

decision rule within the GROUPER by which these cases are assigned to a single DRG. The surgical hierarchy, an ordering of surgical classes from most resource-intensive to least resource-intensive, performs that function. Application of this hierarchy ensures that cases involving multiple surgical procedures are assigned to the DRG associated with the most resource-intensive surgical class.

Because the relative resource intensity of surgical classes can shift as a function of DRG reclassification and recalibrations, we reviewed the surgical hierarchy of each MDC, as we have for previous reclassifications and recalibrations, to determine if the ordering of classes coincides with the intensity of resource utilization.

A surgical class can be composed of one or more DRGs. For example, in MDC 11, the surgical class "kidney transplant" consists of a single DRG (DRG 302) and the class "kidney, ureter and major bladder procedures" consists of three DRGs (DRGs 303, 304, and 305). Consequently, in many cases, the surgical hierarchy has an impact on more than one DRG. The methodology for determining the most resource-intensive surgical class involves weighting the average resources for each DRG by frequency to determine the weighted average resources for each surgical class. For example, assume surgical class A includes DRGs 1 and 2 and surgical class B includes DRGs 3, 4, and 5. Assume also that the average charge of DRG 1 is higher than that of DRG 3, but the average charges of DRGs 4 and 5 are higher than the average charge of DRG 2. To determine whether surgical class A should be higher or lower than surgical class B in the surgical hierarchy, we would weight the average charge of each DRG in the class by frequency (that is, by the number of cases in the DRG) to determine average resource consumption for the surgical class. The surgical classes would then be ordered from the class with the highest average resource utilization to that with the lowest, with the exception of "other O.R. procedures" as discussed below.

This methodology may occasionally result in assignment of a case involving multiple procedures to the lower-weighted DRG (in the highest, most resource-intensive surgical class) of the available alternatives. However, given that the logic underlying the surgical hierarchy provides that the GROUPER search for the procedure in the most resource-intensive surgical class, this result is unavoidable.

We note that, notwithstanding the foregoing discussion, there are a few

instances when a surgical class with a lower average charge is ordered above a surgical class with a higher average charge. For example, the "other O.R. procedures" surgical class is uniformly ordered last in the surgical hierarchy of each MDC in which it occurs, regardless of the fact that the average charge for the DRG or DRGs in that surgical class may be higher than that for other surgical classes in the MDC. The "other O.R. procedures" class is a group of procedures that are only infrequently related to the diagnoses in the MDC but are still occasionally performed on patients in the MDC with these diagnoses. Therefore, assignment to these surgical classes should only occur if no other surgical class more closely related to the diagnoses in the MDC is appropriate.

A second example occurs when the difference between the average charges for two surgical classes is very small. We have found that small differences generally do not warrant reordering of the hierarchy because, as a result of reassigning cases on the basis of the hierarchy change, the average charges are likely to shift such that the higher-ordered surgical class has a lower average charge than the class ordered below it.

Based on the preliminary recalibration of the DRGs, in the May 19, 2003 proposed rule, we proposed modifications of the surgical hierarchy as set forth below.

We proposed to revise the surgical hierarchy for the pre-MDC DRGs, MDC 1 (Diseases and Disorders of the Nervous System), MDC 5 (Diseases and Disorders of the Circulatory System), MDC 8 (Diseases and Disorders of the Musculoskeletal System and Connective Tissue), and MDC 17 (Myeloproliferative Disease and Disorders, Poorly Differentiated Neoplasms for Lymphoma and Leukemia) as follows:

- In the pre-MDC DRGs, we proposed to reorder DRG 513 (Pancreas Transplant) above DRG 512 (Simultaneous Pancreas/Kidney Transplant).

- In MDC 1, we proposed to reorder DRG 3 (Craniotomy Age 0–17) above DRG 528 (Intracranial Vascular Procedures with Principal Diagnosis Hemorrhage); DRG 528 above DRGs 1 and 2 (Craniotomy Age >17 With and Without CC, respectively); DRGs 1 and 2 above DRGs 529 and 530 (Ventricular Shunt Procedures With and Without CC, respectively); DRGs 529 and 530 above DRGs 531 and 532 (Spinal Procedures With and Without CC, respectively); DRGs 531 and 532 above DRGs 533 and 534 (Extracranial Procedures With and

Without CC, respectively); and DRGs 533 and 534 above DRG 6 (Carpal Tunnel Release).

- In MDC 5, we proposed to reorder DRG 535 (Cardiac Defibrillator Implant With Cardiac Catheterization With AMI, Heart Failure, or Shock) above DRG 536 (Cardiac Defibrillator Implant With Cardiac Catheterization Without AMI, Heart Failure, or Shock), and DRG 536 above DRG 515 (Cardiac Defibrillator Implant Without Cardiac Catheterization).

- In MDC 8, we proposed to reorder DRGs 537 and 538 (Local Excision and Removal of Internal Fixation Devices Except Hip and Femur With and Without CC, respectively) above DRG 230 (Local Excision and Removal of Internal Fixation Devices of Hip and Femur).

- In MDC 17, we proposed to reorder DRGs 539 and 540 (Lymphoma and Leukemia With Major O.R. Procedure With and Without CC, respectively) above DRGs 401 and 402 (Lymphoma and Non-Acute Leukemia With Other O.R. Procedures With and Without CC, respectively).

In the proposed rule, we were unable to test the effects of the proposed revisions to the surgical hierarchy and reflect these changes in the proposed relative weights because the revised GROUPER software was unavailable at the time the proposed rule was published. Rather, we simulated most major classification changes to approximate the placement of cases under the proposed reclassification, and then determined the average charge for each DRG. These average charges served as our best estimate of relative resources used for each surgical class. We have now tested the proposed surgical hierarchy changes using the revised GROUPER software, and are reflecting the final changes in the DRG relative weights in this final rule. Further, as discussed in section II.C. of the preamble of this final rule, the final recalibrated weights are different from the proposed weights because they were based on more complete data.

Based on a test of the proposed revisions using the March 2003 update of the FY 2002 MedPAR file and the revised GROUPER software, we have found that the proposed change in the pre-MDC DRGs to reorder DRG 513 (Pancreas Transplant) above DRG 12 (Simultaneous Pancreas/Kidney Transplant) was not supported by the data. If this proposal were finalized, no cases would be assigned to DRG 512. The other proposed revisions are still supported by the data.

*Comment:* Two commenters expressed support for the proposed