User's Guide

PUB 4.4.2006

APS-DRGs®

All Payer Severity-adjusted DRGs (APS-DRGs®) Normalized Charge, LOS, and Mortality Weights Version 22

An ingenix Company

2321 Whitney Avenue • Hamden, CT 06518 • 1-800-829-1841

COPYRIGHT PAGE

Copyright © 2006 HSS Inc.
APS-DRGs® Normalized Weights
March 2005 Version 22

All rights reserved. Printed in the United States of America. No part of this publication may be reproduced or transmitted in any form or by any means electronic or mechanical, including photocopy, recording, or storage in a database or retrieval system, without prior permission of Ingenix. This publication is made available with the understanding that the publisher is not engaged in rendering legal or other services that require a professional license.

CPT® codes, descriptions, and other CPT® material only are copyright 2005 American Medical Association (AMA). All Rights Reserved. No fee schedules, basic units, relative values or related listings are included in CPT®. AMA does not directly or indirectly practice medicine or dispense medical services. AMA assumes no liability for data contained or not contained herein.

CPT® is a registered trademark of the American Medical Association.

Applicable FARS/DFARS Restrictions Apply to Government Use.

EASYGroup™ is a trademark of HSS, Inc.

HSS Inc. is an Ingenix company.

2321 Whitney Avenue
Hamden, CT 06518
www.hssweb.com

Table of Contents

1 Introduction

Weights for the APS-DRGs® provide a powerful tool to assess severity across and within diagnostic groups. Based on a nationally representative all-payer sample of hospital discharges, the charge, length of stay, and mortality benchmarks can be used to measure performance and to estimate costs.

THIS CHAPTER EXPLAINS:

- APS-DRGs® Overview
- About HSS

APS-DRGs® Overview

Charge, length of stay (LOS), and mortality weights for Version 22.0 All-Payer Severity-adjusted DRGs (APS-DRGs®) provide statistically valid, normative standards to help users identify differences in expected resource use and outcomes based on patients' clinical characteristics. Such weights also can be used to assess the performance of individual providers against national benchmarks. HSS, Inc. (HSS) has generated these weights from a large, nationally representative database containing more than 7.8 million discharges from nearly 1,000 hospitals in 35 states. The large size of the input database allows considerable precision in the estimation process.

The HSS estimation procedure closely parallels methods used by the federal Centers for Medicare & Medicaid Services (CMS) in developing weights for the Medicare Prospective Payment System (PPS). The process begins by adjusting charges reported on individual records for differences in labor costs across hospitals. It then systematically trims both charges and LOS, excluding observations with reported values outside predetermined levels. Means are recalculated and weights are derived by dividing these means by averages calculated across all inlier records. Results are inspected for logical consistency and reasonableness. When problems appear to exist because of small cell sizes, weights are imputed. Final weights are produced by normalizing weights so that their average across all records in the input database uniformly equals 1.000.

About HSS

HSS, an Ingenix company, develops solutions that streamline the coding, regulatory and reimbursement processes at provider and payer organizations. HSS' experience with providers and payers enables it to provide the tools and methodologies for organizations to evaluate financial and operational performance, target areas of performance improvement and balance risk-assumption with profit opportunities. These solutions combine technology with HSS' nationally recognized healthcare expertise. HSS solutions are used by more than 900 hospitals and 160 managed-care organizations. They are also embedded in health information management applications offered by more than 25 of the industry's major software vendors. For more information, visit www.hssweb.com.

Contacting HSS

Mailing Address:	HSS Client Services 2321 Whitney Avenue 4th Floor Hamden, CT. 06518
Phone Number:	(800) 999-DRGS (3747) (203) 407-3900
Fax Number:	(203) 407-3912
Web Address (URL):	www.hssweb.com

Email Client Services:	support@hss-info.com
Email Coding:	coding@hss-info.com
Email Sales:	sales@hss-info.com

Client Services

We welcome you as a valued client. HSS maintains an active Client Services department that provides expert guidance on coding and reimbursement issues affecting health claims payment. For general support issues, please contact HSS Client Services using one of the methods detailed below.

When opening a call with HSS Client Services, you will be issued a call ticket number. These ticket numbers correlate to individual issues, If you are experiencing multiple issues, it is recommended to obtain individual call ticket numbers.

When calling HSS Client Services regarding a previously opened call ticket, have your call ticket number available. If you misplaced or did not receive a call ticket number, please ask the technician to provide it to you.

HSS Client Services Phone: 800-999-DRGS (3747)

1. Places you into call queue. Call is taken in order received.
2. Calls are answered in the order that they are received. If there is a high call volume, calls are held in a queue until a technician becomes available.
3. Calls classified as an industry expert category (i.e., case and reimbursement, logic encoder, etc.) will be escalated to HSS experts.

HSS Voicemail: 800-999-DRGS (3747)

Press #, then 6 for Voicemail

1. Leave name and number and brief description of product issue.
2. Response time to voicemail is generally within a few business hours.
3. Service Technician has ability to do prior research before calling back.

HSS Email: support@hss-info.com

1. Include name and number and detailed description of product issue.
2. Response time to email is generally within a few business hours.
3. Service Technician has ability to do prior research before calling back.

2 Methods

THIS CHAPTER EXPLAINS:

- Data
- APS-DRGs® Weight Calculation
- Results
- Data Quality and APS-DRGs® Assignment

DATA

Data from the 2002 National Inpatient Sample (NIS) of the Healthcare Cost and Utilization Project were used to develop the weights. This data source was developed by the Agency for Healthcare Research and Quality using a stratified probability sample of hospitals from 35 states to create a nationally representative 20 percent sample of all U.S. community hospitals. Strata are by hospital size, location, ownership, and teaching status. Within each stratum, sampling probabilities are directly proportional to the number of hospitals located in the 35 participating states and inversely proportional to the total number of U.S. community hospitals.

The 2002 NIS contains information on all inpatient stays from 995 hospitals, a total of 7,853,982 records. These data were linked to appropriate wage indexes published by CMS. (The NIS contains identifiers to enable such linkages for hospitals in every state except Georgia, Hawaii, Kansas, Michigan, Nebraska, Ohio, South Carolina, South Dakota, Tennessee, and Texas, where confidentiality restrictions prohibit hospital identification. For these ten states, we used the overall, state average wage index for all NIS hospitals in each state.)

APS-DRGS® WEIGHT CALCULATION

The calculation of weights for the Version 22.0 APS-DRGs® is similar to the methodology used by CMS in developing the annual DRG relative weights. This involves several steps, as described below.

STEP 1. ASSIGN VERSION 22.0 APS-DRGS® TO THE DATA.

The 7.8+ million discharges described above were assigned to appropriate Version 22.0 APS-DRGs® using Healthcare AdVantage™. As appropriate, the ICD-9-CM diagnosis and procedure codes found in the NIS were mapped into Version 22.0 codes. An output file was then created containing linking variables, APS-DRGs®, APS-MDCs, and return codes. Finally, a series of summary statistics were calculated from the output files to assess data quality and other analytic issues.

STEP 2. CREATE HOSPITAL-LEVEL WAGE FILE AND MERGE TO PATIENT FILE.

The CMS Wage Index History File was linked to the 2002 NIS hospital weight file to obtain the associated wage index for each sample hospital. For states that prohibit hospital identification, state average wage indexes were assigned. For hospitals represented in the NIS but not on the History file (primarily specialty hospitals), indexes were assigned using the geographic information available on the NIS.

The hospital-level file was then merged to the patient-level file. Charges on the input were adjusted by dividing a portion of each hospital-specific charge by the wage index for the area in which the hospital was located. The CMS wage index reflects total hospital salaries and hours excluding the salaries and hours associated with skilled nursing facilities and other non-hospital cost centers, home office salaries and hours, and the fringe benefits associated with hospital and home office salaries. The portion of the charges adjusted by the CMS wage index was 71.10 percent (CMS's October 2002 estimate of the portion of the "hospital market basket" for labor-related items).

STEP 3. CALCULATE AND APPLY TRIMS.

Initial outlier trim points were calculated at 3.0 standard deviations from the overall arithmetic mean of the log-transformed LOS and charges. Using these trimmed data, a second set of trim points was calculated, again using 3.0 standard deviations from the arithmetic mean of the log-transformed data.

Trim points for the APS-DRGs® were then merged onto the patient file and used to identify outliers to be excluded from the remainder of the calculations. Note that outliers were determined variable by variable; for example, records containing charge outliers were not necessarily excluded from the calculations of LOS and mortality weights. Summary weights were re-estimated by APS-DRGs®, APS-MDC, and CDRG.

STEP 4. IDENTIFY AND ASSESS ATYPICAL PATTERNS THAT MIGHT AFFECT WEIGHTS.

As an additional quality-control measure, certain APS-DRGs® were identified and examined, especially when they involved atypical patterns of weights. The purpose of this step was to identify potential problems in the preceding data processing steps and to ensure that apparently unusual empirical results were based upon adequate data resources. The focus of this step included the following types of APS-DRGs®:

- APS-DRGs® with no observations.
- APS-DRGs® containing less than 50 observations.
- Weights for APS-DRGs® that were five times greater than the weight for the Consolidated DRG (CDRG).
- Weights for APS-DRGs® that were non-monotonic; that is, less than weights of less severe APS-DRGs® within the same CDRG.

STEP 5. PERFORM IMPUTATIONS.

The weights for all APS-DRGs® containing less than 25 observations were imputed by calculating a weighted average. Estimated weights from the national data were supplemented with additional information obtained from similar APS-DRGs®. More weight was given to the average LOS, charge, and mortality statistics for individual APS-DRGs® as the number of cases increased and as the variance of those statistics declined.

STEP 6. CALCULATE RELATIVE WEIGHTS.

The final, post-imputation estimated average LOS, charge, and mortality for individual APS-DRGs® was then divided by the overall LOS, charge, and mortality average to determine the relative weights. The latter was calculated by dividing the total days, charges, or deaths in the input database by the number of inlier records for that particular variable.

Normalized weights for the APS-DRGs® were standardized to ensure that the average weight calculated across all discharge records in the input database was 1.000 after adjustment. This was done by comparing the overall average charge, LOS, and mortality weights before and after the weights were adjusted.

RESULTS

The input data set contained a total of 7,853,982 records. Applying national sampling weights, these records represent almost 38 million discharges from community hospitals in the United States during 2002. After eliminating 2,354 records with a missing principal diagnosis, and 298 records with UB92 discharge status codes of 40 (Died at home), 41 (Died in a[nother] medical facility), or 42 (Died, place unknown), 7,851,330 records were available for developing weights.

DATA QUALITY AND APS-DRGS® ASSIGNMENT

Frequencies for the Version 22.0 APS-DRGs® were examined for variation and compared to results from previous years. Less than 0.06 percent of the records (n=4,653) were ungroupable (APS-DRG 4700), with the majority failing to group due to invalid principal diagnoses. Few records (n=32) were assigned to APS-DRG 4690, *Principal Diagnosis Invalid as Discharge Diagnosis.*

Low-volume APS-DRGs® were similar to previous years' results. Table 3-1 on page 9 lists the five (5) APS-DRGs® with no observations in the study data.

Table 3-2 on page 10 lists the 35 APS-DRGs® with fewer than 50 weighted cases nationally in 2002, based upon their observed frequency in the NIS. Note that many of these low-volume APS-DRGs® are elective procedures done in an ambulatory setting (for example, eye procedures, circumcision, and sterilization). Even when performed as an inpatient, few patients have Major CCs associated with them.

3 Final Weights

THIS CHAPTER EXPLAINS:

- APS-DRGs® Final Weights

APS-DRGs® FINAL WEIGHTS

Approximately 0.66 percent of the records exceeded the individual APS-DRGs® charge outlier thresholds, while 0.46 percent of records were identified as LOS outliers. After excluding these records, the imputation procedure described above was performed for APS-DRGs® with relatively low volume, and final weights were calculated. The final weights were compared to previous years, taking into account changes in the APS-DRGs® made in moving from Version 21 to Version 22. These CMS-originated changes include reclassifying existing codes into different DRGs and making the additional changes for FY 2005 detailed in Appendix B, HSS Industry Insight No. 310, Version 22.0 Update to the APS-DRGs®, November 2004.

In general,

- ***Charge weights*** ranged from 0.097 to 20.495 with a ***mean charge*** of $16,955.17.
- ***LOS weights*** ranged from 0.220 to 18.510 with a ***mean LOS*** of 4.5442 days.
- ***Mortality weights*** ranged from 0 to 39.409 with a ***mean mortality*** of 0.02239 deaths per discharge.

To calculate an ***expected charge*** (***expected LOS***, or ***expected mortality***) for a given discharge record, simply multiply the ***charge weight*** (***LOS weight***, or ***mortality weight***) obtained by applying APS-DRGs® to that record, by the ***mean charge*** (***mean LOS***, or ***mean mortality***) noted above.

The imputation procedure described above “adjusted the original estimated weights” for 62 APS-DRGs®. Many of these adjustments were relatively minor. At least 90 percent of the information was derived from the APS-DRGs® in the original study data for all three final weights in the three (3) APS-DRGs® shown in Table 3-3 on page 11. At the other extreme, none of the final weight was derived from the APS-DRGs® in the original study data for the five (5) APS-DRGs® shown in Table 3-1. The 40 APS-DRGs® shown in Table 3-4 on page 11 received less than half of their final weight from the APS-DRGs® original information for at least one weight. Table 3-5 on page 13 contains a list of the remaining 14 APS-DRGs® with adjusted final weights where at least half of the information comes from its own data for all three sets of weights and at least one weight uses less than 90 percent of the information.

APS-DRGs® are represented in the tables as five-digit numbers, consisting of two parts: a four-digit Consolidated DRG and a one-digit severity class number. The Consolidated DRG or CDRG is derived from the patient’s CMS DRG and the severity class is obtained by evaluating the patient’s secondary diagnoses. The APS-DRGs® group number may be represented by the syntax “XXXXY,” where “XXXX” is the CDRG and “Y” is the severity class.

Table 3-1: APS-DRGs® (N=5) With No Observations In Data Used To Estimate Weights

APS-DRGs®	DESCRIPTION
03302	URETHRAL STRICTURE AGE 0-17 W MCC
03511	STERILIZATION, MALE W CC

Table 3-1: APS-DRGs® (N=5) With No Observations In Data Used To Estimate Weights

APS-DRGs®	DESCRIPTION
05082	FULL BRN WO GR OR INHAL W SIG TR W MCC
05262	PERC CV PR W DRUG STENT W AMI W MCC
05272	PERC CV PR W DRUG STENT WO AMI W MCC

Table 3-2: APS-DRGs® (N=35) With Fewer Than 50 Observations in 2002 NIS

APS-DRGs®	DESCRIPTION
00062	CARPAL TUNNEL RELEASE W MCC
00381	PRIMARY IRIS PROCEDURES W CC
00382	PRIMARY IRIS PROCEDURES W MCC
00392	LENS PROCS WITH OR W/O VITRECTOMY W MCC
00412	EXTRAOCUL PROC EXC ORBIT AGE 0-17 W MCC
00592	TONSILLCT &/OR ADNDCT ONLY AGE>17 W MCC
02622	BRST BIOP& LOC EXCIS FOR NON-MAL W MCC
02672	PERIANAL & PILONIDAL PROCEDURES W MCC
02911	THYROGLOSSAL PROCEDURES W CC
02912	THYROGLOSSAL PROCEDURES W MCC
03142	URETHRAL PROCEDURES, AGE 0-17 W MCC
03272	KIDNY,URIN TRACT SIGN,SYMP 0-17 W MCC
03300	URETHRAL STRICTURE AGE 0-17 W/O CC
03301	URETHRAL STRICTURE AGE 0-17 W CC
03402	TESTES PROCEDURES AGE 0-17 W MCC
03422	CIRCUMCISION AGE >17 W MCC
03431	CIRCUMCISION AGE 0-17 W CC
03432	CIRCUMCISION AGE 0-17 W MCC
03510	STERILIZATION, MALE W/O CC
03512	STERILIZATION, MALE W MCC
03622	ENDOSCOPIC TUBAL INTERRUPTION W MCC
03822	FALSE LABOR W MCC
03932	SPLENECTOMY AGE 0-17 W MCC
04121	HISTORY OF MALIGNANCY W CC

Table 3-2: APS-DRGs® (N=35) With Fewer Than 50 Observations in 2002 NIS

APS-DRGs®	Description
04122	HISTORY OF MALIGNANCY W MCC
05062	FULL BRN W GR OR INHAL W SIG TR W MCC
05080	FULL BRN WO GR OR INHAL W SIG TR WO CC
05081	FULL BRN WO GR OR INHAL W SIG TR W CC
05100	NON-EXT BURNS W SIG TRAUMA WO CC
05101	NON-EXT BURNS W SIG TRAUMA W CC
05102	NON-EXT BURNS W SIG TRAUMA W MCC
05132	PANCREAS TRANSPLANT W MCC
05260	PERC CV PR W DRUG STENT W AMI WO CC
05261	PERC CV PR W DRUG STENT W AMI W CC
05271	PERC CV PR W DRUG STENT WO AMI W CC

Table 3-3: APS-DRGs® (N=3) Where APS-DRGs®-Level Data Contribute at Least 90 Percent of Their Information for All Three Final Weights

APS-DRGs®	Description
00402	EXTRAOCUL PROC EXC ORBIT AGE >17 W MCC
03621	ENDOSCOPIC TUBAL INTERRUPTION W CC
05270	PERC CV PR W DRUG STENT WO AMI WO CC

Table 3-4: APS-DRGs® (N=40) Where APS-DRGs®-Level Data Contribute Less Than 50 Percent of Their Information for At Least One Final Weight

APS-DRGs®	Description
00062	CARPAL TUNNEL RELEASE W MCC
00381	PRIMARY IRIS PROCEDURES W CC
00382	PRIMARY IRIS PROCEDURES W MCC
00392	LENS PROCS WITH OR W/O VITRECTOMY W MCC
00412	EXTRAOCUL PROC EXC ORBIT AGE 0-17 W MCC
00512	SALIVARY GLAND PROCEDURES W MCC
00592	TONSILLCT &/OR ADNDCT ONLY AGE>17 W MCC
01030	HEART TRANSPL OR IMPL HEART ASST W/O CC
02622	BRST BIOP& LOC EXCIS FOR NON-MAL W MCC

Table 3-4: APS-DRGs® (N=40) Where APS-DRGs®-Level Data Contribute Less Than 50 Percent of Their Information for At Least One Final Weight

APS-DRGs®	DESCRIPTION
02672	PERIANAL & PILONIDAL PROCEDURES W MCC
02822	TRAUMA SKN,SUBCUT TISS&BRST 0-17 W MCC
02911	THYROGLOSSAL PROCEDURES W CC
02912	THYROGLOSSAL PROCEDURES W MCC
03142	URETHRAL PROCEDURES, AGE 0-17 W MCC
03272	KIDNY,URIN TRACT SIGN,SYMP 0-17 W MCC
03300	URETHRAL STRICTURE AGE 0-17 W/O CC
03301	URETHRAL STRICTURE AGE 0-17 W CC
03402	TESTES PROCEDURES AGE 0-17 W MCC
03422	CIRCUMCISION AGE >17 W MCC
03431	CIRCUMCISION AGE 0-17 W CC
03432	CIRCUMCISION AGE 0-17 W MCC
03510	STERILIZATION, MALE W/O CC
03512	STERILIZATION, MALE W MCC
03622	ENDOSCOPIC TUBAL INTERRUPTION W MCC
03822	FALSE LABOR W MCC
03932	SPLENECTOMY AGE 0-17 W MCC
04121	HISTORY OF MALIGNANCY W CC
04122	HISTORY OF MALIGNANCY W MCC
05051	EXT,FULL BURN W MV 96+H WO SK GRFT W CC
05061	FULL BRN W GR OR INHAL W SIG TR W CC
05062	FULL BRN W GR OR INHAL W SIG TR W MCC
05080	FULL BRN WO GR OR INHAL W SIG TR WO CC
05081	FULL BRN WO GR OR INHAL W SIG TR W CC
05100	NON-EXT BURNS W SIG TRAUMA WO CC
05101	NON-EXT BURNS W SIG TRAUMA W CC
05102	NON-EXT BURNS W SIG TRAUMA W MCC
05250	OTHER HEART ASSIST SYSTEM IMPLANT WO CC
05260	PERC CV PR W DRUG STENT W AMI WO CC

Table 3-4: APS-DRGs® (N=40) Where APS-DRGs®-Level Data Contribute Less Than 50 Percent of Their Information for At Least One Final Weight

APS-DRGs®	DESCRIPTION
05261	PERC CV PR W DRUG STENT W AMI W CC
05271	PERC CV PR W DRUG STENT WO AMI W CC

Table 3-5: APS-DRGs® (N=14) Where APS-DRGs®-Level Data Contribute 50 Percent to 90 Percent of Their Final Weight

APS-DRGs®	DESCRIPTION
00482	OTHER DISORDERS OF EYE AGE 0-17 W MCC
00522	CLEFT LIP & PALATE REPAIR W MCC
00612	MYRINGOTMY W TUBE INSERT AGE >17 W MCC
02322	ARTHROSCOPY W MCC
02552	FX,SPR,STR,DSL UP EXT,AGE 0-17 W MCC
02612	BRST PR NON-MAL,EX BIOP&LOC EXCIS W MCC
03141	URETHRAL PROCEDURES, AGE 0-17 W CC
03621	ENDOSCOPIC TUBAL INTERRUPTION W CC
04312	CHILDHOOD MENTAL DISORDERS W MCC
04412	HAND PROCEDURES FOR INJURIES W MCC
04462	TRAUMATIC INJURY AGE 0-17 W MCC
04880	HIV W EXTENSIVE O.R. PROCEDURE W/O CC
05060	FULL BRN W GR OR INHAL W SIG TR WO CC
05132	PANCREAS TRANSPLANT W MCC

4 Distribution

THIS CHAPTER EXPLAINS:

- Distribution Overview
- Distribution File

DISTRIBUTION OVERVIEW

Weights and trims for the Version 22.0 APS-DRGs® are contained in a single ASCII disk file, as documented below.

Filename: HIPAAS22WTRIM.DAT

Description: APS-DRGs® Weight and Trims

Record Size: 110

Record Count: 1,136

DISTRIBUTION FILE

The format of this file is displayed in the table below.

Table 4-1: Description of Weight File

FIELD	FORMAT	POSITIONS	DESCRIPTION
APS	N(5)	1 - 5	APS-DRGs® Number
FILLER	C(1)	6 - 6	
DESCRIPTION	C(40)	7 - 46	APS-DRGs® Description
FILLER	C(1)	47 - 47	
LOSWT	N(3).N(5)	48 - 56	Length of Stay Weight (with explicit decimal)
FILLER	C(1)	57 - 57	
CHGWT	N(3).N(5)	58 - 66	Charge Weight (with explicit decimal)
FILLER	C(1)	67 - 67	
LLOSTRIM	N(4)	68 - 71	Low Length of Stay Trim
FILLER	C(1)	72 - 72	
HLOSTRIM	N(4)	73 - 76	High Length of Stay Trim
FILLER	C(1)	77 - 77	
LCHGTRIM	N(8).N(2)	78 - 88	Low Charge Trim
FILLER	C(1)	89 - 89	
HCHGTRIM	N(8).N(2)	90 - 100	High Charge Trim
FILLER	C(1)	101 - 101	
MORTWT	N(3).N(5)	102 - 110	Mortality Weight (with explicit decimal)

Appendix A: HSS Forms

This section provides forms that clients may fill out and return to HSS Client Services.

THIS APPENDIX INCLUDES:

- Organization Change of Information Form
- Product Manual Feedback Form

ORGANIZATION CHANGE OF INFORMATION FORM

Use the form below to provide the HSS Fulfillment Department with any changes that may apply to shipping or contact information.

CHANGE OF INFORMATION FORM				
Organization Name:				
Contact Name:	*Last*	*First*		*M.*
Title:				
Address:	*Street Address*			
	City		*State*	*ZIP Code*
Phone Number:	( )	Fax: ( )		
Web Address (URL):				
Email Address:				
HSS Contract Number:				
Interests (Yes or No):	*Electronic Updates?*	*Industry Insights?*		*Product Bulletins?*
Special Notes:	*(Please use this space to note what information has changed or any special notes that may be useful.)*			

After completing the form, mail or fax this to HSS, Inc. at:

Mailing Address: HSS Client Services
2321 Whitney Avenue, 4th Floor
Hamden, CT 06518

Fax Number: (203) 407-3912

PRODUCT MANUAL FEEDBACK FORM

Use the feedback form below to provide HSS with your feedback. Let us know your specific questions, problems or recommendations to help us continually improve our manuals.

Contact Information

Your Name:

Email Address:

Company/Organization:

Phone Number:

Manual Comments

Please take a moment to help us to improve the quality of our documents with your suggestions:

I rate this manual:	Excellent	Good	Fair	Poor
Accuracy (product works as manual says)	○	○	○	○
Completeness (enough information)	○	○	○	○
Clarity (easy to understand)	○	○	○	○
Organization (structure of subject matter)	○	○	○	○
Figures (useful)*	○	○	○	○
Examples (useful)*	○	○	○	○
Index (ability to find topic)*	○	○	○	○
Page Layout (easy to find information)	○	○	○	○

** May not apply to your specific manual.*

When accessing a PDF manual, would you prefer to get it from: ○ CD or ○ Website

Use the space provided on the following page to let us know:

- What I like best about the manuals (specify manual)?
- What I like least about the manuals (specify manual)?
- What I would like to see more of/less of?
- Any comments or concerns regarding a particular product manual?

Title of Manual:

Version Number:

Chapter/Section: **Page #:**

Comments:

After completing the form, mail or fax this to HSS, Inc. at:

Mailing Address:	HSS Client Services 2321 Whitney Avenue, 4th Floor Hamden, CT 06518
Fax Number:	(203) 407-3912

Appendix B: HSS Industry Insight

THIS APPENDIX INCLUDES:

- HSS Industry Insight No. 310 Version 22.0 Update to the APS-DRGS® November 2004

HSS INDUSTRY INSIGHT

Industry Insight No. 310 **November 2004**

VERSION 22.0 UPDATE TO THE APS-DRGS®

The APS-DRGs® have been updated to include all FY 2005 ICD-9-CM code additions and deletions. In addition, the APS-DRG® algorithm has been modified to incorporate Medicare FY 2005 (Version 22.0) DRG logic changes. Changes to the APS-DRGs® for Version 22.0 are summarized below.

ICD-9-CM CODE CHANGES

Version 22.0 of the APS-DRGs® has been updated to accommodate the following ICD-9-CM code changes.

- 171 diagnosis code additions
- 25 diagnosis code deletions
- 54 procedure code additions
- No procedure code deletions

Consolidated DRG (CDRG) assignments have been updated to reflect these code changes, as have the Major CC and CC lists and associated exclusion logic. For details on these ICD-9-CM code changes, see HSS *Industry Insight No. 297, Final ICD-9-CM Changes for FY 2005.*

CONSOLIDATED DRG (CDRG) LOGIC CHANGES

1. **MDC 1 – NERVOUS SYSTEM:** The following changes have been made to MDC 1.

   - ***CDRG 14 Re-titled**:* The title of CDRG 14 has been changed from "Intracranial Hemorrhage and Stroke With Infarction" to "Intracranial Hemorrhage or Cerebral Infarction". This change clarifies that a combination of conditions is not required for assignment to CDRG 14. There are no changes to the assignment logic for CDRG 14.

   - ***Use of Chemotherapy Wafers to Treat Brain Tumors**:* A new CDRG has been created for cases with implantation of GLIADEL® chemotherapy wafers to treat brain tumors. New CDRG 543 (Craniotomy with Implantation of Chemotherapeutic Agent or Acute Central Nervous System Principal Diagnosis) has been created from existing CDRG 1 (Craniotomy Age > 17) and will consist of patients with a craniotomy procedure and either:

     - ✓ Procedure code 00.10 (*implantation of chemotherapeutic agent*), or
     - ✓ A principal diagnosis of acute complex central nervous system disorder.

2. **MDC 5 – CIRCULATORY SYSTEM:** The following changes have been made to MDC 5.

   - ***Heart Assist Devices:*** Procedure code 37.66 (*insertion of implantable heart assist system*) has been moved from CDRG 525 (Heart Assist System Implant) to CDRG 103 (Heart Transplant). In response to this change, the title of CDRG 103 has been revised to "Heart Transplant or Implant of Heart Assist System" and the title of CDRG 525 has been changed to "Other Heart Assist System Implant". In addition, procedure code 37.62 (*insertion of*

Copyright © 2004. HSS, Inc. All Rights Reserved.

nonimplantable heart assist system) has been moved from CDRGs 104 and 105 (Cardiac Valve and Other Major Cardiothoracic Procedures With Cardiac Catheterization; Without Catheterization) to CDRG 525. Note that CDRG 103 is a "pre-MDC" DRG and assignment is based on procedure only. Assignment to CDRG 525 requires the presence of an MDC 5 principal diagnosis.

- ***Combination Cardiac Pacemaker Devices and Lead Codes:*** The following "pacemaker device and lead" procedure code combinations have been added to CDRG 115 (Permanent Cardiac Pacemaker Implant With Acute Myocardial Infarction, Heart Failure, or Shock or AICD Lead or Generator Procedures) and CDRG 116 (Other Permanent Cardiac Pacemaker Implant).

  - ✓ 00.53 *(implantation or replacement of cardiac resynchronization pacemaker, pulse generator only [CRT-P]) and 37.70 (initial insertion of pacemaker lead [electrode], not otherwise specified)*
  - ✓ 00.53 and 37.71 *(initial insertion of transvenous lead [electrode] into ventricle)*
  - ✓ 00.53 and 37.72 *(initial insertion of transvenous lead [electrode] into atrium and ventricle)*
  - ✓ 00.53 and 37.73 *(initial insertion of transvenous lead [electrode] into atrium)*
  - ✓ 00.53 and 37.74 *(initial insertion or replacement of epicardial lead [electrode] into epicardium)*
  - ✓ 00.53 and 37.76 *(replacement of transvenous atrial and/or ventricular lead(s) [electrode])*

3. **MDC 6 – DIGESTIVE SYSTEM:** Procedure codes 49.75 (*implantation or revision of artificial anal sphincter*) and 49.76 (*removal of artificial anal sphincter*) are currently assigned to one of four MDCs based on principal diagnosis. Within MDC 6, these procedures have been moved from CDRG 157 (Anal and Stomal Procedures) to CDRG 148 (Major Small and Large Bowel Procedures). Other MDC and DRG assignments for codes 49.75 and 49.76 (MDC 9, CDRG 267; MDC 21, CDRG 442; and MDC 24, CDRG 486) are not affected by this change.

4. **MDC 8 – MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE:** Procedure code 81.61 (*360 spinal fusion*) has been removed from CDRG 496 (Combined Anterior/Posterior Spinal Fusion) and assigned to CDRG 497 (Spinal Fusion Except Cervical).

5. **MDC 11 – KIDNEY AND URINARY TRACT:** The structure of CDRG 315 (Other Kidney and Urinary Tract O.R. Procedures) has been modified so that patients receiving infusions of islet cells without any other surgical intervention will be assigned to this CDRG. This modification recognizes the surgical aspects of islet cell transplantation in the absence of any other surgical procedure. The logic of CDRG 315 has been modified to include cases with a principal diagnosis of Type I diabetes mellitus with renal manifestations (codes 250.41 or 250.43) and one of the following non-OR procedure codes.

CODE	DESCRIPTION
52.84	Autotransplantation of cells of islets of Langerhans
52.85	Allotransplantation of cells of islets of Langerhans

6. **MDC 22 – BURNS:** Full thickness burn cases that also receive long term mechanical ventilation (procedure code 96.72, *continuous mechanical ventilation for 96+ hours*) have been moved from CDRGs 506 through 509 (Full Thickness Burns) to CDRGs 504 and 505 (Extensive 3rd Degree Burns). With this change, CDRGs 504 and 505 will contain:

Copyright © 2004. HSS, Inc. All Rights Reserved.

- ✓ All cases with a principal or secondary diagnosis of extensive third degree burns, whether or not the patient received 96+ hours of mechanical ventilation, as well as
- ✓ Cases with a principal or secondary diagnosis of full thickness burns that did receive 96+ hours of mechanical ventilation.

CDRGS 504 and 505 have been retitled as follows.

CDRG	PROPOSED TITLE
504	Extensive Burns or Full Thickness Burns With Mechanical Ventilation 96+ Hours With Skin Graft
505	Extensive Burns or Full Thickness Burns With Mechanical Ventilation 96+ Hours Without Skin Graft

7. PRE-MDC CHANGES: The following changes have been made to the pre-MDC DRGs.

- ***New Tracheostomy CDRGs:*** CDRG 483 (Tracheostomy With Mechanical Ventilation 96+ Hours or Principal Diagnosis Except Face, Mouth, and Neck Diagnoses) has been deleted and replaced by two new pre-MDC CDRGs. These new CDRGs are assigned based on the presence of a major O.R. procedure, in addition to a tracheostomy.

DRG	PROPOSED TITLE
541	Tracheostomy With Mechanical Ventilation 96+ Hours or Principal Diagnoses Except Face, Mouth and Neck Diagnoses With Major O.R. Procedure
542	Tracheostomy With Mechanical Ventilation 96+ Hours or Principal Diagnoses Except Face, Mouth and Neck Diagnoses Without Major O.R. Procedure

  For CDRGs 541 and 542, a major O.R. procedure is defined as any procedure that would be assigned to CDRG 468 (Extensive O.R. Procedure Unrelated to Principal Diagnosis), except for tracheostomy codes 31.21 and 31.29.

- ***Intestinal Transplants:*** CMS is removing procedure code 46.97 (*transplant of intestine*) from CDRG 148 (Major Small and Large Bowel Procedures) in MDC 6 (Digestive System) and assigning this procedure to CDRG 480 in the pre-MDC hierarchy. The title of CDRG 480 has been changed from "Liver Transplant" to "Liver Transplant and/or Intestinal Transplant".

8. SURGICAL HIERARCHY REVISIONS: The following surgical hierarchies have been revised.

- ***Pre-MDC Hierarchy:*** New CDRGs 541 and 542 (Tracheostomy With Mechanical Ventilation 96+ Hours or Principal Diagnosis Except Face, Mouth, and Neck Diagnoses With Major O.R. Procedure; Without Major O.R. Procedure) have been ordered above CDRG 480 (Liver Transplant).

- ***MDC 1 (Nervous System):*** New CDRG 543 (Craniotomy with Implantation of Chemotherapeutic Agent or Acute Complex Central Nervous System Principal Diagnosis) has been ordered above CDRG 1 (Craniotomy Age > 17).

- ***MDC 8 (Musculoskeletal System and Connective Tissue):*** CDRG 496 (Combined Anterior/Posterior Spinal Fusion) and CDRG 497 (Spinal Fusion Except Cervical) have been ordered above CDRG 471 (Bilateral or Multiple Major Joint Procedures of the Lower Extremity); CDRG 519 (Cervical Spinal Fusion) above CDRG 216 (Biopsies of Musculoskeletal System and Connective Tissue); CDRG 213 (Amputation for the Musculoskeletal System and Connective Tissue Disorders) above DRGs 210 and 212 (Hip

Copyright © 2004. HSS, Inc. All Rights Reserved.

and Femur Procedures Except Major Joint); and, CDRG 499 (Back and Neck Procedures Except Spinal Fusion) above CDRGs 218 and 220 (Lower Extremity and Humerus Procedures Except Hip, Foot, and Femur).

9. **REVIEW OF PROCEDURE CODES ASSIGNED TO CDRGS 468, 476 AND 477 – O.R. PROCEDURES UNRELATED TO THE PRINCIPAL DIAGNOSIS:** The cases assigned to CDRG 468 (Extensive O.R. Procedure Unrelated to Principal Diagnosis), CDRG 476 (Prostatic O.R. Procedure Unrelated to Principal Diagnosis), and CDRG 477 (Non-Extensive O.R. Procedure Unrelated to Principal Diagnosis) have been removed and the following changes have been made.

   - ***Reassignment of Procedures Among CDRGs 468, 476 and 477:*** Procedure code 51.23 (*laparoscopic cholecystectomy*) has been moved from CDRG 468 to CDRG 477.

   - ***DRG 477 (Nonextensive OR Procedures Unrelated to Principal Diagnosis):*** No procedures have been moved from CDRG 477 to one of the MDC-specific surgical DRGs (i.e., surgical CDRGs for the MDC in which the principal diagnosis is assigned). Several new laparoscopic procedures (44.67, 44.68 and 44.95 – 44.98), however, are now eligible for assignment to CDRG 477 when the procedure is unrelated to the principal diagnosis.

   - ***CDRG 468 (Extensive OR Procedures Unrelated to Principal Diagnosis):*** No procedure codes have been moved from CDRG 468 to one of the MDC-specific surgical DRGs.

REFINEMENTS TO THE COMPLICATIONS AND COMORBIDITIES (CC) AND NEONATAL PROBLEM LISTS

1. **MAJOR CC AND CC CODE ADDITIONS AND DELETIONS:** The following diagnosis codes have been added to or deleted from the list of diagnoses considered to be Major CCs or CCs.

CODE	ACTION	DESCRIPTION	STATUS
07070	Add	VRL HEP C W/O HEP COMA	CC
07071	Add	VIRAL HEP C WITH COMA	MCC
45340	Add	VENOUS THROMBOSIS NOS	CC
45341	Add	VENOUS THROMBOSIS DEEP V	CC
45342	Add	VENOUS THROMBOSIS DEEP V	CC
49122	Add	OBST CHR BRONCH W/ACUTE	CC
53086	Add	INFECT ESOPHAGOSTOMY	CC
53087	Add	MECH COMPL ESOPHAGOSTOMY	CC
7070	Delete	DECUBITUS ULCER	MCC
70700	Add	DECUBITUS ULCER NOS	MCC
70701	Add	DECUBITUS ULCER ELBOW	MCC
70702	Add	DECUBITUS ULCER UP BACK	MCC
70703	Add	DECUBITUS ULCER LOW BACK	MCC
70704	Add	DECUBITUS ULCER HIP	MCC
70705	Add	DECUBITUS ULCER BUTTOCK	MCC
70706	Add	DECUBITUS ULCER ANKLE	MCC
70707	Add	DECUBITUS ULCER HEEL	MCC
70709	Add	OTHER DECUBITUS ULCER	MCC
V461	Delete	DEPENDENCE ON RESPIRATOR	MCC
V4611	Add	RESPIRATOR DEPEND STAT	MCC
V4612	Add	RESPIRATOR DEP ENCOUNTER	MCC
V4983	Add	AWAIT ORG TRANS STATUS	CC

Copyright © 2004. HSS, Inc. All Rights Reserved.

2. ADDITIONS AND DELETIONS TO THE NEONATAL PROBLEM LISTS: The following codes have been added to or deleted from the list of diagnoses considered to be major and moderate neonatal problems.

CODE	ACTION	DESCRIPTION	PROBLEM
07070	Add	VRL HEP C W/O HEP COMA	Major
07071	Add	VIRAL HEP C WITH COMA	Major
45340	Add	VENOUS THROMBOSIS NOS	Major
45341	Add	VENOUS THROMBOSIS DEEP V	Major
45342	Add	VENOUS THROMBOSIS DEEP V	Major
5248	Delete	DENTOFACIAL ANOMALY NEC	Major
52481	Add	ANTER SOFT TISS IMPINGEM	Major
52482	Add	POSTE SOFT TISS IMPINGEM	Major
52489	Add	DENTOFACIAL ANOM NEC	Major
5888	Delete	IMPAIRED RENAL FUNCT NEC	Major
58881	Add	SEC HYPERPARATHYROID NOS	Major
58889	Add	OTH IMP RENAL FUNCTN DIS	Major
7583	Delete	AUTOSOMAL DELETION SYND	Major
75831	Add	CRI-DU-CHAT SYNDROME	Major
75832	Add	VELO-CADRIO-FAC SYNDROME	Major
75833	Add	OTHER MICRODELETIONS	Major
75839	Add	OTHER AUTOSOMAL DELETN	Major

FOR FURTHER INFORMATION

If you have questions about the APS-DRGs® or the Version 22.0 update, please contact our Client Services Department at 1-800-999-DRGS (3747) or via the Internet at *support@hss-info.com*. Be sure to check the HSS website (***www.hssweb.com***) for up-to-date information on ICD-9-CM coding changes and other casemix classification changes.

Copyright © 2004. HSS, Inc. All Rights Reserved.

Appendix C: Release Notes

THIS APPENDIX INCLUDES:

- March 2005 (Version 0503H)

March 2005 (Version 0503H)

PUB 4.4.2006

About this Release

Charge, length of stay (LOS), and mortality weights and trims have been updated for the Version 22.0 All-Payer Severity-adjusted DRGs (APS-DRGs®). A synopsis of changes can be found in HSS Industry Insight No. 310, Version 22.0 Update to the APS-DRGs®, which is included in this manual in Appendix B.

Product Version Number

Version numbers on the software and on the ***User Installation Guide*** have changed to V0503H.

HSS Client Services

If you have questions regarding the All Payer Severity-adjusted DRGs (APS-DRGs®) updates described above, please contact our Client Services Department at 1-800-999-DRGS (3747) or e-mail support@hss-info.com.

For More Information

For further information on this update refer to the HSS web site (www.hssweb.com). ***Hssweb*** is updated on a regular basis with new and timely ***Industry Insights***, as well as access to source documents and other relevant documentation.