

Department of Health and Human Services

**OFFICE OF
INSPECTOR GENERAL**

Medicare Payments for DRG 014:

**Specific Cerebrovascular Disorders Except
Transient Ischemic Attack**



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EXECUTIVE SUMMARY

PURPOSE

To identify hospitals with atypically high billing patterns for patients with specific cerebrovascular disorders except transient ischemic attacks (DRG 014).

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 almost \$1.9 billion for DRG 014 in 1996. DRG 014 is coded when patients have principal diagnoses that include cerebrovascular accident and intracerebral hemorrhage. This code can trigger a higher Medicare reimbursement compared to other codes where patients may exhibit similar symptoms. DRG 015 (Transient Ischemic Attack and Precerebral Occlusions) is one such code.

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 4 percent of DRG 014 discharges sampled should have been coded to a lower-weighted DRG. The HCFA estimated that the total overpayment attributable to incorrect DRG 014 classifications was \$11.9 million.

For this inspection, we analyzed the Medicare Provider Analysis and Review file to identify hospitals with atypically high billings for DRG 014 in fiscal years 1993 to 1996.

FINDINGS

Thirty-five hospitals had atypically high Medicare billings for DRG 014

A relatively small number of hospitals (35 of 4,883) had abnormally high DRG 014 discharges compared to national figures. These 35 hospitals were identified based on two criteria: (1) a large proportion of DRG 014 discharges to total discharges in 1996,

and (2) a significant increase in the proportion of DRG 014 discharges to total discharges between 1993 and 1996.

For the 35 hospitals, DRG 014 discharges increased 73 percent from 2,281 in 1993 to 3,941 in 1996. Nationally, DRG 014 discharges increased only 6 percent from 360,354 in 1993 to 382,130 in 1996. Between 1993 and 1996, the proportion of DRG 014 discharges to all discharges for the 35 hospitals increased 57 percent from 3.55 percent to 5.56 percent. In contrast, the national proportion increased only 1 percent from 3.23 percent in 1993 to 3.25 percent in 1996.

The questionable billing of DRG 014 could have a financial impact on the Medicare program

For the 35 hospitals, the number of DRG 014 discharges exceeded national norms by 1,403 cases. Earlier DRG validation work performed by the Office of Inspector General (OIG) found an average per discharge difference of \$1,716 between DRG 014 and the DRG that should have been coded. Based on this amount, we estimate that potential overpayments could be as high as \$2.4 million or 14 percent of the \$16.6 million paid to these hospitals for DRG 014 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

In several recent OIG reports, we 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 35 hospitals identified. Meanwhile, we have referred the 35 hospitals to our Office of Investigations. We look forward to continuing collaboration with HCFA on this matter.

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INTRODUCTION

PURPOSE

To identify hospitals with atypically high billing patterns for patients with specific cerebrovascular disorders except transient ischemic attacks (DRG 014).

BACKGROUND

In 1996, Medicare reimbursed hospitals almost \$1.9 billion for patients whose cases were categorized as DRG 014. Principal diagnoses under DRG 014 include cerebrovascular accident and intracerebral hemorrhage. Between 1993 and 1994, nine diagnosis codes were added and three diagnosis codes were deleted under DRG 014. Currently, there are a total of 17 diagnosis codes that can lead to categorizing a case as DRG 014.

Hospital Reimbursement for Diagnostic Related Groups

Diagnostic related groups (DRGs) are categories used to determine Medicare reimbursement for patient stays under the prospective payment system established by Congress in 1983. The actual Medicare payment amount is calculated by multiplying the individual hospital's base payment rate by the weight of the DRG. The weight of a DRG is determined by the intensity of resources, on average, that are needed to treat that kind of case.

When a patient is discharged, the physician summarizes information on a discharge face sheet. This information includes principal diagnosis, additional diagnoses, and procedures performed during the stay. Hospitals use codes from the *International Classification of Diseases, Ninth Edition, Clinical Modification* (ICD-9-CM) to report diagnosis and procedure information. A coder, trained in medical classification, uses all this information to assign the most appropriate ICD-9-CM code. A patient's entire medical record is reviewed 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 the assigned DRG by the hospital's individual base payment rate.

Reimbursement increases or decreases with the relative weight of the DRG. Sometimes patients exhibit similar symptoms, but their cases are assigned to different DRGs. A misclassification of a DRG can result in an overpayment. For example, the weight of DRG 014 (Specific Cerebrovascular Disorders Except Transient Ischemic Attack) was 1.2065 in 1996. In the same year, the weight of DRG 015 (Transient Ischemic Attack and Precerebral Occlusions) was 0.7227. If a case that should have been DRG 015 was incorrectly classified as DRG 014, the overpayment would be approximately \$1,700 per case.

The Health Care Financing Administration's DRG Validation Work

The Health Care Financing Administration (HCFA) contracts with Medicare Peer Review organizations (PROs) to ensure that care provided to Medicare patients is reasonable, necessary, and provided in the most appropriate setting. The PROs are required to contract out DRG validation efforts to two Clinical Data Abstraction Centers. The Abstraction Centers' validation efforts provide HCFA with an overall assessment of DRG coding and identifies problematic DRGs.

The 1996 validation effort found that 4 percent of the sample DRG 014 cases were improperly coded. The sample consisted of 20,152 claims from all Medicare inpatient hospital discharges. There were 682 sample discharges for patients with a diagnosis of specific cerebrovascular disorder, and 27 of 682 were improperly coded. Twenty-four of the 682 improperly coded cases resulted in overpayments to hospitals. These 24 cases should have been coded to 10 less expensive DRG codes. For example, 12 of the cases should have been coded as DRG 015. A complete listing of the appropriate DRG codes can be found in Appendix A. The total estimated overpayment attributable to DRG 014 discharges in 1996 was \$11,906,598.

The Office of Inspector General's DRG Validation Work

In a study 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. Of the 2,622 discharges, 129 were for patients with a specific cerebrovascular vascular disorder. The results of this validation showed that 9 percent of the sample DRG 014 discharges (12 of 129) were improperly coded. All of the erroneously coded discharges resulted in overpayments to the hospitals.

The erroneously coded DRG 014 discharges should have been coded to seven less expensive DRGs. Six of the erroneously coded discharges should have been coded to DRG 015. 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 Office of Inspector General report just mentioned, the OIG sent an advisory report to HCFA entitled, *Monitoring the Accuracy of Hospital Coding* (OEI-01-98-00420, January 21, 1999). 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.

The OIG has also released three reports focusing on hospital coding patterns over time for DRGs 475, 416, and 296. *Medicare Payments for DRG 475: Respiratory System Diagnosis with Ventilator Support* (OEI-03-98-00560, January 1999), *Medicare Payments for Septicemia* (OEI-03-98-00370, March 1999), and *Medicare Payments for DRG 296: Nutritional and Miscellaneous Metabolic Disorders* (OEI-03-98-00490, April 1999) found a relatively small number of hospitals with atypically high billings for DRGs 475, 416, and 296. The methodology in these reports demonstrated a technique that could be used to focus HCFA's limited resources in identifying potential cases of DRG upcoding. This report on specific cerebrovascular disorders 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 014 discharge (4,883 hospitals), we determined the number of DRG 014 discharges and the total overall number of discharges by year.

We calculated the proportion of DRG 014 discharges to total discharges for each hospital in 1996. We found that DRG 014 discharges accounted for more than 4.5 percent of all discharges in just 18 percent of hospitals. We then determined the proportion of DRG 014 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 40 percent in 12 percent of the hospitals.

To identify hospitals with atypically high DRG 014 billing patterns, we selected hospitals with the following criteria: (1) DRG 014 discharges accounted for more than 4.5 percent of all discharges in 1996, **and** (2) the proportion of DRG 014 discharges to total discharges had increased by more than 40 percent between 1993 and 1996. We excluded hospitals with less than 75 DRG 014 discharges in 1996, hospitals currently under investigation by the OIG, and hospitals in the State of Maryland (Maryland hospitals are not currently reimbursed under the Prospective Payment System).

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 014 payment that was inappropriately billed and the payment for the DRG code that should have been billed. We compared the number of DRG 014 discharges for each of the hospitals identified against the national average of DRG 014 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.

FINDINGS

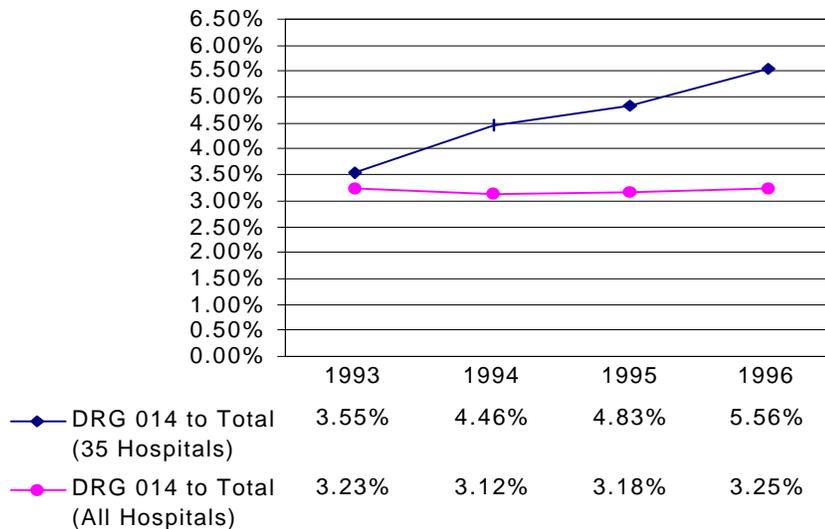
Thirty-five hospitals had atypically high Medicare billings for DRG 014

Compared to national figures, a relatively small number of hospitals had abnormally high discharges for patients with a specific cerebrovascular disorder. For 35 hospitals, total DRG 014 discharges increased 73 percent from 2,281 in 1993 to 3,941 in 1996. This represents an average increase of 20 percent a year. Nationally, DRG 014 discharges increased only 6 percent from 360,354 in 1993 to 382,130 in 1996.

Some of the 35 hospitals exhibited unusually high increases in DRG 014 discharges from 1993 to 1996. For instance, one hospital's DRG 014 discharges increased from 82 (out of 2,793 total discharges) in 1993 to 191 (out of 2,726 total discharges) in 1994 — a more than two-fold increase.

The 35 hospitals also had atypically high proportions of DRG 014 discharges to total discharges as compared to the national average. As illustrated in the chart below, for the 35 hospitals, the proportion of DRG 014 discharges to total discharges increased from 3.55 percent in 1993 to 5.56 percent in 1996. For all hospitals, this same proportion increased slightly from 3.23 percent in 1993 to 3.25 percent in 1996.

**Proportion of DRG 014 Discharges to Total Discharges
1993 to 1996**



Source: Medicare Provider Analysis and Review file

The 35 hospitals were located in 17 States and Puerto Rico. Fourteen of the hospitals were concentrated in just 2 States and Puerto Rico. Six of these hospitals were in California and four hospitals were in Puerto Rico and Texas. The remaining States had between one and two hospitals.

The questionable billing of DRG 014 could have a financial impact on the Medicare program

For the 35 hospitals, the number of discharges for patients with a specific cerebrovascular disorder diagnosis exceeded national norms by 1,403 cases. Using previous OIG validation efforts, we calculated a difference of \$1,716 between the DRG 014 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 \$2.4 million in 1996. This \$2.4 million represents 14 percent of the \$16.6 million paid to these hospitals for DRG 014 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

In several recent Office of Inspector General reports, we recommended that the Health Care Financing Administration (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 35 hospitals identified. Meanwhile, we have referred the 35 hospitals to our Office of Investigations. We look forward to continuing collaboration with HCFA on this matter.

Clinical Data Abstraction Centers' 1996 Validation Work for DRG 014

This table shows the results of the 1996 Clinical Data Abstraction Centers' validation effort for DRG 014 (Specific Cerebrovascular Disorders Except Transient Ischemic Attack). Column one contains the appropriate DRGs for the 24 upcoded DRG 014 discharges identified in the validation work.

| DRG Codes | DRG Weights | DRG Definitions ¹ | Number of Times DRG was Upcoded | Percent of Total Times DRGs were Upcoded |
|-----------|-------------|---|---------------------------------|--|
| 015 | 0.7227 | Transient Ischemic Attack & Precerebral Occlusions | 12 | 50% |
| 012 | 0.9891 | Degenerative Nervous System Disorders | 2 | 8% |
| 024 | 0.9908 | Seizure & Headache Age > 17 with Complications and Comorbidities | 2 | 8% |
| 029 | 0.6217 | Traumatic Stupor & Coma, Coma < 1 Hour Age > 17 without Complications and Comorbidities | 2 | 8% |
| 127 | 1.0302 | Heart Failure & Shock | 1 | 4% |
| 138 | 0.8049 | Cardiac Arrhythmia & Conduction Disorders with Complications and Comorbidities | 1 | 4% |
| 180 | 0.9240 | G.I. Obstruction with Complications and Comorbidities | 1 | 4% |
| 296 | 0.9166 | Nutritional and Miscellaneous Metabolic Disorders Age > 17 with Complications and Comorbidities | 1 | 4% |
| 321 | 0.6104 | Kidney & Urinary Tract Infections Age > 17 without Complications and Comorbidities | 1 | 4% |
| 463 | 0.7416 | Signs & Symptoms with Complications and Comorbidities | 1 | 4% |
| | | | 24 | 98% ² |

Source: Clinical Data Abstraction Centers' Data

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

Office of Inspector General's Validation Work for DRG 014

This table shows the results of the Office of Inspector General's (OIG) validation work for DRG 014 (Specific Cerebrovascular Disorders Except Transient Ischemic Attack). Column one contains the appropriate DRGs for the 12 upcoded DRG 014 discharges found in the validation work.

| DRG Codes | DRG Weights | DRG Definitions ¹ | Number of times DRG was Upcoded | Percent of Total Times DRGs were upcoded |
|-----------|-------------|---|---------------------------------|--|
| 015 | 0.7227 | Transient Ischemic Attack & Precerebral Occlusions | 6 | 50% |
| 024 | 0.9908 | Seizure & Headache Age > 17 with Complications and Comorbidities | 1 | 8% |
| 065 | 0.5162 | Dysequilibrium | 1 | 8% |
| 138 | 0.8049 | Cardiac Arrhythmia & Conduction Disorders with Complications and Comorbidities | 1 | 8% |
| 139 | 0.4945 | Cardiac Arrhythmia & Conduction Disorders without Complications and Comorbidities | 1 | 8% |
| 320 | 0.9320 | Kidney & Urinary Tract Infections Age > 17 with Complications and Comorbidities | 1 | 8% |
| 429 | 0.9537 | Organic Disturbances & Mental Retardation | 1 | 8% |
| | | | 12 | 98% ² |

Source: OIG, Office of Evaluation and Inspections Data

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