

**NATIONAL DRG VALIDATION STUDY:
SPECIAL REPORT ON PREMATURE DISCHARGES**



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Office of Inspector General

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This Report

Entitled "National DRG Validation Study: Special Report on Premature Discharges," this study was conducted to determine to what extent Medicare beneficiaries were being inappropriately discharged from the hospital. The report was prepared by the Regional Inspector General, Office of Analysis and Inspections, Region V. Participating in this project were the following people:

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**NATIONAL DRG VALIDATION STUDY:
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EXECUTIVE SUMMARY

PURPOSE: One of the undesired manifestations of the Prospective Payment System (PPS) that has received national attention has been the premature discharge of patients. This study was conducted to determine to what extent Medicare beneficiaries were being inappropriately discharged from the hospital. It is one in a series of reports resulting from a major study undertaken by the Inspector General on the accuracy of diagnosis related group (DRG) coding and the appropriateness of medical care performed in Medicare hospitals.

BACKGROUND: In October 1983, a new method of payment for Medicare hospital stays was introduced. It was hoped that by providing appropriate financial incentives, hospitals would implement economies and efficiencies to help curb escalating health care costs. Under PPS, hospitals receive a preestablished payment based on 1 of 473 DRGs. Regardless of the amount of time a beneficiary spends in the hospital or the amount of resources expended during his or her stay, hospitals receive a fixed payment for each specific DRG. The hospital retains any surplus from stays costing less than the DRG payment and suffers losses on stays consuming more services than the payment.

These same financial incentives might induce some physicians and hospitals to withhold needed services and discharge patients prematurely, thereby increasing profits, while placing beneficiaries at risk. Evidence of such occurrences began appearing shortly after PPS was implemented. Once the issue was identified, it sparked media attention, congressional hearings, and studies by various Government agencies and consumer groups.

Scrutiny of this area, including two reviews conducted by the Inspector General, revealed procedural problems in identifying and handling instances of premature discharges. Also identified was a lack of understanding by the public and medical community regarding PPS coverage and patient rights under the new payment system. However, most importantly, the need for focusing more attention on the quality of patient care was identified repeatedly in congressional hearings and Federal reports. Despite intense interest in this area, quantifiable data regarding the actual frequency of premature discharges was unavailable until this study was undertaken.

MAJOR FINDINGS: This study reviewed the hospital records of 7,045 randomly selected Medicare patients discharged during the period October 1984 through March 1985. We found that approximately 1.1 percent of the sampled beneficiaries were discharged prematurely. Weighted appropriately, this data

indicates that .8 percent of all Medicare discharges were premature. This statistic suggests that the occurrences of premature discharges are fewer than previously suspected. While the overall number of identified premature discharges was small, 1 in every 5 hospitals reviewed had at least 1 occurrence of a premature discharge; 1 in every 3 rural hospitals reviewed had 1 or more identified instances.

Premature discharges occurred most often in small, rural, non-teaching facilities. Of the patients discharged inappropriately, the majority had quality of care issues associated with their stay in the hospital. Inadequate treatment and incomplete therapies characterized premature discharge cases.

There was no distinguishable pattern in the DRGs assigned to inappropriate discharge cases. Most cases clustered in DRGs relating to the circulatory, respiratory, and digestive systems as did the cases in the rest of the sample.

Besides analyzing hospital and case characteristics, we also looked at premature discharges in terms of hospital financial concerns. Under PPS, a hospital is rewarded for accurate DRG coding, the elimination of unnecessary services and reduction in the length of hospital stays. However, manipulation of DRG coding and the premature discharge of patients will cause excessive program payments and may improperly place patients in medical peril.

Using ICD-9-CM codes, hospitals must list in correct sequence the appropriate diagnoses and procedures of a patient's case. This is necessary for the fiscal intermediary to assign the correct DRG and make appropriate payment. Coding errors were found in 15 of the 74 premature discharge cases (20.3 percent). Of these 15 miscoded cases, 11 or 73.3 percent caused overpayments to the hospitals. In the remaining four miscoded cases, the hospital was underpaid. In the entire sample of 7,045 cases, a 21 percent error rate was identified. In 61.7 percent of these miscoded cases the hospitals were overpaid; the coding errors in 38.3 percent of these cases caused underpayments to be made.

The majority of the premature discharges occurred on or considerably after the mean length of stay (LOS) for the respective DRG. This leads us to conclude that premature discharges resulted not necessarily from an attempt by physicians and hospitals to maximize profits. Rather, it seemed to be a measure taken to minimize losses on patients whose hospital costs were nearing or exceeding the DRG payment. Regardless of the financial impact on the hospital, patients, when discharged while still in need of acute hospital care, were being put at risk.

CONCLUSION: This study quantifies, for the first time, the frequency of Medicare premature hospital discharges. The number does not appear to be as high as previously suspected. In addition, since the time our sampled patients were discharged from the hospital, Peer Review Organizations (PROs) have received increased authority to deal with instances of premature discharges and/or poor quality of care. Hospital payment for subsequent stays in the same hospital, resulting from a premature discharge, can now be denied. Soon, PROs will be able to deny payment for identified instances of substandard care. Also, PRO screens, used to target hospital cases for scrutiny for possible premature discharges, have been expanded to include sampling of all readmissions occurring within 31 days of the initial discharge. In addition, an effort has been underway to fully advise beneficiaries of their rights under PPS. They and their families should now be aware that a patient cannot be discharged from the hospital simply because "the DRG days are up."

Because these measures have not been fully implemented and their effectiveness has not been fully assessed, we do not at this time recommend that additional safeguards be established. Also, in the spring of 1987 several PRO pilot projects were completed that addressed various aspects of this issue. We hope that information contained in this report along with the results and recommendations from the PRO studies will assist the Health Care Financing Administration (HCFA) in formulating strategies and policies in this area. We support continued vigilance on the part of HCFA and the PROs in:

- o detecting individual cases of inappropriate discharges;
- o profiling hospitals and physicians to identify aberrant discharge patterns;
- o denying reimbursement for subsequent hospital stays resulting from a premature discharge; and
- o sanctioning of hospitals and physicians engaged in putting financial concerns above the well being of their patients.

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I. INTRODUCTION

On October 1, 1983, HCFA, the organization responsible for administering the Medicare program, largely replaced its hospital cost-based reimbursement system with PPS. Congress mandated this change because of the rapid increase in Medicare's payments for inpatient expenses. Under the new system, hospitals receive a preestablished payment for each discharge based upon an assigned DRG. Each of the 473 DRGs results in an associated payment that represents an average cost for patients having similar diagnoses. Some patient hospital stays consume more services; i.e., cost more than the payment, while others use less. The hospital retains any surplus from stays costing less than their DRG payment and suffers losses on stays consuming more services than the payment.

Congress assumed that a fixed payment per discharge would induce hospitals to implement economies and reduce unnecessary services. At the same time, the total payments to the hospitals would provide the same essential resources for patients as the cost-based system. While the intent of Congress was to reduce health care costs, it was also concerned that the quality of care not diminish under this new system. To protect the integrity of PPS and maintain quality of care, Congress established PROs to monitor PPS activities.

Under the new payment system, beneficiaries in 1984 were being discharged on an average of 2.5 days earlier than in 1983. Some were erroneously being told that it was because Medicare would not pay for additional days in the hospital. Confused by these changes and not fully cognizant of their rights, patients sought answers from physicians and hospital personnel who themselves did not fully understand the new payment system.

A somewhat rocky transition period did characterize the change from a cost-based reimbursement system to PPS. Beneficiaries, their physicians and the hospital community were forced, in a very short time period, to adjust to one of the most dramatic changes in health care reimbursement since the creation of Medicare. An early, unintended manifestation of the new payment system was the premature discharge of Medicare patients. Under the previous reimbursement system, premature discharges were not identified as a problem because the longer the patient stayed in the hospital the greater amount of payment the hospital received. Once the issue was identified it was discussed in the news, congressional hearings were conducted and it was examined by various governmental agencies and consumer groups. These examinations revealed procedural problems in identifying premature discharges and dealing appropriately with those responsible; a lack of understanding by the public and medical community regarding PPS coverage and patient rights under the new

system; and most importantly, they identified the need to focus more attention on the quality of patient care under PPS.

With the advent of prospective payment, the Office of Inspector General (OIG) evaluated PPS and its potential effects on utilization and provider behavior in order to detect and prevent program fraud, abuse and waste. In analyzing vulnerabilities that could result in "gaming" or manipulating PPS, OIG identified several major concerns. Among these were "upcoding" the DRGs to obtain higher reimbursement, admitting patients not in need of acute hospital care to maximize DRG payments, and inappropriately or prematurely discharging patients before hospital expenditures exceeded the DRG payment. Underutilization of hospital resources and inappropriate transfers between acute care hospitals and exempt units were also areas of concern.

Based on these concerns, the Inspector General has completed three validation studies of DRGs 14, Specific Cerebrovascular Disorder Except Transient Ischemic Attack (TIA), DRG 82, Respiratory Neoplasms, and DRG 88, Chronic Obstructive Pulmonary Disease. A review of PRO activity in identifying and handling cases of inappropriate discharges and transfers was also completed early in 1986, along with a study regarding beneficiary rights under the new payment system. An ongoing study of hospital Medicare profits is being conducted by the Office of Audit as well as a study of 1-day hospital stays.

In addition, a major initiative, the National DRG Validation Study, was undertaken to survey the accuracy of DRG coding and quality of care performed by hospitals under PPS. Based on data from this national study and additional data from other sources, several reports will be issued by the Inspector General regarding identified areas of manipulation and gaming. Quality of care, as well as PRO performance in monitoring PPS activities, will also be addressed. This report specifically discusses premature discharges.

Background

Inappropriate physician/hospital behavior can place beneficiaries at unnecessary risk and inflate program payments. Because PPS gives the hospital a fixed payment regardless of how long the patient stays, the hospital may not only reduce costs, but also discharge Medicare patients "quicker and sicker." Excessive hospital pressure on physicians for early discharge may improperly place patients at medical peril. The beneficiary who leaves the hospital clinically unstable, while needing high levels of care, risks unnecessary clinical deterioration, readmission, or death.

Premature discharge increases provider profitability in two ways. First, the DRG payment represents an average cost that includes

proper workup and treatment. By sending the patient home prematurely, the hospital gains the funds not expended on the medically-indicated level of services. Second, the premature discharge creates an opportunity to earn a second DRG payment for the patient's readmission in the near future.

Also, some hospitals are inappropriately using the DRG average or mean LOS. Based on national data, both the arithmetic mean LOS and the geometric mean LOS are calculated for each DRG and published by HCFA. The geometric mean LOS is used in calculating payment for day "outlier" cases. The arithmetic mean LOS is calculated by HCFA for comparison purposes only. It is not used in payment determinations.

Outliers were created to provide additional payment for unusual circumstances. These cases are those that have either an extremely long LOS or extraordinary costs when compared to most discharges in the same DRG. If a case meets the necessary criteria for day or cost outliers, the hospitals may receive extra payment in addition to the applicable DRG payment.

Proper use of the mean LOS is made when calculating day outlier payments or analyzing data. The DRG mean LOS was never intended to be used as a criteria for determining a patient discharge from the hospital. However, as documented in this and previous OIG studies, some hospitals appear to have policies encouraging or requiring the discharge of patients prior to or at the mean LOS. Such arbitrary policies directly link provider profitability with endangerment of beneficiary health. Provider statements to patients to the effect that "your DRG days are up" improperly seek to shift the responsibility for premature discharge to the Government.

The American Medical Association (AMA) report of its DRG monitoring project discussed early discharges both as a manifestation of administrative pressures and as a quality concern. Forty-three percent of the surveyed physicians reported that there was pressure to discharge patients early, 32 percent state that policies had changed for the better, and the remaining 25 percent stated that they had not noticed a change in hospital discharge practices.

In a study by the American Society of Internal Medicine (ASIM), physicians cited the following as examples of hospital imposed pressures:

- o "Printed forms appear on the chart 1-2 days before the DRG expires, strongly suggesting discharge."
- o "When the DRG 'expires' I am reminded and urged to do something."

- o "Pressure to discharge sooner is very great and workup is often incomplete."
- o "One local hospital details the cost on the front of the record--the patient is aware of this. It has created anxiety..."
- o "The hospital is not exerting pressure on our staff, but there is pressure just knowing the hospital's livelihood depends on us."

Under the cost-reimbursed system, the financial incentive was to maximize services and prolong hospital stays. This was a comfortable environment for physicians. They could provide continuity of care, ordering all tests and therapies they deemed necessary while keeping the patient in the hospital for, in their opinion, an appropriate length of time without interference from hospital management. With the implementation of PPS, hospitals began monitoring physician practice patterns in order to identify and eliminate costly unnecessary tests and days in the hospitals. This seemingly intrusive behavior on the part of hospital administrations, coupled with a new emphasis on financial concerns, was an abrupt change for most physicians.

Objectives

This study was conducted to determine to what extent Medicare patients were being discharged prematurely. We evaluated the patient's condition upon leaving the hospital. If the patient was medically unready for discharge at that time, the discharge was identified as premature. Because a physician decides whether to discharge the patient without knowing the beneficiary's future course, this report identified premature discharge regardless of whether the patient subsequently did well, required prompt readmission, or expired as a result of the initial premature discharge. Neither the patient's medical condition at the time of initial admission nor at readmission affected the classification of a discharge as premature.

Methodology

Using a two-stage cluster design, we sampled 7,045 complete medical records from 239 hospitals stratified by size. The cases were drawn from hospital discharges occurring during the period beginning October 1984 through March 1985. The OIG contracted with the Health Data Institute (HDI) for medical records specialists to code the diagnoses, and for physicians and nurses to assess the appropriateness of the discharges. A comprehensive system of reviews and referrals verified the accuracy of the process.

In assessing appropriateness of care, the patient's condition

was evaluated during three points in time. The first reference was upon admission. Unnecessary admissions were identified at this time. The second evaluation of care concerned the treatment of the patient during his or her hospital stay. Determinations of poor quality of care, unneeded procedures, etc., were then made. Finally, a decision regarding the appropriateness of discharge was reached. Registered nurses initially screened the medical records for incidents relating to the appropriateness of admission, quality of care and appropriateness of the discharge. If inadequacies were found, the medical record was then referred to a physician. In general, if, in the physician's judgment, it was determined that the patient was still in need of acute hospital care 24 hours before his or her release from the hospital, the discharge was determined to be premature. A narrative summary was then prepared describing the nature of the deficiencies noted.

The reviewers had instructions to ignore marginal problems or cases involving honest differences in medical judgment about appropriate case management and subsequent discharges. An OIG medical consultant evaluated all narrative summaries and quality of commentary and found them to be adequate and consistent. Further information regarding sampling and review methodology can be found in Appendix I.

It should be noted that our methodology in identifying premature discharges differs from HCFA's. Therefore, comparisons between HCFA data and our data should be made with caution. During the time period covered by this sample, PROs were instructed to identify all readmissions to the same hospital within a 7- to 15-day period from the date of discharge. The PROs then reviewed potentially related hospital stays to determine if the discharge from the first stay was premature.

The PROs had more information than we did regarding what happened to the patient after the first discharge. However, HCFA's screening mechanism did not identify premature discharges that resulted in admissions to other acute care hospitals or early discharges that did not necessitate another hospital admission. While we did not track patient outcomes upon leaving the hospital, we assume not all of the premature discharge cases identified necessitated a hospital readmission. Therefore, this study included some case types that would not have been caught by PRO screens.

II. FINDINGS

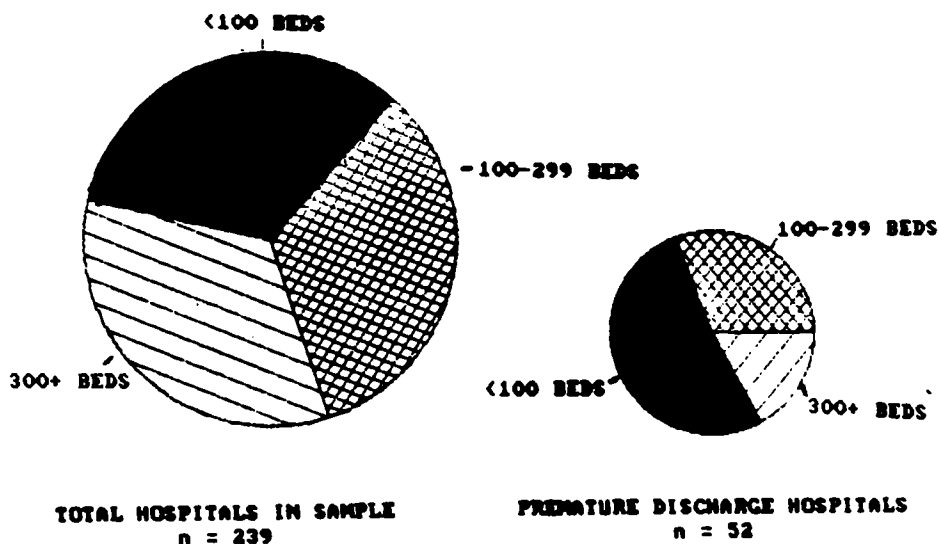
General Findings

Of the 7,045 discharges in the sample, the reviewers identified 74 as premature. That is, it was determined that approximately 1.1 percent of all sampled patients were still in need of acute

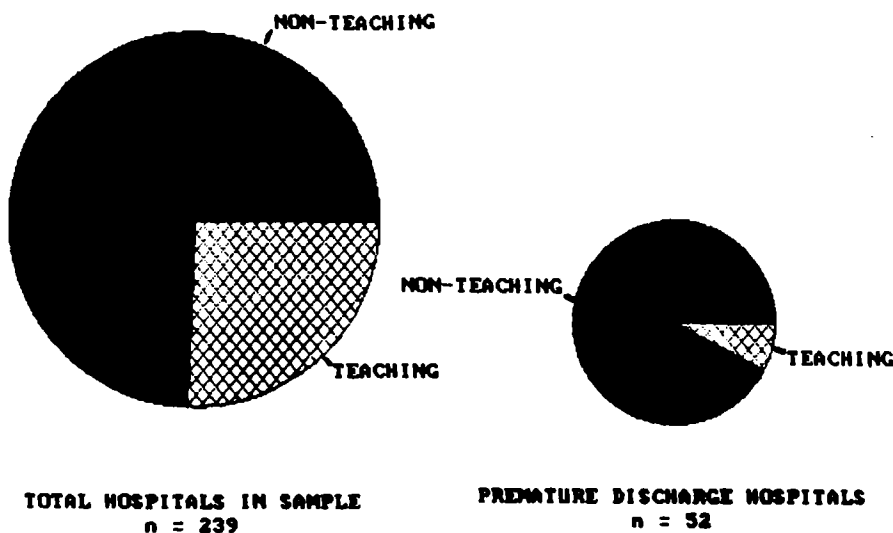
inpatient hospital care at the time of discharge. Weighted appropriately, this data would suggest that .8 percent of all Medicare discharges were premature. The premature discharges were identified in 52 or 21.8 percent of the 239 hospitals reviewed. Of the 239 sampled hospitals, 38 percent were rural; yet of the 52 hospitals with premature discharges, 60 percent were rural.

More than half of the hospitals in which premature discharges occurred were under 100 beds, whereas hospitals under 100 beds represented only one-third of all sample hospitals. Data arrayed in the graphics below suggest that premature discharges occurred more frequently in small, non-teaching, rural hospitals. More detailed information regarding hospital demographics can be found in Appendix II.

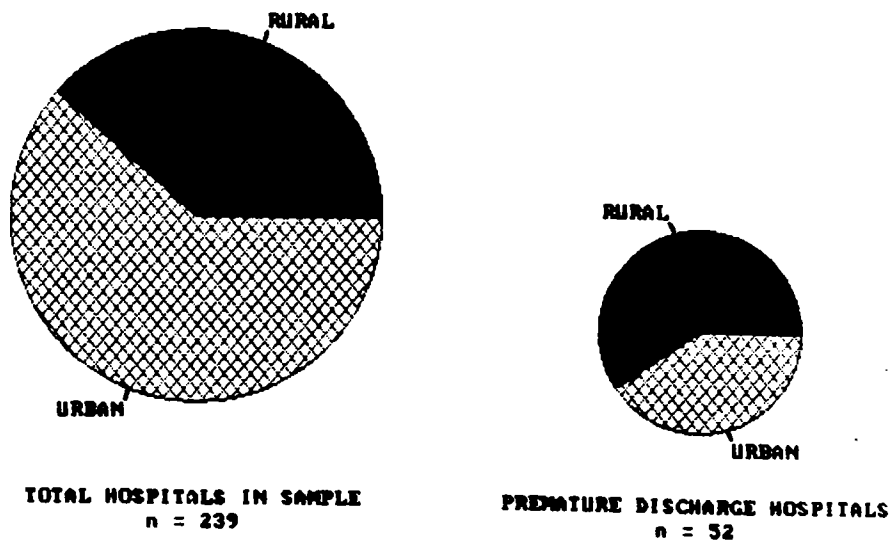
BED SIZE



TEACHING v. NON-TEACHING HOSPITALS



RURAL v. URBAN HOSPITALS



The distribution of states with identified early discharges shows a greater concentration in the southeastern and southcentral regions. The hospitals in these two southern areas accounted for 35 percent of the 239 sampled hospitals. Twenty-eight of the eighty-three hospitals in these areas (34 percent) were prematurely discharging patients. However, these 28 hospitals accounted for over one-half (28 of 52) of the hospitals identified as prematurely discharging patients and accounted for well over one-half (47 of 74) of the inappropriate discharge cases identified.

Please note that most of the northeastern section of the country was excluded from this review because New York, Maryland, New Jersey and Massachusetts held waivers exempting them from PPS.

Frequency of Premature Discharges

Fifteen of the fifty-two premature discharge hospitals were responsible for one-half of the 74 cases identified. The majority of hospitals (40 of 52) had only one incidence of premature discharge identified in the sampled cases reviewed. The highest frequency of inappropriate discharges found in 1 hospital was 6 of 30 sampled cases. Appendix III contains additional information regarding the frequency of premature discharges by hospital. The top five hospitals with the most premature discharges were small, rural, publically-owned facilities. These five hospitals also had a large number of quality concerns associated with the cases reviewed. The following chart indicates total cases sampled at these hospitals, the number of discharges where the quality of care received by the patient while hospitalized was questioned and the number of discharges identified as premature at each hospital.

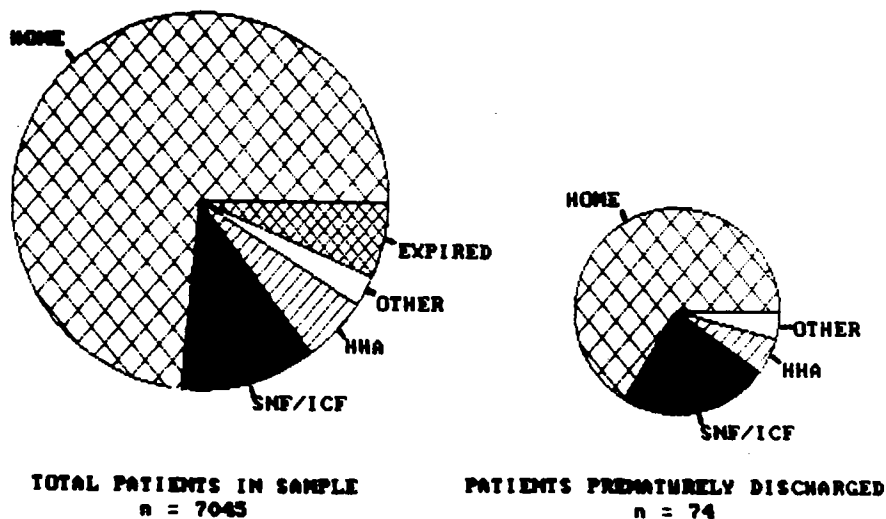
HOSPITAL	NUMBER OF CASES SAMPLED	NUMBER OF QUALITY ISSUES	PREMATURE DISCHARGES
A	30	12	6
B	30	16	4
C	30	11	4
D	30	13	3
E	30	9	3

Because of the nature of the quality issues identified and the number of cases evincing quality concerns, four of the above five hospitals were referred for potential sanction development.

Case Characteristics

Most of the 74 prematurely discharged beneficiaries were discharged to their homes (48 of 74); 1 in 5 were discharged to an intermediate care facility (ICF). The following graph compares all sample discharge destinations to that of the patients discharged prematurely. As evinced by the data, a disproportionate number of prematurely discharged patients compared to all sampled patients went to posthospital care settings such as skilled nursing facilities (SNFs), ICFs, home health agencies (HHAs), and other institutions. Appendix IV contains case discharge information broken out by hospital bed size. Please note that discharge destinations were coded from the actual hospital bills submitted. This data was not verified with information contained in the medical records.

DISCHARGE DESTINATIONS



Patient quality of care was evaluated separately from inappropriate discharge. Quality of care determinations were made within the context of treatment received during the stay in the hospital. The appropriateness of discharge determinations considered only the patients condition at discharge. Sixty of the seventy-four premature discharge cases evinced quality concerns attributable to care received during the course of treatment in the hospital.

Within the 74 premature discharges, 99 occurrences of inappropriate or incomplete treatment were identified at the time of the discharges. The most frequent occurrences of inadequate treatment involved in a premature discharge determination were due to incomplete workups (43 of 99), followed by incomplete therapies provided to the patients (26 of 99 cases). In 5 of the 74 cases, the information contained in the medical records indicated that the patient was nearing or had exceeded the "average length of stay" for the DRG and should be discharged in order to conserve hospital resources.

A listing of the generic reasons why patients should not have been released from the hospitals and the number of cases falling into each category is as follows: (Please note that a single case could fall into one or more categories.)

<u>Category</u>	<u>Number of Cases</u>
Incomplete Workup Prior to Discharge	43
Incomplete Therapies Provided Prior to Discharge	26
Temperature Greater than 100.2`F 24 Hours Prior to Discharge	10

Patient Unstable (Not Other-wise Classified) Prior to Discharge	6
Clinical Condition Worsening at Discharge	5
Financial Reasons for Discharge	5
Intravenous Antibiotic/Therapy Administered Less than 24 Hours Prior to Discharge	2
Medical Procedure Deferred Unnecessarily; Patient Discharged	1
Surgery Deferred Unnecessarily (Split Diagnosis/Therapy); Patient Discharged	1
	<hr/> 99

Appendix V compares the premature discharges by major diagnostic category (MDC) to the overall sample. Forty-five of the seventy-four premature discharges clustered in DRGs relating to the circulatory, respiratory and digestive systems as did the DRG in the total sample.

Financial Implications

As discussed earlier, hospitals can increase revenues by prematurely discharging patients. A better understanding of the financial considerations that may induce the premature discharge of patients can be had by looking at hospitals in the context of mean LOS, accuracy of DRG coding, case mix indices (CMIs) and Medicare profit margins.

In reference to LOS, premature discharges appear to fall into three categories:

- A. Those patients who were kept for only a few days, when the DRG mean LOS was several times greater (19 of 74).
- B. Those patients who were discharged on or about the mean LOS for their DRG (42 of 74).
- C. Those patients who were kept for considerably longer than the DRG mean LOS (13 of 74.)

The data above is based on an analysis of each DRG mean LOS compared to the patient's actual LOS in the hospital. The following chart arrays the sample mean LOS of each bed size category by type of hospital.

MEAN LENGTH OF HOSPITAL STAY
By Bed Size and Type of Hospital

Bed Size	ALL SAMPLE HOSPITALS			PREMATURE DISCHARGE HOSPITALS		
	MLOS	Number Hospitals	Number Cases	MLOS	Number Hospitals	Number Cases
< 100	6.83	79	2273	7.55	27	47
100 - 299	8.50	80	2387	8.06	16	18
300 +	9.37	80	2385	4.44	9	9

The data on the sample mean LOS for large hospitals identified as prematurely discharging patients provides some support for the theory that in order to maximize DRG payments hospitals and physicians would withhold services and discharge patients prematurely after a few days of care. These hospitals were discharging patients on an average of 5 days earlier than their peers. However, this does not hold true in small-sized hospitals where prematurely discharged patients stayed, on the average, almost a day longer than patients appropriately discharged.

Both analyses of data indicate that the majority of the patients being prematurely discharged left the hospital on, about, or considerably after the DRG mean LOS. This suggests the patients were not being inappropriately discharged in order for the hospitals to maximize their profits. Rather, it seems they were being discharged to minimize the hospitals' financial losses on patients whose continued cost of care would exceed the DRG payment. Regardless of whether the intent was to maximize profits or minimize losses, patients were still being put at risk.

Under PPS, the accuracy of DRG coding is critical in determining fair and accurate payment. Using ICD-9-CM codes, hospitals must list in correct sequence the appropriate diagnoses and procedures of a patient's case. This is necessary for the fiscal intermediary to assign the correct DRG and make appropriate payment.

In this study, DRG coding errors were identified in 15 of the 74 premature discharge cases (20.27 percent). This is similar to the 21.0 percent error rate found in the entire sample of 7,045 cases. Of the premature discharges having DRG changes, 11 of the 15 (73.3 percent) were recoded into a lower weighted DRG. This means the hospitals, by miscoding the DRGs, were overpaid for the patients' hospital stays. Four of the fifteen cases (26.7 percent) were recoded into higher weighted DRGs which indicates

the miscoding in these instances resulted in an underpayment to the hospital. In the entire sample, 61.7 percent of the coding changes resulted in a lower weighted DRG and in 38.3 percent of the cases the resultant DRG had a higher weight. It appears that in instances of premature discharges, the miscoding of DRGs tended to favor the hospitals slightly more often when compared to effects of coding errors in the entire sample.

In addition, we compared CMIs and Medicare profit margins of sampled hospitals to hospitals with premature discharges. According to HCFA, the CMI is a summary statistic representing the relative costliness of each hospital's mix of cases compared to the national average mix of cases. Thus, a hospital that offered less sophisticated services and treated relatively simple cases would be expected to maintain a lower CMI than one with more specialized services and more complicated cases. Small, rural hospitals would be expected to have lower CMIs than large, urban tertiary care hospitals.

The HCFA calculates and uses regional, national, and hospital specific CMIs for calculating DRG payment and in determining referral center status. If a rural hospital is designated a referral center, it receives a higher DRG payment amount because the hospital's cases are of a more complex nature than other rural hospitals. The following chart compares the CMIs of the sampled hospitals with the 52 hospitals prematurely discharging patients.

CASE MIX INDEX
By Bed Size, Year and Type of Hospital

Bed Size	ALL SAMPLE HOSPITALS			PREMATURE DISCHARGE HOSPITALS		
	CMI 1983*	1985**	Increase	CMI 1983	1985	Increase
< 100 (n)	0.9426 (79)	1.0029	+ 6.39 %	0.9189 (27)	0.9707	+ 5.64 %
100 - 299 (n)	1.0012 (80)	1.1195	+10.71 %	0.9694 (16)	1.0859	+12.02 %
300 + (n)	1.1024 (80)	1.2580	+14.11 %	1.0578 (9)	1.2454	+17.73 %
ALL (n)	1.0190 (239)	1.1273	+10.62 %			

* As used for payment; based on 1981 data

** Based on cases billed under PPS through June 1986 for FY 1985; used for capital cost formula only

As expected, the small sample hospitals had lower CMIs. However, all the hospitals with premature discharges had lower CMIs compared to their peers within the respective bed sizes.

Theoretically, increases in a hospital's CMI were anticipated due to events such as a change in services or specialty, an increased use of newly developed technology, and increased attention to DRG coding, which would identify complicating factors in patients' conditions which had not been coded previously. In addition, with many minor surgical procedures being moved to outpatient settings, the average inpatient case would become marginally more complex.

The HCFA has calculated hospital CMIs based on case experience during Fiscal Year (FY) 1985 from bills submitted through June 1986. As the previous chart demonstrates, in FY 1985 hospitals in all categories treated, on the average, more complex cases. Both medium and large hospitals with premature discharges had greater increases in their CMIs compared to other hospitals in the respective bed size categories. Small hospitals with identified premature discharges, who were mostly rural in nature, did not increase their CMIs at the rate of their peers, suggesting that they may not be as financially viable as others in an increasingly competitive hospital market.

Another indicator of a hospital's financial viability is its profit margin. This information was not specifically collected for all 239 hospitals in this study. However, 97 of the sampled hospitals were examined in the course of another OIG study focusing on hospital Medicare profits in FY 1984.

The weighted average Medicare profit margin was computed by adding total hospital Medicare revenues. Included were DRG payments, outliers, indirect medical education payments, and return on equity. Medicare inpatient operating costs were then subtracted to arrive at Medicare profit. The profit margin was calculated by dividing the Medicare profit by Medicare revenues as weighted by strata. The weighted average Medicare profit margin was about 15 percent. In dollars, the average Medicare hospital netted about \$1.4 million in revenues. The following chart shows the available weighted average profit margin by bed size for 97 of the 239 hospitals in this study compared to the weighted average profit margin by bed size of 23 of the 52 hospitals which had premature discharges.

NET PROFIT MARGIN
By Bed Size and Type of Hospital

Bed Size	All Sample Hospitals	Premature Discharge Hospitals
< 100 (n)	9.77% (30)	4.33% (13)
100 - 299 (n)	13.52% (28)	14.80% (6)
300 + (n)	15.79% (39)	18.24% (4)
ALL (n)	15.20% (97)	(23)

While midsized and large hospitals with premature discharges managed to accrue profits larger than other hospitals in their respective bed sizes, smaller hospitals who discharged patients prematurely had only half the profit margins of their peers.

While limited conclusions can be drawn based on the above data, it does appear that the majority of hospitals identified as prematurely discharging patients, (small, rural facilities), may not be as financially viable as their peers.

III. CONCLUSION

This study quantifies for the first time the frequency of premature discharges in a randomly selected, national sample. We found approximately .8 percent of all Medicare discharges to be premature. Our study indicated that the problem existed primarily in small, rural hospitals who, apparently to minimize financial losses, may be discharging patients prematurely. Of the patients discharged inappropriately, the majority had quality of care issues associated with their stay in the hospital. Inadequate treatment and incomplete therapies characterized most premature discharge cases.

There did not appear to be a discernable pattern in the DRGs or their respective MDCs assigned to the premature discharge cases. These cases reflected the frequencies of occurrence in the entire sample. The DRG coding errors were identified in 20.3 percent of

the 74 premature discharge cases. The effect of these coding errors tended to favor the hospital slightly more often than the coding errors found in the entire sample.

Overall, about 1 in 100 sampled beneficiaries were inappropriately discharged, indicating that the occurrences of premature discharges are fewer than previously suspected. Although the number is small, one in five hospitals reviewed had at least one occurrence of a premature discharge; one in every three rural hospitals had one or more identified instances.

As mentioned previously, this issue has received scrutiny from congressional committees, consumer groups and governmental agencies. Many of the recommendations from these studies were aimed at protecting the quality of patient care under PPS and have been or will be implemented by HCFA and the PROs.

Since the time our sampled patients were discharged from the hospital (October 1984 through March 1985), PROs have received increased authorities to deal with instances of premature discharges and/or poor quality of care. Hospital payment for subsequent stays in the same hospital, necessitated by a premature discharge, can now be denied. Soon, PROs will be able to deny payment for identified instances of substandard care. Also, PRO screens, used to target hospital cases for scrutiny for possible premature discharges, have been expanded to include sampling of all readmissions occurring within 31 days of the initial discharge. In addition, an effort has been underway to fully advise beneficiaries of their rights under PPS. They and their families should now be aware that a patient cannot be discharged from the hospital simply because "the DRG days are up."

Because these measures have not yet been fully implemented and their effectiveness has not been fully assessed, we do not recommend at this time that additional safeguards be established.

Also, HCFA is continuing to address the premature discharge issue. Several PRO studies were completed in the spring of 1987. These reports concluded that the premature discharge of patients was not a pervasive problem in the respective States reviewed. However, none of the PROs recommended that safeguards to prevent such occurrences be relaxed. Rather, the reports:

- A. recommended that PROs identify and focus review efforts on patient populations which appear to be more at risk of being prematurely discharged (California, Alabama, Iowa PROs);
- B. suggested changes in the generic discharge screens currently being used by PROs (Iowa PRO);

- C. commented on the effectiveness of concurrent discharge review by the PRO of patients that are to be transferred to SNFs after their discharge from the hospital (Alabama, Iowa, Arkansas PROs);
- D. stressed the importance of discharge planning in preventing readmissions to the hospital (Oregon PRO); and finally
- E. stressed the importance of accurate coding of discharge destinations on the Medicare bill. This information can help target potential patient populations at risk of inappropriate discharge (Florida, Alabama, Arkansas, California PROs).

We hope that information contained in this report along with the results and recommendations from the PRO studies will assist HCFA in formulating policy and strategies in this area. We support continued vigilance on the part of HCFA and the PROs in:

- o detecting individual cases of inappropriate discharges;
- o profiling hospitals and physicians to identify aberrant discharge patterns;
- o denying reimbursement for subsequent hospital stays resulting from a premature discharge; and
- o sanctioning of hospitals and physicians engaged in putting financial concerns above the well being of their patients.

APPENDIX I

Sampling and Methodology

The National DRG Validation Study used a stratified two-stage sampling design based on hospitals. The sample divided the population of hospitals meeting the study's eligibility criteria (outlined below) into 3 groups based on bed size: less than 100 beds, 100 to 299 beds, 300 or more beds.

The first stage used simple random sampling without replacement to select 80 hospitals within each group for a total sample size of 240 hospitals. First, it included only acute care, short stay facilities. This test also excluded specialty institutions, such as children's hospitals. Second, as of October 1, 1983, a waiver provision exempted New York, New Jersey, Massachusetts and Maryland from PPS. Therefore, the sample excluded facilities in these states. Third, the facility had to have contributed data to the construction of the initial relative weights assigned to DRG categories at the start of PPS. These initial relative weights derived from a 20 percent sample of Medicare discharges from facilities participating in the program in 1981. To be included in the sampling frame, a facility had to both contribute discharges to the construction of the initial relative weights and to participate as a provider at the beginning of PPS, October 1, 1983.

The effective universe of hospitals available for study numbered 4,913. Of the initial sample of 240 hospitals, 1 facility terminated its Medicare eligibility between the sampling timeframe and the actual collection of medical records. The first-stage sample therefore included 239 (4.9 percent) randomly selected, short term, acute care facilities eligible under the Medicare program at least since 1981 and not located in a waiver State.

The second stage of the design employed systematic random sampling to select 30 Medicare discharges from each of the 239 hospitals. The HCFA's Bureau of Data Management and Strategy (BDMS) supplied a list of all final bills received by BDMS from the fiscal intermediaries through April 30, 1985. Each bill represented one Part A Medicare discharge for the time period October 1, 1984, to March 31, 1985. If a facility had less than 30 discharges during the applicable period, we selected all is available Medicare discharges.

Record Collection

In mid-1986, OIG sent registered letters to the selected hospitals, requesting copies of the complete medical record for

each of the sampled discharges. Administrative subpoenas compelled the participation of a few institutions. Of the 222,396 records available from the 239 hospitals, the sample design requested 7,076 (3.2 percent). The study ultimately received and reviewed 7,045 (99.6 percent) medical records. The hospitals could not locate the remaining 31 records.

Medical Review

Physicians experienced in chart review analyzed all cases of premature discharge. The physician scrutinized the entire patient record to determine whether the patient required further hospitalization at the time of discharge. On discovering an instance of premature discharge, the physician dictated a narrative summary describing the nature of the deficiencies and citing supporting evidence from the patient chart. This methodology paralleled the process used in local peer review and by the PROs. The reviewers had instructions to ignore marginal problems or cases involving honest differences in medical judgment about appropriate management, selecting only discharges exhibiting major inadequacies under any recognized standard of care.

Appropriate medical experts reviewed records presenting specialty care issues. Physician panels convened to decide difficult cases. The bulk of reviewing physicians had appropriate Board certification, committee experience and recent patient care responsibility. An OIG physician reviewed the clarity and consistency of each medical reviewer's conclusions.

Statistical Analysis

Because of the two-stage sample design, this report evaluated its data by hospitals rather than by discharges. It calculated proportions of events as the number of events over the total number of discharges reviewed within each bed size group. Estimates for the total sample (weighted proportions) were weighted by the number of hospitals in each group. Projections to the universe of discharges derived from the inverse of the sampling fractions with the estimates and variances calculated accordingly.

Poststratification analysis followed HCFA practices for classifying hospitals by their demographic characteristics - urban versus rural location and teaching status. Urban versus rural status depended on whether the hospital's location fell within the boundaries of a standard metropolitan area as defined by the Census Bureau. The HCFA considered a hospital to have teaching status if it has an accredited residency program. These two characteristics warranted logit analysis because they affected the hospital's payment under PPS.

This survey employed a generalized logit analysis using weighted least squares for categorical data to test the effects of these variables on the various events measured in this study. This procedure reweighted data to properly represent the effect of independent variables not controlled by the appropriate degrees of freedom and provided a test of the significance of the model parameters and the goodness of fit of the models.

APPENDIX II

HOSPITAL DEMOGRAPHICS

TCHST	URST	SIZE	PREMATURE DISCHARGE HOSPITAL	ALL SAMPLE HOSPITALS	PREMATURE DISCHARGE CASES	ALL SAMPLE CASES
TEACH- ING	URBAN	<100	0	2	0	59
		100- 299	0	15	0	449
		300+	4	44	4	1345
NON/ TEACH- ING	URBAN	<100	3	14	4	393
		100- 299	11	41	11	1226
		300+	3	31	3	898
NON/ TEACH- ING	RURAL	<100	24	63	43	1821
		100- 299	5	24	7	712
		300+	2	5	2	142
TOTAL			52	239	74	7045

APPENDIX III

FREQUENCY OF PREMATURE DISCHARGES BY HOSPITAL

CASE FREQUENCY OF PREMATURE DISCHARGE	# OF HOSPITALS	PERCENTAGE OF CASE FREQUENCY
1	40	54.05
2	7	18.92
3	2	8.11
4	2	10.81
6	1	8.11

APPENDIX IV

DISCHARGE DESTINATION BY BED SIZE

Discharge Destination Code	Disposition of Complete Sample by Hospital Bed Size				% Case Frequency	Disposition of Premature Discharge (PD) Subsample by Hospital Bed Size				
	< 100	100-299	300+	Total		< 100	100-299	300+	Total	% PD Case Frequency
1 HOME	1499 (65.95%)	1739 (72.85%)	1833 (76.86%)	5071	71.98	27 (57.45%)	13 (72.22%)	8 (88.89%)	48	64.86
2 Another Acute Care Hospital	18 (3.87%)	50 (2.09%)	20 (0.84%)	158	2.24	2 (4.26%)	None	None	2	2.70
3 SNF	47 (2.07%)	41 (1.72%)	43 (1.80%)	131	1.86	1 (2.13%)	None	None	1	1.35
4 ICF	296 (13.21%)	238 (9.97%)	136 (5.70%)	670	9.51	11 (23.40%)	4 (22.22%)	1 (11.11%)	16	21.62
5 Another Institution	50 (2.20%)	32 (1.34%)	37 (1.55%)	119	1.69	1 (2.13%)	None	None	1	1.35
6 HHA	124 (5.46%)	125 (5.24%)	141 (5.91%)	390	5.54	3 (6.38%)	1 (5.56%)	None	4	5.41
7 Patient Left AMA	10 (0.44%)	12 (0.50%)	6 (0.25%)	28	0.40	None	None	None	None	None
8 Expired	127 (5.59%)	148 (6.20%)	167 (7.00%)	442	6.27	None	None	None	None	None
9 Still A Patient	32 (1.41%)	2 (0.08%)	2 (0.08%)	36	0.51	2 (4.26%)	None	None	2	2.70
Total	2273	2387	2385	7045		47	18	9	74	

APPENDIX V

CASE FREQUENCY BY MDC

Major Diagnostic Category (MDC) Code and Definition	Frequency of Premature Discharge Cases (%)	Frequency of Cases in the Complete Sample (%)
05: Diseases & Disorders of the Circulatory System	19 (25.68%)	1660 (23.56%)
04: Diseases & Disorders of the Respiratory System	15 (20.27%)	1091 (15.49%)
06: Diseases & Disorders of the Digestive System	11 (14.86%)	870 (12.35%)
11: Diseases & Disorders of the Kidney and Urinary Tract	7 (09.46%)	346 (04.91%)
10: Endocrine, Nutritional & Metabolic Diseases & Disorders	6 (08.11%)	342 (04.85%)
08: Diseases & Disorders of the Musculoskeletal System & Connective Tissue	4 (05.41%)	628 (08.91%)
01: Diseases & Disorders of the Nervous System	3 (04.05%)	601 (08.53%)
09: Diseases & Disorders of the Skin, Subcutaneous Tissue & Breast	3 (04.05%)	180 (02.56%)
20: Substance Use & Substance Induced Organic Mental Disorders	2 (02.70%)	30 (00.43%)
17: Myeloproliferative Diseases and Disorders, Poorly Differ- entiated Neoplasms	1 (01.35%)	122 (01.73%)
18: Infectious & Parasitic Diseases (systemic or unspecified sites)	1 (01.35%)	112 (01.59%)
19: Mental Diseases & Disorders	1 (01.35%)	104 (01.48%)
NOT SPECIFIED	1 (01.35%)	66 (00.94%)
07: Hepatobiliary System and Pancreas	-0-	197 (02.80%)
12: Diseases & Disorders of the Male Reproductive System	-0-	185 (02.63%)
03: Diseases & Disorders of the Ear, Nose, and Throat	-0-	129 (01.83%)
02: Diseases & Disorders of the Eye	-0-	106 (01.50%)
21: Injury, Poisoning & Toxic Effects of Drugs	-0-	85 (01.21%)
13: Diseases & Disorders of the Female Reproductive System	-0-	77 (01.09%)
16: Blood, Blood Forming Organs & Immunological Diseases and Disorders	-0-	75 (01.06%)
23: Factors Influencing Health Status & Other Contacts With Health Services	-0-	33 (00.47%)
22: Burns	-0-	5 (00.07%)
15: Newborns & Other Neonates With Conditions Originating in the Perinatal Period	-0-	1 (00.01%)
Total	74	7,045