost all of the 10 pilot transfer DRGs.

These figures suggest that the policy change resulted in a significant reduction in the number and share of postacute care transfers paid for under the lower per diem methodology. However, a major part of the reduction in short-stay postacute care transfer volume and rate is attributable to the decline in the geometric mean length of stay (GLOS) between 1998 and 1999. A decline in GLOS from, say, 5.1 days to 4.9 days, means that all patients discharged on Day 3 will no longer qualify for the lower per diem payment (e.g., LOS is not less than GLOS-1). This happens to be the case for the two DRGs with the largest number of postacute care transfers (DRGs 14 and 209). Thus, even with no behavioral response, the number of qualifying postacute care transfers for those

two DRGs will decline significantly. A sensitivity test conducted by applying the 1998 GLOS to both pre and post-policy change observations suggests that the true behavioral response of providers to the BBA reform results in a decline in the short-stay postacute care transfer rate of approximately 2.3 percent, rather than the observed 35 percent. (See Table 4-2A.)

Table 4-3 examines the number and share of postacute care transfer cases exempted from the lower per diem payments (i.e., long-stay postacute care discharges). A comparison of postacute care transfer rates among short and long-stay patients allows us to examine whether the decline in short-stay referrals was achieved through a resumption of postacute care services on an inpatient basis (which would not interrupt patient care) or simply a delay in the date of transfer (which could interrupt patient care). A decline in the overall postacute transfer rate would suggest that more patients are now receiving services in the inpatient acute care setting that were previously administered by a postacute provider. In contrast, a decline in short-stay referrals relative to long-stay referrals indicates that hospitals are simply holding patients longer before transferring them. The claims data show that long-stay transfer rates, relative to all discharges, rose during the period under review. Long-stay postacute care transfer cases totaled 192,674 during the pre-policy change period, compared with 211,230 during the post-policy change period. Long-stay postacute care transfer rates rose from 35 percent to 43 percent relative to all discharges, representing an overall increase of 23.2 percent. Again, the

observed increase in long-stay postacute care transfers is attributable to the decline in GLOS between 1998 and 1999. Holding GLOS constant, the long-stay postacute care transfer rate actually fell during the first two quarters of fiscal 1999 by 3.1 percent. (See Table 4-3A.)







A comparison of changes in postacute care rates between short and long-stay cases holding the GLOS effect constant suggests that PPS hospitals did not respond to the payment reform by holding transfer cases longer (as implied in Table 4-3) in order to qualify for the higher DRG payments. However, the decrease in both long-stay and short-stay transfers suggests that PPS hospitals may have responded to the policy change by resuming the provision of postacute care services in the acute care setting. Figures from the bottom row of Tables 4-2 and 4-3 show that the overall number of postacute care transfer cases among the 10 pilot DRGs fell from 347,255 to 300,669 during the study period, or 13.4 percent. The overall postacute care rate fell from 63.4 to 61.6 percent (significant at 99% confidence level). The overall decline in postacute care rates suggest that hospitals may have responded to the payment reform by focusing on the reprovision of services previously administered in a postacute care setting.

### **Postacute Care Lengths of Stay**

The second lever hospitals can employ to help offset the policy change effect of the lower per diem payment methodology is inpatient length of stay. As stated earlier, hospitals will receive one more per diem payment for each additional day the patient remains in the hospital prior to transfer up to one day less than the geometric mean, at which point DRG payment is capped at the full amount. Table 4-4 shows that the mean length of stay of short-stay transfers

increased between the two study periods, rising by 4.1 percent. The overall percent change is positive due to the dramatic shift in short-stay discharges among

the 10 DRGs in 1999. In contrast, the average length of stay on non-transfer short-stay patients rose by only 0.7 percent.

The change in average LOS of qualifying postacute care referrals holding GLOS constant is shown in Table 4-4A. Holding GLOS constant has the effect of reversing the direction of the LOS change for DRGs 14 and 209 whose GLOS thresholds fell from one integer to another. However, it also had the effect of shifting the distribution of short-stay referral cases in the post-policy change period in favor of the shorter staying qualifying DRGs. As a result, the change in the average LOS holding GLOS constant was actually lower than previously estimated. The average LOS of qualifying per diem transfers rose 1.5 percent after the introduction of the payment reform after netting out the GLOS effect, rather than the previously observed 4.1 percent.

By comparison, Table 4-5 shows that the average length of stay for long-stay transfers fell relative to long-stay non-transfers. The mean length of stay for long-stay transfers fell 15.9 percent, while for long-stay non-transfers, it fell 16.6 percent. The average LOS of non-qualifying postacute care transfer cases fell 3.6 percent after controlling for the GLOS effect. (See Table 4-5A.) The slight relative decline in the length of stay of transfers among all long-stay cases suggests that PPS hospitals may have responded to the policy change by holding some patients until they exceeded the geometric mean minus one day threshold prior to post-discharge referral. By definition, the average length of stay of short-stay cases is less than the average length of stay of long-stay

cases. Increasing the lengths of stay of short-stay patients until they qualify for full DRG payment will lower the average length of stay of





long-stay cases. Thus, the preliminary data provide some evidence to suggest that hospitals responded to the policy change by increasing the average length of stay of short-stay patients prior to transfer as a way of avoiding the lower per diem payments.

#### **4.4 Impact of Policy Change on Length of Time Prior to Postacute Care Admission or Visit**

The final response scenario considered here is whether hospitals avoided the lower per diem payments by postponing the date of postacute care admission or visit until after the mandated time interval had ended. Evidence on the impact of the policy change on the timing of postacute care admissions or visits is presented in Table 4-6. The table shows the number and share of patients who were readmitted at a PPS-exempt or skilled nursing facility between 1 and 2 days following discharge. It also provides the number and share of patients who received services from a home health agency between 4 and 5 days after hospital discharge. Shares are expressed as the number of 'delayed' postacute care transfer cases divided by the number of all transfers for each provider type. For PPS-exempt and skilled nursing facilities that meant the number of transfers on the first and second day divided by the number of all transfers up through the second day. For home health agencies, that meant the number of transfers on

the fourth and fifth day divided by all transfers up through the fifth day. No attempt was made to distinguish between short and long-stay transfers.

The figures show that 699 patients were transferred to a PPS-exempt facility on the first or second day following a PPS hospitalization in the first two quarters of fiscal year

1998. The number of such cases was 660 during the same six-month period in fiscal year 1999. The share of delayed transfers to PPS-exempt facilities remained constant between the two study periods. The number of first or second day transfers to skilled nursing facilities was 2,219 in the pre-policy change period and 1,759 during the post-policy change period. But again, the share of delayed transfers remained fairly constant at about one percent of total transfers during the first two days after an initial PPS hospitalization. Home health referrals on the fourth or fifth day following PPS discharge fell from 17.5 percent to 16.5 percent between the two study periods, from 12,667 cases to 9,745 cases. These results do not support the contention that PPS hospitals attempted to circumvent the lower per diem payments by delaying the date of postacute care admission or visit. In all cases, the volume of 'delayed' transfers is extremely small relative to all transfers. Among all providers, the number of 'late' referrals fell after the implementation of the policy change. Among skilled nursing facilities and home health agencies, the share of late-stage transfers declined as well.

#### **4.5 Impact of Policy Change on Postacute Care Lengths of Stay and Number of Visits**

The methodology used to reimburse postacute care providers remained unaffected by the PPS inpatient transfer policy reform (though not by other provisions of the Balanced Budget Act). However, a change in the duration and

intensity of inpatient care, as well as the timing of postacute care readmissions or visits, may indirectly impact the amount of resources used in the postacute care setting. For example, a shift in the provision of rehabilitative or skilled nursing care back to the acute care hospital may result in shorter lengths of stay in follow-up postacute care treatment programs. Conversely, a postponement of postacute care services after hospital discharge may cause patients to be sicker once they do receive follow-up care. Such patients may incur longer lengths of stay in a postacute care facility or more home health visits than before. Again, a summary of the full results is provided below.

Table 4-7 presents the average length of stay in a postacute care facility for patients transferred from an acute care hospital during the pre and post-policy change periods. The table also presents the average number of home health visits for patients discharged from a PPS hospital. Postacute care average length of stay and number of visits for both short and long-stay referrals are provided. The average length of stay for short-stay referrals in a PPS-exempt facility during the first half of fiscal year 1998 was 14.0 days. During the same six-month period in fiscal year 1999, average length of stay in a PPS-exempt facility for short-stay transfers was 13.9 days. The average length of stay of short-stay referrals to PPS-exempt hospitals fell -0.7 percent, much less than the percentage decline in the length of stay of long-stay transfer cases. Similarly, the percentage decline in the average length of stay of short-stay referrals to skilled nursing facilities was greater than the percentage decline for

long-stay transfer cases. The average length of stay of short-stay referrals in a skilled nursing facility fell from 21.2 days to 19.9 days, or 6.1 percent, compared with decline of 23.4 percent among long-stay transfer cases. A similar pattern is evident for home health agencies. The average number of home health visits fell from 11.2 in the 1998 to 10.4 in



1999, or 7.6 percent. The average number of home health visits for long-stay transfers declined 5.7 percent.

Again, these preliminary figures do not support the concern expressed in the final rules that PPS hospitals would respond to the payment incentive by delaying the postacute care admission or visit until after the same day period (in the case of inpatient transfers) or the three day period (in the case of home health) had passed. A break in the acute-to-postacute continuity of care would likely be evidenced by a decline in the severity of illness of postacute care admissions and thus, a relative increase in postacute care lengths of stay. The early evidence shows, however, that average resource use of short-stay transfer patients in PPS-exempt facilities and home health agencies declined after the new policy was implemented, both in absolute terms, as well as in relation to long-stay transfers. Even though average resource use of short-stay transfers to skilled nursing facilities rose in relation to long-stay transfers, it fell in absolute terms by a significant margin.

#### **4.6 Impact of Policy Change on PPS Hospital Costs and Profits**

This section considers the impact of the policy change on hospital costs and profits. As stated earlier, if hospitals responded to the payment reform by increasing the length of stay of per diem cases, the average cost of short-stay transfers should rise. To explore this issue, Table 4-8 presents mean costs for short-stay transfers and non-transfers during the two study periods. Costs were

calculated by multiplying reported charges by department-level cost-to-charge ratios. Costs are reported in constant 1999 dollars. The data show that the

average cost of short-stay postacute care transfers as a whole rose between the two payment periods, both in absolute terms and in relation to short-stay non-transfers. Average costs were \$7,566 during the first six months of fiscal year 1998 and \$7,745 during the first half of fiscal year 1999, representing an increase of 2.4 percent after adjusting for inflation. By comparison, the average cost of short-stay non-transfers rose 4.5 percent in real terms between the study periods, from \$6,895 in 1998 to \$7,208 in 1999. These results fail to indicate that PPS hospitals provided more care on average to short-stay transfers relative to non-transfers after the policy change versus before. However, the shift of short-stay transfers to long-stay transfers evidenced earlier makes it difficult to make comparisons between the two groups in Table 4-8.

Anticipating the expenditure analysis presented in Chapter 5, Table 4-9 shows the impact of the policy change on hospital profit margins for short-stay transfers only. Profits were calculated by subtracting costs from total PPS payments, including adjustments for medical education, disproportionate share and outliers, as well as beneficiary co-payments, deductibles and payments from third-party sources. Payments and profits are expressed in constant 1999 dollars, having been adjusted for medical inflation. By using both pre and post-policy reform samples, the payment and profit margin figures presented in Table 4-9 reflect changes in hospital treatment decisions. The figures show that PPS payments for short-stay transfers fell 9.6 percent in real terms after the

policy reform went into effect, from \$11,062 in 1998 to \$10,000 in 1999. The decline in average PPS payments ranged from a 4.8 percent drop for DRG 211 to a drop of over 25 percent for DRGs 113, 263 and 483. The



figures further reveal a substantial decline in PPS profit margins. Real profits fell by over 35.5 percent from \$3,496 per short-stay transfer in the pre-policy change period to \$2,255 in the post-policy change period. The decline in profits for short-stay postacute care transfers exceeded 50 percent for half of the ten DRGs.

Despite the consistent decline in PPS payments following the implementation of the postacute care transfer policy, hospitals continued to earn positive profits for short stay postacute care transfers across all 10 DRGs. Given the significant smaller (and, in some cases, negative) simulated profits reported earlier based on pre-policy change treatment and discharge patterns, hospitals must have increased lengths of stay or lowered costs in order to generate these actual profits on short stay postacute care cases after the policy change.

The impact of the policy change on PPS payments given changes in PPS hospital treatment patterns is explored in greater detail in Chapter 5. Before turning our attention to the effect of the new payment policy on Medicare expenditures, its impact on resource utilization is disaggregated in the remaining three sections of this chapter by type of postacute care transfer, type of PPS hospital and type of Medicare beneficiary.

#### **4.7 Impact of Policy Change on PPS Transfer Rates, LOS, Costs and Profits by Type of Postacute Care Transfer**

This section of the report disaggregates the impact of the policy change on PPS short-stay transfer rates, lengths of stay and costs by type of postacute care facility and unit. Tables 4-10 through 4-12 explore the differential impact of the policy change on short-stay transfer patients going to PPS-exempt units and facilities, skilled nursing facilities (SNFs) and home







health agencies (HHAs). Table 4-10 presents the number and share of short-stay PAC cases by transfer type. The majority of short-stay postacute transfer patients were discharged to a skilled nursing facility following PPS inpatient treatment, accounting for 55.2 percent of all short-stay transfer cases in the pre-policy change period. During the same period, home health and PPS-exempt transfers comprised 7.0 and 27.8 percents of all short-stay transfers, respectively. Following the implementation of the postacute care transfer policy, the share of PPS discharges transfers to a skilled nursing facility or unit dropped 2.0 percent, while the share of patients receiving home health care within three days of discharge from a PPS hospital declined 17.9 percent. In contrast, the share of short-stay patients transferred to a PPS-exempt facility or unit rose 14.9 percent after the introduction of the PPS payment reform, despite a decline in the number of PPS-exempt transfers from 43,193 to 28,670.

Table 4-11 examines the average length of stay (LOS) in the sending PPS hospital of both short and long-stay postacute care transfers. Among short-stay transfer cases, the LOS was greatest among transfers to PPS-exempt facilities, averaging 4.4 days in the pre-policy change period. During the same period, PPS transfers to skilled nursing facilities and home health agencies averaged 4.1 days and 3.7 days, respectively. The average LOS in the inpatient PPS setting increased after the policy change for short-stay cases transferred to PPS-exempt facilities and skilled nursing facilities, by 7.4 and 3.1 percent, respectively. In contrast, the average LOS of short-stay PPS patients receiving home health care

services following discharge fell 5.2 percent after the payment reform. The average PPS LOS of long-stay cases fell for all three types of transfers.

Finally, Table 4-12 illustrates the pattern of inpatient PPS costs for short and long-stay discharges by type of postacute care transfer. Among both long and short-stay patients, average PPS costs were highest for transfers to PPS-exempt facilities. PPS-exempt transfers generated \$8,956 in costs among short-stay patients and \$14,622 among long-stay patients during the pre-policy change period. HHA transfers incurred the lowest average costs among both short and long-stay patients (\$6,651 and \$10,476 in the pre-policy change period, respectively). After the introduction of the postacute care transfer policy, average PPS costs decreased among short-stay transfers to SNFs and HHAs and increased among short-stay transfers to PPS-exempt facilities. The inpatient costs of short-stay transfers to SNFs and HHAs decreased 1.5 percent, and 11.8 percent, respectively, after the payment reform and increased 9.0 percent, for short-stay transfers to PPS-exempt facilities. These results further suggest that PPS hospitals may have responded to the policy change by resuming the provision of some services previously supplied by postacute care providers, particularly those performed by PPS-exempt facilities.

#### **4.8 Impact of Policy Change on PPS Transfer Rates, LOS, Costs and Profits by Type of PPS Hospital**

This section of the report disaggregates the impact of the policy change by type of PPS hospital. The PPS hospitals are classified according to bed size, ownership status, teaching affiliation, geographic region, and urban/rural location.

Each table shows the number and share of short-stay postacute care transfers, as well as the average PPS lengths of stay, costs and profits for the respective provider categories for both pre and post-policy change periods. The percentage change between the two payment periods for each impact variable is also given.

Table 4-13 categorizes all short-stay postacute care transfers according to the size of the transferring hospital, measured by the number of beds. The six bed size categories include less than 100, 100-199, 200-299, 300-399, 400-499 and 500 or more. According to the results presented in Table 4-13, the largest share of short-stay patients transferred to postacute care occurred at hospitals with 100-199 beds (27%). The majority of cases (52%) treated were in one of two hospital bed size groups, 100-199 beds or 200-299 beds. The distribution of short-stay postacute care transfer cases across hospital size groups remained fairly constant after the introduction of the payment reform, suggesting that hospitals did not respond differently, based on their size, to the policy change.

Length of stay for short-stay postacute care transfer cases is positively correlated to bed size, with average LOS ranging from 3.79 days at hospitals with less than 100 beds to 4.65 days among hospitals with more than 499 beds. Average costs and profits rise in relation to hospital bed size as well. Hospitals

with less than 100 beds reported average costs of \$6,023 and average profits of \$1,9181 before the policy change. This is considerably less than the average costs and profit of 500+ bed hospitals (\$8,580 and \$5,753, respectively). Average LOS increased across all hospital size categories between the two payment periods, with the exception of hospitals with less than 100 beds, for whom LOS declined one percent. Average LOS increased by 10 and 8 percents, respectively, for the two largest hospital groups. Average costs increased for all hospital size categories, ranging from a 14 percent

increase for 500+ hospitals and a one percent increase for those with less than 100 beds and between 300-399 beds. Not surprisingly, there was a decrease in profits reported after the policy change across hospitals of all sizes. The decline in average profits ranged from a low of 23 percent for hospitals with 400-499 beds to a high of 48 percent for hospitals with fewer than 100. The smaller the hospital, the greater the loss in average profit.

Table 4-14 classifies short-stay cases by type of hospital ownership. Hospital ownership categories include government non-profit, proprietary for-profit and voluntary non-profit. There is a highly skewed distribution of short-stay postacute care transfer cases with voluntary non-profit hospitals treating the vast majority of cases (76 percent) and governmental and proprietary hospitals splitting the remaining share of cases (12 percent each) in the pre-policy change period. The share of short-stay postacute transfer patients at government non-profit hospitals increased by one percent after the payment reform, while the share of short-stay transfers fell by an equivalent amount at voluntary non-profit hospitals. These results suggest that public hospitals may have been more responsive to the policy change than non-public hospitals. The share of short-stay non-transfer discharges at for-profit hospitals remained the same between the two payment periods.

Average LOS among short-stay transfers ranged from 4.12 days at proprietary hospitals to 4.22 days at public hospitals. Average LOS among short-stay transfers increased by 4.3 percent at public hospitals, 4.1 percent at

voluntary non-profit hospitals and 2.9 percent at for-profit hospitals following the policy change. Average costs increased for all ownership categories, ranging from a low of 3.9 percent among voluntary non-profit



hospitals to a high of 8.1 percent among government hospitals. Somewhat surprisingly, proprietary for-profit hospitals reported the lowest profits (\$3.215), while government non-profit hospitals had the highest profits (\$3,858) during the pre-policy change period. Following the implementation of the payment reform, all hospitals experienced significant profit losses for short-stay transfers ranging from 30.8 percent among government hospitals to 54.4 percent for proprietary hospitals.

Table 4-15 compares the trends among short-stay postacute care transfer patients at teaching hospitals versus non-teaching hospitals. The majority of short-stay postacute care transfers occur at non-teaching hospitals (57 percent), with the share of short-stay transfer cases at non-teaching hospitals increasing slightly after the implementation of the policy change. Table 4-15 further indicates that average LOS is longer in teaching hospitals and rose relatively more after the implementation of the postacute care transfer policy. Similarly, costs and profits were slightly higher in teaching hospitals compared to non-teaching hospitals (\$8,154 and \$4,569, versus \$6,819 and \$2,551, respectively). Moreover, average costs rose slightly between the two periods, while profits dropped sharply. Non-teaching hospitals experienced a 44 percent decline in profits for short-stay transfers, while average profits fell 27 percent at teaching facilities.

Table 4-16 categorizes short-stay patients by hospital regions. The ten geographic regions include New England, Middle Atlantic, South Atlantic, East

North Central, East South Central, West North Central, West South Central, Mountain, Pacific and Puerto Rico. No one region accounts for a higher than 20 percent share of all short-stay postacute care



transfer cases. Puerto Rico and New England have the smallest number of short-stay postacute transfer patients, while the East North Central and South Atlantic Regions have the highest share of patients (19 percent each). The share of short-stay cases remained constant or rose in all regions except four: West North Central, Mountain, Pacific and Puerto Rico.

Table 4-16 further indicates that average LOS among short-stay transfers by hospital region ranged from 3.95 days (West North Central) to 4.56 days (Puerto Rico). The percent change in LOS pre versus post-policy change periods varies from a one percent increase for South Atlantic and Mountain Regions to a seven percent rise for Middle Atlantic and East South Central Regions, with the exception of Puerto Rico where average LOS rose 25 percent. The pattern of care in Puerto Rico is distinct from the other regions, especially in regards to average costs. Excluding Puerto Rico, average pre-policy change period costs range from \$6,430 (East South Central) to \$8,234 (Pacific). Average costs of short-stay transfers before versus after the policy change rose in all regions. Average profits among short-stay transfers fell sharply in all regions, from 8 percent in the Middle Atlantic Region to 48 percent in the Mountain Region.

Finally, Table 4-17 focuses on short-stay postacute care transfers by hospital location. The three hospital location categories include urban, rural and other rural. According to the results, urban hospitals have the largest share of cases (47 percent), followed by other rural (38 percent) and rural (16 percent).

The distribution of transfer cases in the post-policy change period shifted slightly away from urban hospitals and toward hospitals in rural and other rural locations.

The average LOS of short-stay transfers increases as hospital location

becomes more urban. Urban hospitals had an average LOS of 4.32 days in the pre-policy change period, compared with 4.09 days in other rural hospitals and 3.85 days in rural hospitals. Average costs and profits follow the same pattern. Average costs for short-stay transfers were \$8,170 at urban hospitals, compared with \$5,705 at rural hospitals. Similarly, urban hospitals reported profits over twice as high as rural hospitals. After the policy change, average costs of short-stay transfers rose 7.0 percent at urban hospitals and less than one percent at rural hospitals. At the same time, average profits fell sharply for all hospitals. The most dramatic decrease occurred at hospitals in other rural locations (40.6 percent), compared with a 29.9 percent decline at urban hospitals and a 37.5 percent decline at rural hospitals.

#### **4.9 Impact of Policy Change on PPS Transfer Rates, LOS, Costs and Profits by Type of Medicare Beneficiary**

This section of the report disaggregates the impact of the policy change by type of Medicare beneficiary. Beneficiaries are classified according to sex, age and Medicare eligibility status. Table 4-18 examines the trend in short-stay cases by the sex of the Medicare beneficiary. The results indicates that women are over twice as likely to be transferred to a postacute care facility following a short-stay PPS hospitalization than men, with the distribution of transfers remaining constant after the payment reform. However, while women are more likely to be short-stay postacute care transfer patients, men have longer average LOS, higher costs and generate higher profits. Moreover, average LOS and costs rose more for men than for women after the policy reform, while average profits fell

less. Short-stay male transfers average 4.47 days in the hospital compared with 4.01 days for women prior to the payment reform. After the policy change, average LOS for men was 4.83 days and, for women, 4.10 days. Average LOS for short-stay transfer males increased 8 percent and, for females, 2 percent after the policy reform. Average costs for men and women rose 10 and 2 percents, respectively. At the same time, average profits among short-stay transfers fell 35 percent for females, but only 33 percent for males.

Table 4-19 stratifies short-stay postacute care transfer patients by age. The four age categories used are under 65 years, 65-74 years, 75-84 years, and 85 years or older. The results indicate that the majority of short-stay transfer patients were either in the 65-74 age group (31 percent) or the 75-84 age group (40 percent). Only 5 percent of the short-stay transfer were less than 65 years of age. The distribution of transfer cases across age categories remains fairly constant over the two periods under review. Average LOS is negatively correlated with the age, ranging from 5.44 days for patients under 65 years, to 3.91 days for patients 85 years or older. Average costs and profits are also positively correlated with the age of the beneficiary. Patients under 65 years of age generated average costs of \$10,291 compared with \$5,527 among the 85 and older age group. Profits ranged from \$6,427 for the youngest group to \$3,001 for the oldest patients. Average costs increased for all age categories after the implementation of the postacute care transfer policy, from 3 percent for the 75-84 group and 12 percent for the less than 65 category. Profits in all age

categories dropped precipitously after the introduction of the payment reform.

The greatest



decline in profits occurred among the younger patients (39 percent), with the smallest decrease occurring among the 85 and over group (35 percent).

Finally, Table 4-20 categorizes short-stay postacute care transfer patients by eligibility status of the Medicare beneficiary. The five Medicare eligibility categories are Aged without End Stage Renal Disease (ESRD), Aged with ESRD, Disabled without ESRD, Disabled with ESRD, and ESRD only. The results reveal that the overwhelming majority of postacute care transfer cases following an inpatient PPS stay occur among the aged beneficiaries. Disabled beneficiaries require, on average, longer lengths of inpatient stay, incur higher costs and generate more profits than aged Medicare beneficiaries. Average LOS among disabled beneficiaries without ESRD was 5.38 days compared to 4.08 among the non-ESRD elderly. This difference is in part responsible for the higher costs attributed to the disabled in comparison to the aged (\$10,269 versus \$7,223 in the pre-policy change period). Profits generated by the non-ESRD disabled are almost twice as high as those earned from the non-ESRD aged (\$6,375 versus \$3,230). Following the implementation of the postacute care transfer policy, average profits dropped by 38 percent among the disabled without ESRD and 34 percent among the elderly without ESRD, resulting in post-policy period average profits of \$3,948 and \$2,123, respectively.

