# Codes to Watch: Identifying the DRGs Most Prone to Payment Error



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*Monitoring error-prone DRGs is one good way to ensure coding accuracy. Data from the HPMP helps identify codes that bear watching.*

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Monitoring codes prone to payment error is an important part of an organization's ongoing efforts to verify coding accuracy. Data from the Hospital Payment Monitoring Program (HPMP) helps identify codes most prone to errors such as over- and undercoding. Organizations can use these data to strengthen their compliance programs.

## Collecting Random Samples from the States

The Centers for Medicare and Medicaid Services (CMS) has monitored Medicare inpatient payment error rates for inpatient prospective payment system (PPS) services since the Payment Error Prevention Program (PEPP) was initiated in the fall of 1999. In fall 2001 PEPP was renamed the Hospital Payment Monitoring Program. The purpose of the program remained the same: to measure, monitor, and reduce the incidence of improper payments for Medicare inpatient PPS-reimbursed services. Under this contract activity, quality improvement organizations (QIOs, formerly known as peer review organizations, or PROs) work with hospitals to identify and prevent payment errors. As a payment efficiency program, HPMP serves to protect the Medicare Trust Fund. The calculated payment error rates are also a crucial contributor to the annual fiscal statements for the agency.

To measure and monitor inpatient payment error rates, in 2001 CMS began randomly sampling final action reimbursed claims from each state, Puerto Rico, and the District of Columbia. The corresponding medical records are screened for medical necessity and validated for Diagnosis Related Group (DRG) coding errors by the clinical data abstraction centers. All records failing the screening are referred to the QIOs for full case review. An internal quality-control sample of 10 percent of records that did not fail screening is also sent for review, but error rates determined from the sample are not included in the calculated payment error rates.

In fiscal years 2000 and 2001 the sample included approximately 58,000 cases; in fiscal year 2002 the sample contained approximately 53,000 cases. Currently CMS is sampling 62 cases per state per month (except for Alaska, where 48 records are sampled monthly), an annual total of approximately 38,500 cases. At the time of this article, the latest data analyzed was from fiscal year 2002. Data for 2003 is now available for analysis, and data for 2004 is expected next year.

## How Payment Errors Are Calculated

Payment errors identified in the reviews are categorized into six types:

- DRG coding errors
- Admission denials (medical necessity and appropriateness of setting)
- Billing errors
- Technical denials (recoupment of hospital reimbursement for failure to submit a medical record or for submitting a medical record that lacks necessary documentation)
- Combined DRG coding errors and admission denials
- Maryland length-of-stay errors (Maryland is a non-PPS state, and providers in the state are not reimbursed by Medicare under a DRG system.)

Payment errors are measured by **dollars in error**, which are calculated by determining the difference between what the hospital was paid on the originally sampled claim and what the correct payment should have been. Thus, for unnecessary admissions the dollars in error are equal to the entire reimbursement for the claim and represent an overpayment. For DRG changes, the dollars in error are equal to the difference between what the hospital was paid and the correct DRG payment. This could result in an overpayment to the hospital (in cases of overcoding) or in an underpayment to the hospital (in cases of undercoding).

The **absolute value of dollars in error** represents the total dollars in error, regardless of whether the hospital was overpaid or underpaid. The **net dollars in error** represent the net amount of dollars in error, taking into account overpayments and underpayments.

Of the six error types, DRG coding errors have not comprised a large proportion of overalldollars in error. In fiscal year 2002 DRG errors comprised 2.9 percent of the net dollars in error and 30.1 percent of the absolute value of dollars in error nationwide (see "Payment Error Snapshot," below). However, the trend over fiscal years 2000, 2001, and 2002 indicates an increase in net dollars in error for DRG changes, while the absolute value of dollars in error decreased from fiscal years 2000 to 2001 and increased from 2001 to 2002.[1] What does this mean? In essence, the net dollars in error for the nation reflected more undercoding than overcoding in 2000, which remained true, though to a lesser extent, in 2001. However, in 2002 the statistics paint a different picture: hospitals were, overall, overcoding.

## Overcoding: Top DRGs for Net Dollars in Error

The top 10 DRGs for net dollars in error due to overcoding in fiscal year 2002 are shown in the table below. Note that in some cases the net amount is equal to the absolute value amount. This occurs when all cases for that particular DRG were overcoded. Where these values differ, it indicates that one or more claims for that DRG were undercoded.

Many of the DRGs in this figure are familiar in terms of payment errors. Several have been studied by the Office of the Inspector General.[2–5] Many QIOs also have conducted PEPP or HPMP projects related to these DRGs. For the most part, these are high-paying DRGs.

### Payment Error Snapshot

A national sample of DRG codes in fiscal year 2002 shows $4.8 million in overall error (absolute value of error). The positive net error amount of $330,110 indicates that more errors among the sample resulted from overpayments than underpayments.

| Error Type | Description | Claims | Net Error Amount | % of Total Payment* | % of Total Net Error Amount | Absolute Value of Error Amount† | % of Total Payment* | % of Total Absolute Value of Error Amount |
|---|---|---|---|---|---|---|---|---|
| 1 | DRG Change | 2,090 | $330,110 | 0.1% | 2.9% | $4,805,624 | 1.3% | 30.1% |
| 2, 5 | Admission Denials‡ | 2,293 | $8,806,431 | 2.3% | 76.7% | $8,806,431 | 2.3% | 55.2% |
| 3 | Billing Errors | 293 | $1,126,099 | 0.3% | 9.8% | $1,126,099 | 0.3% | 7.1% |
| 4 | Technical Denials | 132 | $1,057,941 | 0.3% | 9.2% | $1,057,941 | 0.3% | 6.6% |
| 6 | Maryland LOS Error | 136 | $166,134 | 0% | 1.4% | $166,134 | 0% | 1.0% |
| | Total | 4,944 | $11,486,715 | 3.1% | | $15,962,229 | 4.2% | |

* Total sample was 52,728 claims and total payment was $376,322,491.

† The absolute value of the error amount is the positive value of the error amount and is calculated claim by

claim.

‡ Error type 2 = admission/prohibited action denial and error type 5 = admission denial and DRG change.

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| Original DRG | Claims | Net Error Amount | Absolute Value of Error Amount |
|---|---|---|---|
| 468 Extensive OR procedure unrelated to principal diagnosis | 31 | $233,946 | $234,953 |
| 475 Respiratory system diagnosis with ventilator support | 10 | $127,912 | $127,912 |
| 415 OR procedure for infectious & parasitic diseases | 11 | $113,665 | $113,665 |
| 416 Septicemia age >17 | 32 | $103,342 | $107,333 |
| 014 Specific cerebrovascular disorders except TIA | 44 | $76,437 | $78,128 |
| 483 Tracheostomy except for face, mouth & neck diagnoses | 2 | $63,876 | $63,876 |
| 316 Renal failure | 34 | $62,192 | $82,743 |
| 514 Cardiac defibrillator implant w/ cardiac cath | 3 | $49,694 | $49,694 |
| 403 Lymphoma & non-acute leukemia w/ cc | 14 | $48,819 | $48,819 |
| 076 Other resp system OR procedures w/ cc | 6 | $39,876 | $39,876 |

## Undercoding: Top DRGs for Net Dollars in Error

Sorting DRG errors by net dollars in error selects the top DRGs that were undercoded. A few of these DRGs may also be familiar as payment errors, as some QIOs may have conducted PEPP projects related to undercoding. Note that the net error amounts are for the most part lower than the amounts for overcoding shown above.

| Original DRG | Claims | Net Error Amount | Absolute Value of Error Amount |
|---|---|---|---|
| 109 Coronary bypass w/o PTCA or cardiac cath | 7 | -$54,404 | $54,404 |
| 088 Chronic obstructive pulmonary disease | 36 | -$47,595 | $69,467 |
| 149 Major small & large bowel procedures w/o cc | 4 | -$42,666 | $42,666 |
| 090 Simple pneumonia & pleurisy age >17 w/o cc | 25 | -$39,515 | $40,856 |
| 143 Chest pain | 35 | -$35,119 | $35,404 |
| 175 GI hemorrhage w/o cc | 21 | -$32,885 | $32,885 |
| 320 Kidney & urinary tract infections age >17 w cc | 47 | -$31,885 | $54,660 |
| 094 Pneumothorax w/ cc | 3 | -$31,540 | $33,337 |

| | | | |
|---|---|---|---|
| 479 Other vascular procedures w/o cc | 10 | -$29,101 | $39,648 |
| 116 Other permanent cardiac pacemaker implant | 7 | -$28,337 | $66,610 |

## Top DRGs for Absolute Value of Dollars in Error

Ranking the results by absolute value of dollars in error provides another way to identify DRGs prone to payment errors. Seven of these DRGs make the top-10 overcoding or undercoding lists. Some, like DRG 079 (Respiratory infections and inflammations age >17 w/ cc), have a small net error amount but a large absolute value error amount. This indicates that both overcoding and undercoding occur, and hospitals are encouraged to focus on making sure the DRG is correct so that payment is correct.

| Original DRG | Claims | Net Error Amount | Absolute Value of Error Amount |
|---|---|---|---|
| 468 Extensive OR procedure unrelated to principal diagnosis | 31 | $233,946 | $234,953 |
| 475 Respiratory system diagnosis with ventilator support | 10 | $127,912 | $127,912 |
| 415 OR procedure for infectious & parasitic diseases | 11 | $113,665 | $113,665 |
| 416 Septicemia age >17 | 32 | $103,342 | $107,333 |
| 079 Respiratory infections & inflammations age >17 w/ cc | 23 | $1,670 | $106,752 |
| 089 Simple pneumonia & pleurisy age >17 w/ cc | 65 | -$5,643 | $97,432 |
| 144 Other circulatory system diagnoses w/ cc | 37 | $11,755 | $84,907 |
| 316 Renal failure | 34 | $62,192 | $82,743 |
| 014 Specific cerebrovascular disorders except TIA | 44 | $76,437 | $78,128 |
| 088 Chronic obstructive pulmonary disease | 36 | -$47,595 | $69,467 |

## Top DRGs for Frequency

DRGs associated with the highest dollars in error are not necessarily the errors that occur the most frequently. The top DRGs by volume of claims in error are identified below. Although the dollars associated with these errors may not be as great, they are worth watching simply due to their volume.

| Original DRG | Claims | Net Error Amount | Absolute Value of Error Amount |
|---|---|---|---|
| 089 Simple pneumonia & pleurisy age >17 w/ cc | 65 | -$5,643 | $97,432 |
| 296 Nutritional & misc. metabolic disorders age >17 w/ cc | 60 | -$10,396 | $61,184 |
| 182 Esophagitis, gastroent & misc digest disorders age >17 w/ cc | 53 | -$900 | $57,203 |
| 140 Angina pectoris | 52 | -$27,737 | $28,423 |
| 127 Heart failure & shock | 47 | -$5,142 | $65,597 |
| 320 Kidney & urinary tract infections age >17 w cc | 44 | -$31,885 | $54,660 |
| 014 Specific cerebrovascular disorders except TIA | 44 | $76,437 | $78,128 |
| 144 Other circulatory system diagnoses w/ cc | 37 | $11,755 | $84,907 |

| | | | |
|---|---|---|---|
| 088 Chronic obstructive pulmonary disease | 36 | -$47,595 | $69,467 |
| 143 Chest pain | 35 | -$35,119 | $35,404 |

## Top Change Pairs by Volume

Lastly, there are some DRGs that have a tendency to be changed to another DRG. These have been identified as "DRG change pairs," and the top 10 by volume of claims are listed here. Of the 10 pairs, only two (DRGs 014-015 and 089-088) are changes to lower-paying DRGs.

| Original DRG | Revised DRG | Claims | Net Error Amount | Absolute Value of Error Amount | Change |
|---|---|---|---|---|---|
| 140 Angina pectoris | 132 Atherosclerosis w/ cc | 39 | -$14,089 | $14,089 | Higher |
| 090 Simple pneumonia & pleurisy age >17 w/o cc | 089 Simple pneumonia & pleurisy age >17 w/ cc | 20 | -$32,254 | $32,254 | Higher |
| 175 GI hemorrhage w/o cc | 174 GI hemorrhage w/ cc 20 | 20 | -$32,242 | $32,242 | Higher |
| 014 Specific cerebrovascular disorders except TIA | 015 Transient ischemic attack & precerebral occlusions | 16 | $30,791 | $30,791 | Lower |
| 089 Simple pneumonia & pleurisy age >17 w/ cc | 079 Respiratory infections & inflammations age >17 w/ cc | 13 | -$38,862 | $38,862 | Higher |
| 183 Esophagitis, gastroent. & misc. digest disorders age >17 w/o cc | 182 Esophagitis, gastroent & misc. digest disorders age >17 w/ cc 12 | 12 | -$10,007 | $10,007 | Higher |
| 125 Circulatory disorders except AMI, w/ card cath. w/o complex diag. | 124 Circulatory disorders except AMI, w/ card cath & complex diag | 12 | -$16,936 | $16,936 | Higher |
| 089 Simple pneumonia & pleurisy age >17 w/ cc | 088 Chronic obstructive pulmonary disease | 11 | $6,561 | $6,561 | Lower |
| 143 Chest pain | 132 Atherosclerosis w/ cc | 11 | -$5,818 | $5,818 | Higher |
| 096 Bronchitis & asthma age >17 w/ cc | 088 Chronic obstructive pulmonary disease | 11 | -$4,989 | $4,989 | Higher |

## Monitoring Coding Accuracy

How can HIM coding professionals use this information? First, hospitals should ensure they have a strong coding compliance program.[6,7] HIM coding professionals should ensure that there is a process to randomly verify coding accuracy. They should also be aware of the error-prone DRGs identified in these tables. However, they should not limit their monitoring to these DRGs alone. HIM professionals are encouraged to review DRGs that are high in volume within their facility as well as others that have been associated with a high rate of payment errors or involve high reimbursement, such as DRG 475.

HIM professionals can also contact the HPMP department in their state's QIO. The QIO may be able to share data analysis related to DRG errors within the state and provide tools to assist hospitals with the identification and prevention of DRG errors. To locate state QIOs, visit the American Health Quality Association's Web site at www.ahqa.org and click on the "QIO Locator" link.

## Introducing the Next Scope of Work

QIOs will begin working on the 8th Scope of Work contract with CMS beginning August 1, 2005. The overall purpose of the HPMP—to measure, monitor, and reduce the incidence of improper fee-for-service inpatient payments—remains the same. However, the new contract does include minor changes for the program. First, all QIOs will be required to conduct a focused intervention that involves an area prone to payment errors in their state or in specific hospitals. (QIOs will have the option to prove that such an intervention isn't needed.) Second, long-term acute care hospitals (LTCHs) will become a focus for reducing Medicare payment errors. QIOs will be asked to monitor data for LTCHs in their state, and they may choose to conduct an HPMP project involving LTCHs.

Also continuing into the 8th Scope of Work contract is the Doctors' Office Quality-Information Technology (DOQ-IT) initiative, which began in 2004 as a pilot project and will be expanded nationally. DOQ-IT promotes the adoption of electronic health record systems and information technology in physician offices to enhance access to patient information, decision support, and reference data. The initiative is a significant addition to the QIOs' work, since adoption of standardized health IT in physician offices is seen as a vital step in establishing regional health data exchange networks.

[Editors' note: The 8th Scope of Work will be the subject of a feature story in the upcoming September issue of the Journal.]

## Notes


1. Centers for Medicare and Medicaid Services. "Fiscal Year 2002 Payment Error Cause Analysis." 2003. Unpublished data.
2. Office of the Inspector General, Office of Evaluations and Inspections. "DRG 79 Validation Study Update: Respiratory Infections and Inflammations." 1993. Available online at http://oig.hhs.gov/oei/reports/oei-12-89-00193.pdf.
3. Office of the Inspector General, Office of Evaluations and Inspections. "Medicare Payments for DRG 296: Nutritional and Miscellaneous Metabolic Disorders." 1999. Available online at http://oig.hhs.gov/oei/reports/oei-03-98-00490.pdf.
4. Office of the Inspector General, Office of Evaluations and Inspections. "Medicare Payments for Septicemia." 1999. Available online at http://oig.hhs.gov/oei/reports/oei-03-98-00370.pdf.
5. Office of the Inspector General, Office of Evaluations and Inspections. "Medicare Payments for DRG 475: Respiratory System Diagnosis with Ventilator Support." 1999. Available online at http://oig.hhs.gov/oei/reports/oei-03-98-00560.pdf.
6. Hanna, Joette. "Constructing a Coding Compliance Plan." *Journal of AHIMA* 73, no. 7 (2002): 48–56.
7. Office of the Inspector General. "The Office of Inspector General's Compliance Program Guidance for Hospitals." 1998. Available online at http://oig.hhs.gov/authorities/docs/cpghosp.pdf.


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