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WASHINGTON, D.C. 20548

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SEP 12 1985

September 12, 1985

C. McClain Haddow
Acting Administrator, Health Care
Financing Administration
Department of Health and Human Services

Dear Mr. Haddow:

Subject: Additional Changes to the Medicare Reimbursement Rates for Major Joint Procedures Are Needed (GAO/HRD-85-109)

In a June 10, 1985, Notice of Proposed Rulemaking, the Health Care Financing Administration (HCFA) recommended an increase in the Medicare payment rate for bilateral or multiple joint replacements currently included in Diagnosis Related Group (DRG) 209. We stated our tentative support for this increase in a letter to the former Administrator dated April 17, 1985, prior to completing our analysis of Medicare payment rates for major joint procedures. The proposed change was finalized in the September 3, 1985 regulation. The results of our completed work reinforce the need for this change to provide more equitable reimbursement to providers, reduce the risk to beneficiaries that results from multiple surgeries where one would be appropriate, and prevent an unnecessary rise in Medicare costs.

Our analysis also confirms the need for the other changes to the reimbursement rates for major joint procedures discussed in our April letter. Specifically,

--all procedures to correct problems or complications with joint replacements ("revisions") should be reimbursed under DRG 209, rather than under DRGs 209, 442, and 443 as is currently the case; and

--reimbursement for a certain joint repair procedure (femoral head replacement) currently included under DRG 209 should be included under DRGs 210 and 211 with other similar repair procedures.

These additional changes would be more consistent with the principles of the Medicare prospective payment system and would provide more equitable reimbursement to providers.

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We discussed our proposed changes with officials of the Prospective Payment Assessment Commission--an independent group established by Congress to make recommendations for adjusting the DRG reimbursement rates--and they supported these changes.

BACKGROUND

Medicare is a health insurance program which covers most Americans who are age 65 and over, and certain individuals under 65 who are disabled or have chronic kidney disease. The program is authorized under title XVIII of the Social Security Act and provides coverage under two parts. Part A, or the hospital insurance program, covers services of institutional providers of health care, primarily hospitals. Part B, or the supplementary medical insurance program, covers primarily physician services.

From its beginning on July 1, 1966, the Medicare program paid hospitals retrospectively for their reasonable costs of providing covered services to beneficiaries. However, concerned about growing health care costs, the Congress established a Medicare prospective payment system (PPS) for hospitals in the Social Security Amendments of 1983 (Public Law 98-21). In contrast to the cost reimbursement system that it replaced, PPS established predetermined payment rates for each of 468 diagnosis related groups. PPS covers hospital operating costs for routine, ancillary, and intensive care inpatient services.[1]

PPS payment rates are based on two key factors. The first is the HCFA-established weight for the diagnosis related group that the patient's case falls into.. Each of the 468 DRGs is a set of diagnoses that are expected to require the same level of hospital resources to treat the patient. Each DRG's weight represents the ratio of average costs to treat a patient falling in that DRG to the average cost of treating all Medicare patients. The second factor is the average cost of treating Medicare patients, and is referred to as the standardized

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[1]Capital costs, direct medical education costs, and outpatient costs continue to be paid on a reasonable cost basis. Also psychiatric, children's, rehabilitation, and long-term care hospitals or hospital units are exempted from PPS and continue to receive reasonable cost reimbursement.

amount.[2] The prospective payment rate for a DRG is computed by multiplying that DRG's weight by the standardized amount.

In fiscal year 1984, Medicare paid about $42 billion to approximately 6,700 hospitals. About 5,400 of these hospitals were paid under PPS.[3]

During that year, DRG 209, "Major Joint Procedures", was one of the most frequently occurring DRGs (14th out of 468). Hospitals were reimbursed about $925 million in Medicare payments for performing about 133,000 major joint procedures, including replacing joints such as the hip and knee, revising prior replacements, and repairing the hip by replacing the head of the femur.

OBJECTIVES, SCOPE AND METHODOLOGY

Our objective was to evaluate the appropriateness of PPS payments for major joint procedures in light of the resources used by providers, and the cost to the Medicare program. We obtained HCFA's 1984 inpatient hospital bill file and selected a 20 percent national sample of the cases involving DRGs associated with major joint replacements and related procedures (DRGs 209, 210, 211, 442 and 443). A total of 51,502 cases were included in the sample. We analyzed the sample to determine the resources used for the various procedures (hospital charges), and characteristics related to the major joint surgery (age of beneficiary, length of stay, and principal and other diagnosis).

We also visited six hospitals in Ohio and Michigan and reviewed medical records for the 237 cases in our sample from those hospitals. We reviewed the records (1) to test the reliability of HCFA's inpatient hospital bill file, (2) to supplement the information contained in the automated file, and (3) to evaluate the appropriateness of the DRG classification system for the various joint procedures. At the six hospitals visited, we also met with physicians and hospital administrators to discuss the PPS payment system for major joint procedures.

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[2]During the PPS phase-in period (fiscal years 1984-1986), payments to hospitals are comprised of two parts--the hospital specific portion and the federal portion. The hospital specific portion is based on the hospital's actual reasonable costs per Medicare discharge, generally during its fiscal year 1982 cost reporting period. The federal portion is based on the amount calculated using the PPS methodology. In fiscal year 1986, the federalportion will be 75 percent of the payment to the hospital, and in fiscal year 1987 and later it will be 100 percent.

[3]The remainder of the hospitals were exempt from PPS.

In addition we discussed the results of our review with officials from HCFA and the Prospective Payment Assessment Commission to obtain their views concerning our audit approach and findings.

Our work was conducted from September 1984 through June 1985, and was performed in accordance with generally accepted government auditing standards.

HIGHER RATE NEEDED TO REIMBURSE HOSPITALS FOR MULTIPLE REPLACEMENTS

Under DRG 209, hospitals were reimbursed the same amount for performing bilateral joint replacements (i.e. replacing both hips or knees during the same hospitalization) as for single joint replacements. Hospital administrators, physicians, and professional societies complained to HCFA that bilaterial or multiple replacements were more costly to perform, and that the payment rate under DRG 209 for these procedures was inadequate.

Based on a study of hip and knee replacements performed during the first 9 months of 1984, HCFA agreed that the rate was inadequate. In a Notice of Proposed Rulemaking dated June 10, 1985, HCFA proposed increasing the rate for multiple replacement to 1.7 times that for single replacements.

The results of our work support the need for a higher rate for multiple replacements. First, using hospital charges as an indicator,[4] it appears that multiple replacements require more hospital resources than single replacements. We analyzed HCFA's 1984 national inpatient hospital bill file and determined that the average charges for multiple and single replacements were $15,408 and $10,536, respectively.

In addition, there was a significant disparity between hospital charges for multiple replacements and the amount they were paid under DRG 209. For example, 12 multiple replacements in our sample were performed by Ohio hospitals. Charges for these procedures exceeded payments by an average of about $12,600. The following table illustrates these differences:

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[4]Payments under PPS are based on costs. To develop the difference between charges and payments, the cost-to-charge ratio for each hospital was used to convert charge data into cost data. Because these ratios are not available until after the close of each hospital's cost reporting year, we could not obtain all the necessary information to enable conversion. The national average cost-to-charge ratio HCFA uses with PPS is 72 percent--that is, on the average each $1 in charges would be converted to $.72 in costs.

A Comparison of Ohio Hospital Charges and Reimbursements for Bilateral Joint Replacements

Hospital	Total charge	Payment	Difference
A	$ 16,440	$ 5,901	($10,539)
B	18,683	8,532	(10,151)
B	19,925	8,532	(11,393)
C	13,868	8,003	(5,865)
D	27,236	9,629	(17,607)
D	23,659	9,629	(14,030)
E	22,111	8,130	(13,981)
F	29,073	8,302	(20,771)
G	21,703	9,745	(11,958)
G	12,963	9,745	(3,218)
G	34,050	9,745	(24,305)
G	17,063	9,745	(7,318)
TOTAL	$256,774	$105,638	($151,136)
AVERAGE	$ 21,398	$ 8,803	($ 12,595)

Overall, officials at five of the six hospitals we visited in Ohio and Michigan stated that payments for multiple replacements were inadequate. An official at the other hospital had no opinion.

The inequity in the payment rate for multiple replacements, if uncorrected, could have adversely affect beneficiaries and the Medicare program. Prior to PPS, multiple joint replacements were normally done at the same time under the same hospital admission. However, because the payment under DRG 209 was inadequate, some providers have notified HCFA that they began performing the joint replacements individually, during separate hospitalizations.

The American Academy of Orthopaedic Surgeons suggests that the practice of doing multiple replacements separately increases the health risk for certain beneficiaries. In an October 30, 1984, letter to HCFA, the Academy stated:

> "The safety and functional outcome of these patients might be seriously and adversely affected by staged procedures. For example, the patient with juvenile rheumatoid arthritis and ankylosing spondylitis in whom each anesthetic encounter is potentially life-threatening; the patient with hemophilia in whom extensive blood replacement therapy is necessary for each surgery; the patient with some polyarticular involvement in whom disability will be prolonged by staged procedures and in whom the ultimate functional motion of the prosthetic joint will be compromised by an interval between surgical procedures."

Performing multiple replacements under separate hospitalizations could also unnecessarily increase the costs of the Medicare program. Officials at one of the hospitals we visited told us that because of the large losses incurred, they have decided to discontinue performing multiple replacements during the same admission. Consistent with that decision, the hospital performed knee replacements on the same beneficiary 2 months apart. Medicare paid the hospital a total of $19,490 for the two procedures. This is double the amount the hospital would have received under the current DRG 209 rate ($9,745), and $2,923 more than HCFA's proposed rate ($16,567) for doing multiple replacements under the same hospitalization.

ALL REVISIONS SHOULD BE INCLUDED IN DRG 209

In addition to paying for joint replacements, the Medicare program also pays hospitals for correcting problems or complications with prior replacements. Most revision surgeries are paid for under DRG 209. However, about 18 percent of the revisions performed in 1984 were paid for at a lower rate under DRG 442 and DRG 443[5]. We believe that including revisions for major joint replacements under DRGs 442/3 is inconsistant with the underlying concepts of the DRG system, and provides inadequate reimbursement for this costly revision surgery.

When revision surgery is performed, the principal diagnosis determines whether the hospital will be paid under DRG 209 or DRGs 442/3. If the revision is required because of mechanical problems with the artificial joint (such as loosening), the hospital is paid under DRG 209. Revisions due to infections and other complications are included under DRGs 442/3.

Separating two similar diagnoses and procedures, relating to the same major joints, into two different DRGs seems inconsistent with the underlying concept of the DRG system. Clincal coherence is one of the essential characteristics of the DRG classification system and requires that each DRG relate to a common organ system. To insure that DRGs would be clinically coherent, principal diagnoses were generally divided into groups that corresponded to the major organ systems.

HCFA officials said that they were not aware that major joint revisions were included in DRGs 442/3 because they did not address revisions in their study of joint procedures. After discussing the issue, they stated that DRGs 442/3 were intended

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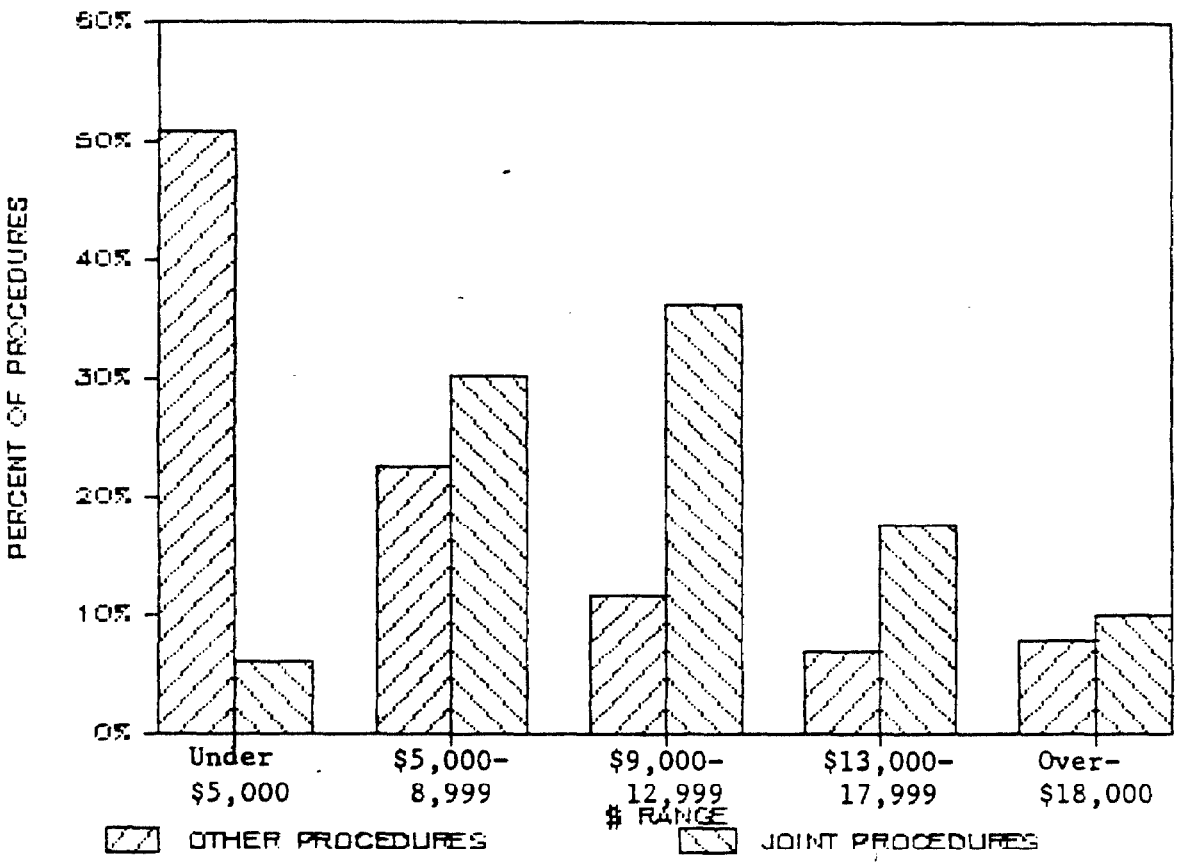
[5]DRG 442 and DRG 443 cover the same diagnoses, and are called "Other Procedures for Injuries". Age of the beneficiary is the primary distinguishing factor between the two DRGs--DRG 442 is for beneficiaries 70 years of age or older, while DRG 443 is for beneficiaries under 70 years old.

to be a "melting pot" of procedures, but including all revisions of prior joint replacements under DRG 209 would probably be more appropriate.

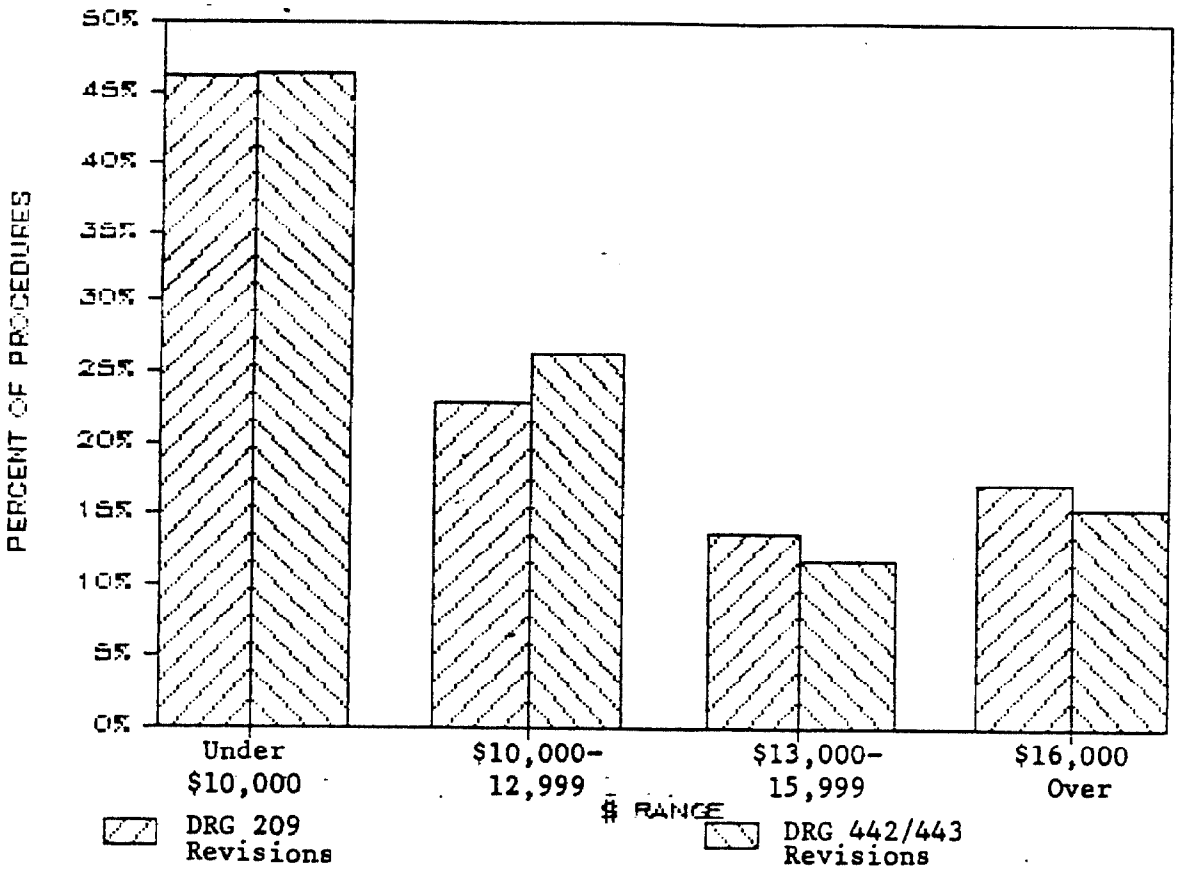
Including all major joint revisions under DRG 209 would be consistent with another criteria of the DRG system--that each DRG contain diagnoses that require about the same amount of resources to treat. The average charge for revisions currently done under DRGs 442/3 is $11,743, and is very close to the $11,845 average charge for revisions under DRG 209. The following graph illustrates this similarity.

COMPARISON OF CHARGES FOR REVISIONS
UNDER DRG 209 AND DRGs 442/3



Conversely, the resources required for revisions is dissimilar to the other procedures in DRGs 442/3. Revisions done under DRGs 442/3 had an average charge of $11,743, which is significantly higher than the $7,649 average charge for the other procedures in DRGs 442/3. As can be seen from the following graph, most revision charges were $9,000 or more, while most other procedures in DRGs 442/3 had charges less than $9,000.

CHARGES FOR DRGs 442/3 PROCEDURES



This situation creates two inequities. First, hospitals are underpaid for the revisions performed under DRGs 442/3. For example, there were nine revisions in our sample performed by hospitals in Michigan and Ohio. The average charge for these procedures was $12,413, while the average amount paid under DRGs 442/3 was $5,746. Secondly, including the higher costing revisions in DRGs 442/3 also helps raise the overall payment rate for these DRGs, thus perhaps overpaying hospitals for the numerous lower costing procedures included in DRGs 442/3.

Officials at all six hospitals we visited in Michigan and Ohio believed that all revisions should be paid under DRG 209. At four hospitals, officials pointed out that revisions are often complicated cases that cannot be treated by all hospitals. Thus, it is the tertiary care facilities--those equipped to treat the most seriously ill patients--that are affected most by the inequitable payment rate. In our 20 percent sample of 1984 Medicare discharges, about 2,100 hospitals received payments under DRGs 442/3, but only 313 hospitals provided revisions paid under DRGs 442/3.

ALL HIP REPAIR PROCEDURES SHOULD BE IN DRGs 210 AND 211

Fracture of the hip resulting from a fall is a common problem experienced by Medicare beneficiaries. Like revisions, the procedures to repair these fractures are currently included under three DRGs--209, 210, and 211[6]. Again, this situtation seems inconsistent with the intent of a meaningful DRG classification system and could result in overpayment for some of these repair procedures.

"Hip fractures" generally involve either (1) a fracture of the femur (thigh bone), or (2) a fracture of the femoral head, the "ball" at the upper end of the thigh bone that fits into the hip joint. Fractures of the femoral head are often repaired by replacing the natural ball with one that is man-made. This procedure is paid under DRG 209 (209-8161 and -8162). Fractures of the femur are often repaired by inserting a pin or other fixation device, and are paid at a lower rate under DRGs 210/11. This procedure (210/11-7935) accounted for 74 percent of all hip repair procedures paid for under DRGs 210/11 in 1984.

Officials at one of the six hospitals we visited said that the replacement of the femoral head was correctly classified under DRG 209 because it is a replacement procedure, which they believed was similar to other replacement procedures in DRG 209. However, officials at the other five hospitals visited stated that this procedure is a repair procedure. They said it should be included in DRGs 210/11 because it is similar in resource requirements and clinical perspective (such as principal diagnosis, age of the beneficiary) to the repair procedures included under those DRGs.

Our data supports the latter position. As illustrated in the graph below, the femur head replacements under DRG 209 are comparable in resource requirements to the femur fracture repairs under DRGs 210/11.

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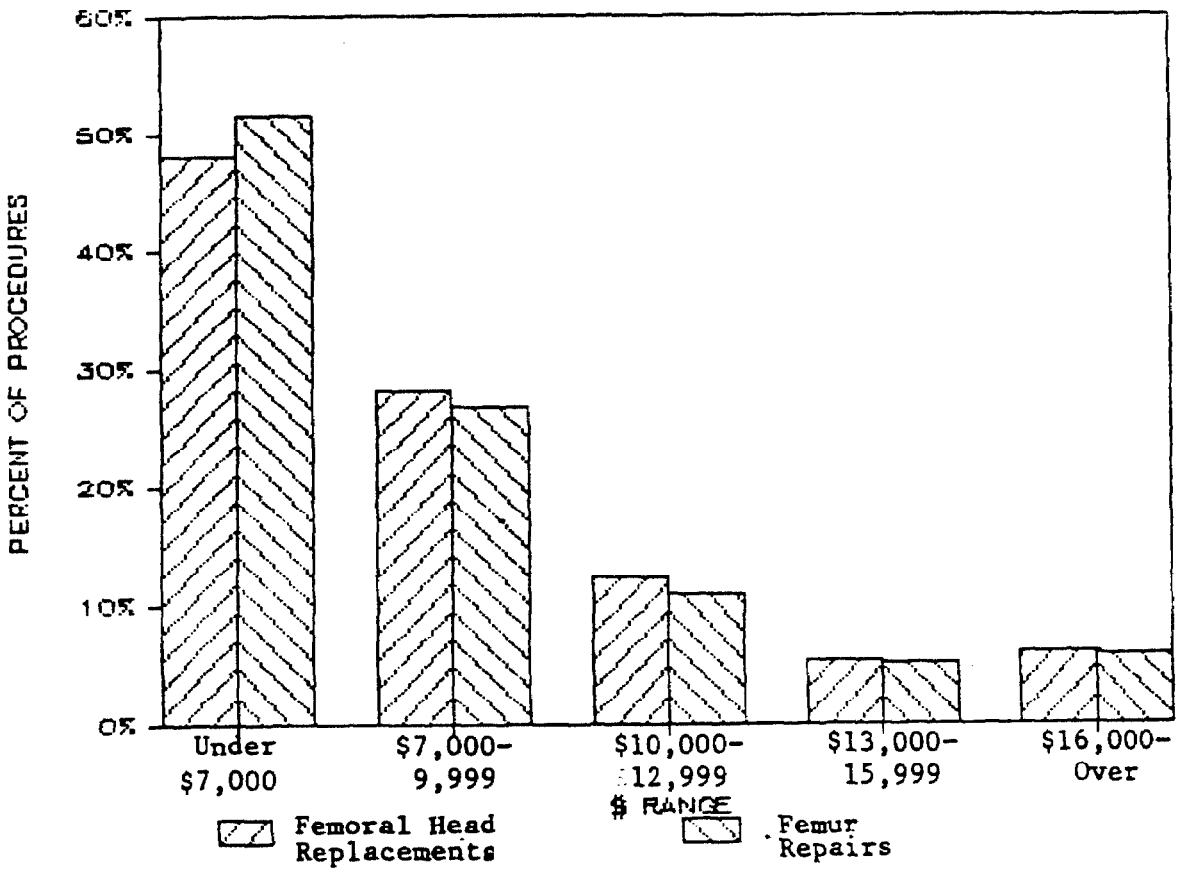
[6]DRGs 210 and 211 are called "Hip and Femur Procedures Except Major Joint", and cover the same diagnoses. The primary distinguishing factor is the age of the beneficiary--DRG 210 is for beneficiaries 70 years of age and older, while DRG 211 is for those under 70 years of age.

COMPARISON OF CHARGES FOR FEMORAL HEAD REPLACEMENTS UNDER DRG 209 AND FEMUR REPAIRS UNDER DRGs 210/11



In 1984, the average charge of the femur head replacement and femur fracture repair were $8,417 and $8,174 respectively. In contrast, the average charge for femur head replacements was about $2,100 less than that for the two other most common procedures under DRG 209, total hip and knee replacements. These procedures had average charges of about $10,500.

The 209-8161/2 femur head replacement is also comparable from a clinical perspective to the 210/11-7935 fracture repair procedure, and dissimilar to total hip and knee replacements under DRG 209. Both repair procedures, 209-8161/2 and 210/11-7935, are performed on older beneficiaries, are generally done to repair fractures, and are non-elective procedures.

In contrast, total hip and knee replacements are performed on somewhat younger beneficiaries, are often performed because of problems due to osteoarthrosis, and are generally performed at the beneficiaries' request (elective surgery).

The following table compares the relationship of the 209-8161/2 femur head procedure to the 210/211-7935 repair procedure, and to the total joint replacement procedures under DRG 209.

Relationships of Femur Head Procedures to Other Joint Procedures

	Femur head replacement (DRG 209)	Femur repair (DRGs 210/211)	Total hip and knee replacements (DRG 209)
Average charge	$8,417	$8,174	$10,536
Average age	81	82	75
Principal diagnosis	Fracture (72%)	Fracture (79%)	Osteoarthrosis (59%)

In summary, shifting femur head repairs from DRG 209 to DRGs 210/211 would combine major joint procedures that are alike in both resource usage and clinical perspective and would, therefore, better satisfy the requirements of the DRG system.

COMMENTS BY INTERESTED PARTIES

We discussed the results of our analyses with officials of HCFA's Bureau of Eligibility, Reimbursement and Coverage. They agreed that changes to the PPS payment rates for major joint procedures--in addition to that proposed for multiple replacements--are probably warranted.

We also discussed our proposed changes with officials of the Prospective Payment Assessment Commission. They supported these changes.

CONCLUSIONS

Currently, there are a number of inequities in the PPS payment rates for major joint procedures. HCFA's increase in the payment rate for multiple joint replacements will help alleviate the problem, but additional changes are needed.

Including "revisions" of prior joint replacements under DRGs 442/3 is inconsistent with the underlying concepts of the DRG system, and probably provides inadequate payment for this costly surgical procedure. The higher costing revisions currently included in DRGs 442/3 also help raise the overall Medicare payment rate for these DRGs, perhaps overpaying hospitals for numerous lower costing procedures in DRGs 442/3.

Paying hospitals for hip repair procedures under three DRGs also seems inconsistent with the intent of the DRG classification system. Shifting the procedure to repair the femoral head--currently included under DRG 209--to DRGs 210/11 with other hip repair procedures could correct this situation.

RECOMMENDATION

We recommend that you:

--Include all revisions of prior joint replacements under DRG 209.

--Include the repair of the femoral head in DRGs 210 and 211 with other similar hip repair procedures.

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We would appreciate hearing from you within 30 days on whatever action you take or plan concerning our recommendations.

Sincerely yours,

Thomas Dowdal

Thomas Dowdal
Group Director