Department of Health and Human Services

OFFICE OF INSPECTOR GENERAL

Medicare Payments for DRG 475

Respiratory System Diagnosis With Ventilator Support

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OFFICE OF INSPECTOR GENERAL

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EXECUTIVE SUMMARY

PURPOSE

To identify hospitals with atypically high billing patterns for patients with a respiratory system diagnosis and ventilator support (DRG 475).

BACKGROUND

Under Medicare's prospective payment system, a hospital's payment amount is determined by taking a hospital's individual base payment rate and multiplying it by the weight of the diagnosis related group (DRG) assigned to the patient stay. A DRG's weight is determined by the intensity of resources, on average, that are needed to treat that kind of case. The higher the relative weight, the greater the reimbursement.

Medicare reimbursed hospitals nearly $2 billion for DRG 475 in 1996. The hospital stays of patients whose principal diagnosis relates to diseases and disorders of the respiratory system, and who receive continuous mechanical ventilation support, are coded as DRG 475. This DRG typically has a higher Medicare reimbursement than most other DRGs.

The Health Care Financing Administration (HCFA) contracts with two Clinical Data Abstraction Centers to collect clinical data from hospital medical records. The Abstraction Centers are responsible for validating a random sample of claims from all Medicare inpatient hospital discharges. The results of the 1996 validation work showed that 7 percent of DRG 475 discharges sampled should have been coded to a lower-weighted DRG. The HCFA estimated that the total overpayment attributable to incorrect DRG 475 classifications was $67 million.

In several recent Office of Inspector General reports we highlighted problems with DRG upcoding and recommended that HCFA systematically monitor the situation.

For this inspection, we analyzed the Medicare Provider Analysis and Review file to identify hospitals with atypically high billings for DRG 475 in fiscal years 1993 to 1996.

FINDINGS

Forty-six hospitals had atypically high Medicare billings for DRG 475.

A relatively small number of hospitals (46 of 3,714) had abnormally high DRG 475 discharges compared to national figures. These 46 hospitals were identified based on two criteria: (1) a large proportion of DRG 475 discharges to total discharges in 1996, and (2) a significant increase in the proportion of DRG 475 discharges to total discharges between 1993 and 1996.

For the 46 hospitals, DRG 475 discharges increased from 793 in 1993 to 2,063 in 1996 -- an almost three-fold increase (160 percent). Nationally, DRG 475 discharges increased from 81,497

in 1993 to 100,355 in 1996. An increase of only 23 percent.

The proportion of DRG 475 discharges to total discharges for the 46 hospitals increased by a factor of almost 3 (159 percent), from 0.82 percent in 1993 to 2.12 percent in 1996. In contrast, the national proportion increased only 16 percent from 0.73 percent in 1993 to 0.85 percent in 1996.

The questionable billing of DRG 475 could have a major financial impact.

For the 46 hospitals, the number of DRG 475 discharges exceeded national norms by 1,134 cases. Earlier DRG validation work performed by the Office of Inspector General (OIG) found an average per discharge difference of $10,184 between DRG 475 and the DRG that should have been coded. Based on this amount, we estimate that potential overpayments could be as high as $11.5 million or 31 percent of the $37.6 million paid to these hospitals for DRG 475 in 1996.

The true upcoding error rate can only be determined by undertaking a detailed claims review at each hospital. Therefore, the potential overpayments at each hospital would vary according to actual coding error rates.

NEXT STEPS

As noted in the background, we previously recommended that HCFA perform routine monitoring and analysis of hospital billing and clinical data to proactively identify aberrant patterns of upcoding. The HCFA agreed with the recommendation and outlined an extensive program to respond to it. We offer the information in this report as insight into another possible problem DRG for HCFA to consider when refining its plan. We recognize that only record reviews by trained professionals will establish if incorrect coding has occurred at the 46 hospitals identified. Meanwhile, we have referred the 46 hospitals to our Office of Investigations. We look forward to continuing collaboration with HCFA on this matter.

T A B L E O F C O N T E N T S

INTRODUCTION

PURPOSE

To identify hospitals with atypically high billing patterns for patients with a respiratory system diagnosis and ventilator support (DRG 475).

BACKGROUND

In 1983, the Congress enacted a prospective payment system under which Medicare pays a fixed, predetermined amount for inpatient hospital stays. The payment amount is determined by taking a hospital's individual base payment rate and multiplying it by the weight of the diagnosis related group (DRG) assigned to the patient stay. A DRG's weight is determined by the intensity of resources, on average, that are needed to treat that kind of case.

Establishing Hospital Reimbursement for DRGs

Discharges are classified into DRGs based on several factors. Generally, classification of a medical DRG is based on the principal diagnosis, and classification of a surgical DRG is based on the operating room procedure performed. However, other factors influencing DRG assignment include additional diagnoses, certain procedures performed during the stay, as well as age, sex, and discharge status of the patient. Hospitals use codes from the International Classification of Diseases, Ninth Edition, Clinical Modification (ICD-9-CM) to report diagnosis and procedure information.

When a patient is discharged, the physician will summarize information on a discharge face sheet. This information may include the principal diagnosis, additional diagnoses, and procedures performed during the stay. A coder, trained in medical classification, uses this information to assign the most appropriate ICD-9-CM code. The hospital coder reviews the entire medical record as part of the coding process.

A hospital receives payment for treating a Medicare patient by preparing a claim and forwarding it to the Medicare fiscal intermediary. The intermediary processes the claim through a series of automated screens. These screens, called the Medicare Code Editor, identify cases that need further review before being classified into a DRG. Cases are classified by the GROUPER software program into the appropriate DRG. This program classifies each case into a DRG based on diagnosis, procedure code, and demographic information. Hospital reimbursement is then calculated by multiplying the weight of each DRG by the hospital's individual base payment rate. Reimbursement will increase as the relative weight increases.

Diagnosis Related Group 475

Medicare reimbursed hospitals nearly $2 billion for patients with a respiratory system diagnosis and ventilator support in 1996. The hospital stays of patients whose principal diagnosis relates to

diseases and disorders of the respiratory system (Major Diagnostic Category 4), and who receive continuous mechanical ventilation support, are coded as DRG 475. Major Diagnostic Category 4 includes DRGs such as simple pneumonia and pleurisy, chronic obstructive pulmonary disease, and pulmonary edema and respiratory failure. Currently, there are 421 ICD-9-CM codes and 3 non-operating room procedure codes that can lead to the coding of DRG 475.

The 1996 relative weight of DRG 475 is 3.7015. It is among the top 5 percent of DRGs in terms of relative weight. Because payments are greater for higher weighted DRGs, the mis-classification of a DRG 475 discharge can have significant financial implications.

The Health Care Financing Administration's DRG Validation Work

Medicare Peer Review Organizations (PROs) are required to contract out DRG validation efforts to two Clinical Data Abstraction Centers. The PROs are groups of health care professionals contracted by HCFA to oversee that care given to Medicare patients is reasonable, necessary, and provided in the most appropriate setting.

The Abstraction Centers' validation effort provides HCFA with an overall assessment of DRG coding and identifies problematic DRGs. The 1996 validation effort consisted of a nationally representative random sample of 20,152 claims from all Medicare inpatient hospital discharges. There were 185 discharges for patients with a respiratory system diagnosis and ventilator support in the sample. The results disclosed that 7 percent (13 of 185) of the sample DRG 475 discharges were improperly coded. All 13 of the erroneously coded discharges resulted in overpayments to hospitals. The total estimated overpayment attributable to DRG 475 discharges was $67,176,843 for 1996.

The 13 incorrectly coded discharges should have been coded to 10 less expensive DRG codes. The hospitals should have coded 3 of the discharges as DRG 127 (Heart Failure and Shock); another 2 should have been coded to DRG 121 (Circulatory Disorders with Acute Myocardial Infarction & Major Complications, Discharged Alive). A complete listing of the appropriate DRG codes can be found in Appendix A.

The Office of Inspector General's DRG Validation Work

In an inspection entitled, *Using Software to Detect Upcoding of Hospitals Bills* (OEI-01-97-00010, August 1998), the Office of Inspector General (OIG) performed DRG validation work on a sample of 2,622 Medicare inpatient hospital discharges. Twenty-six of the 2,622 discharges were for patients with a respiratory system diagnosis and ventilator support. The results of this validation showed that 19 percent of the sample DRG 475 discharges (5 of 26) were improperly coded. All five erroneously coded discharges resulted in overpayments to the hospitals.

The erroneously coded DRG 475 discharges should have been coded to four less expensive DRGs. Two of the erroneously coded discharges should have been coded to DRG 127. A complete listing of the appropriate DRG codes can be found in Appendix B.

Other Office of Inspector General DRG Work

In a follow-up to the OIG report just mentioned, we sent an advisory report to HCFA entitled, *Monitoring the Accuracy of Hospital Coding* (OEI-01-98-00420, September 30, 1998). We pointed out that the DRG system was vulnerable to upcoding, particularly within certain DRGs. We recommended that HCFA perform routine monitoring and analysis of hospital billing data and clinical data to identify aberrant patterns of upcoding. In another recent report entitled, *Medicare Payments for Septicemia* (OEI-03-98-00370, October 1998), we reviewed hospital coding patterns over time for septicemia. We found 120 hospitals with atypically high Medicare billings for septicemia. We repeated our recommendation that HCFA institute a system to identify hospitals with atypically high billings for DRGs. We offered our methodology as an example of a technique which could be used to focus HCFA's limited resources in identifying potential cases of DRG upcoding. This current report provides another example of how this technique could be used.

METHODOLOGY

We extracted data from the Medicare Provider Analysis and Review (MedPAR) file for fiscal years 1993 to 1996. The MedPAR file contains Medicare DRG discharge information for all hospitals. For each hospital that had at least one DRG 475 discharge (3,714 hospitals), we determined the number of DRG 475 discharges and the total overall number of discharges by year.

We calculated the proportion of DRG 475 discharges to total discharges for each hospital in 1996. We found that DRG 475 discharges accounted for more than 1.5 percent of all discharges in just 12 percent of hospitals. We then determined the proportion of DRG 475 discharges to total discharges for 1993 and compared it to the proportion calculated for 1996. Between 1993 and 1996, the proportion had increased by more than 100 percent in 14 percent of the hospitals.

To identify hospitals with atypically high DRG 475 billing patterns, we selected hospitals with the following criteria: (1) DRG 475 discharges accounted for more than 1.5 percent of all discharges in 1996, **and** (2) the proportion of DRG 475 discharges to total discharges had increased by more than 100 percent between 1993 and 1996. We excluded hospitals with less than 20 DRG 475 discharges in 1996 and hospitals currently under investigation by the OIG.

We contacted a number of Peer Review Organizations in different States to determine if the hospitals we identified specialized in ventilator dependent patients during the period of our review. We have received responses for 83 percent (38 of 46) of the hospitals identified. Almost all of the hospitals (37 of 38) did not specialize in ventilator dependent patients during our review period. One hospital did have a pulmonary support unit.

For the hospitals with atypical billing patterns, we determined a potential overpayment amount for 1996. We first calculated a per discharge overpayment amount. We based this calculation on the recent DRG validation work done by the OIG. We determined the difference between the DRG 475 payment that was inappropriately billed and the payment for the DRG code that should have been billed. We compared the number of DRG 475 discharges for each of the hospitals identified against the national average of DRG 475 discharges for all hospitals. We then multiplied this

difference by the estimated per discharge overpayment to determine the potential financial impact to the Medicare program.

This inspection was conducted in accordance with the *Quality Standards for Inspections* issued by the President's Council on Integrity and Efficiency.

F I N D I N G S

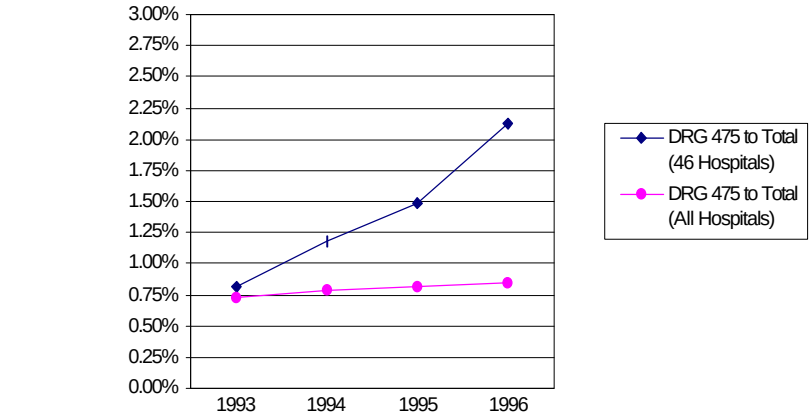
FORTY-SIX HOSPITALS HAD ATYPICALLY HIGH MEDICARE BILLINGS FOR DRG 475.

A relatively small number of hospitals had abnormally high discharges for patients with a respiratory system diagnosis and ventilator support compared to national figures. For 46 hospitals, total DRG 475 discharges increased by a factor of almost 3, from 793 in 1993 to 2,063 in 1996. This represents an average increase of 38 percent a year. Nationally, DRG 475 discharges increased from 81,497 in 1993 to 100,355 in 1996, with an average increase of 7 percent a year.

Some of the 46 hospitals exhibited unusually high increases in DRG 475 discharges from 1993 to 1996. For instance, one hospital's DRG 475 discharges increased from 15 (out of 1,905 total discharges) in 1993 to 51 (out of 1,837 total discharges) in 1996 -- a more than three-fold increase. Another hospital's DRG 475 discharges increased from 4 (out of 1,199 total discharges) in 1994 to 48 (out of 1,287 total discharges) in 1995 -- a twelve-fold increase.

These 46 hospitals also had atypically high proportions of DRG 475 discharges to total discharges as compared to the national average. As illustrated in the chart below, for the 46 hospitals, the proportion of DRG 475 discharges to total discharges increased from 0.82 percent in 1993 to 2.12 percent in 1996. This represents an almost three-fold increase, with an average increase of 38 percent a year. For all hospitals, this same proportion increased from 0.73 percent in 1993 to 0.85 percent in 1996, with an average increase of 5 percent a year.

Proportion of DRG 475 Discharges to Total Discharges
1993 to 1996



	1993	1994	1995	1996
DRG 475 to Total (46 Hospitals)	0.82%	1.18%	1.49%	2.12%
DRG 475 to Total (All Hospitals)	0.73%	0.78%	0.81%	0.85%

Between 1993 and 1996, the proportion of DRG 475 discharges to total discharges for the 46 hospitals increased between 2 and 33 times. For nearly one-quarter of the hospitals (11 of 46), the proportion increased by a factor of four or more.

The 46 hospitals were located in 21 States. Of the 46 hospitals, 25 were concentrated in 4 States. Eleven hospitals were in California, six in Florida, and Georgia and Texas both had four. The remaining States contained one or two hospitals.

THE QUESTIONABLE BILLING OF DRG 475 COULD HAVE A MAJOR FINANCIAL IMPACT.

For the 46 hospitals, the number of discharges for patients with a respiratory system diagnosis and ventilator support exceeded national norms by 1,134 cases. Using previous OIG validation efforts, we calculated a difference of $10,184 between the DRG 475 payment that was inappropriately billed and the payment for the DRG code that should have been billed. Therefore, we estimate that potential overpayments could be as high as $11.5 million in 1996. This $11.5 million overpayment represents almost one-third of the $37.6 million paid to these hospitals for DRG 475 in 1996.

The true upcoding error rate can only be determined by undertaking a detailed claims review at each hospital. Therefore, the potential overpayments at each hospital would vary depending on actual coding error rates.

NEXT STEPS

As noted in the background, we previously recommended that HCFA perform routine monitoring and analysis of hospital billing and clinical data to proactively identify aberrant patterns of upcoding. The HCFA agreed with the recommendation and outlined an extensive program to respond to it. We offer the information in this report as insight into another possible problem DRG for HCFA to consider when refining its plan. We recognize that only record reviews by trained professionals will establish if incorrect coding has occurred at the 46 hospitals identified. Meanwhile, we have referred the 46 hospitals to our Office of Investigations. We look forward to continuing collaboration with HCFA on this matter.

A P P E N D I X A

CLINICAL DATA ABSTRACTION CENTERS' 1996 VALIDATION WORK FOR DRG 475

This table shows the results of the 1996 Clinical Data Abstraction Centers' validation effort for DRG 475 (Respiratory System Diagnosis with Ventilator Support). Column one contains the appropriate DRGs for the 13 upcoded DRG 475 discharges identified in the validation work.

Hospital DRG	DRG Weight	Description [1]	Number of Times DRG was Upcoded [2]	Percent of Total Times DRGs were Upcoded
127	1.0302	Heart Failure & Shock	3	23%
121	1.6459	Circulatory Disorders with Acute Myocardial Infarction & Major Complications, Discharged Alive	2	15%
014	1.2065	Specific Cerebrovascular Disorders Except Transient Ischemic Attack	1	8%
022	0.8127	Hypertensive Encephalopathy	1	8%
076	2.5601	Other Respiratory System Operating Room Procedures with Complications and Comorbidities	1	8%
123	1.4370	Circulatory Disorders with Acute Myocardial Infarction, Expired with Complications and Comorbidities	1	8%
130	0.9384	Peripheral Vascular Disorders	1	8%
144	1.0689	Other Circulatory System Diagnoses with Complications and Comorbidities	1	8%
174	0.9880	Gastrointestinal Hemorrhage with Complications and Comorbidities	1	8%
202	1.3177	Cirrhosis & Alcoholic Hepatitis	1	8%
		Total	13	102% [3]

[1] These definitions were taken from the *Diagnosis Related Groups Definitions Manual*, version 15.0, as compiled by the company, 3M Health Information Systems.

[2] This column represents the 13 upcoded discharges from the Abstraction Centers' validation work.

[3] The total for this column does not equal 100 percent due to rounding.

APPENDIX B

OFFICE OF INSPECTOR GENERAL'S VALIDATION WORK FOR DRG 475

This table shows the results of the Office of Inspector General's (OIG) validation work for DRG 475 (Respiratory System Diagnosis with Ventilator Support). Column one contains the appropriate DRGs for the five upcoded DRG 475 discharges found in the validation work.

Hospital DRG	DRG Weight	Description [1]	Number of times DRG was Upcoded [2]	Percent of Total Times DRGs were upcoded
127	1.0302	Heart Failure & Shock	2	40%
014	1.2065	Specific Cerebrovascular Disorders Except Transient Ischemic Attack	1	20%
088	1.0018	Chronic Obstructive Pulmonary Disease	1	20%
295	0.7634	Diabetes Age 0-35	1	20%
		Total	5	100%

[1] These descriptions were taken from the *Diagnosis Related Groups Definitions Manual*, version 15.0, as compiled by the company, 3M Health Information Systems.

[2] This column represents the five upcoded discharges from the OIG's validation work.