

**Program Documentation for DLL Version 2.70 for the CMG
Classification System Version 2.70**
Centers for Medicare & Medicaid Services
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This documentation is for a revised version of the CMG dynamic-link library (DLL) for use in classifying patients in Inpatient Rehabilitation Facilities (IRFs). This revision represents version 2.70 of the DLL. This revised DLL applies to version 2.70 of the CMG classification system.

This documentation and the CMG DLL are published by the Centers for Medicare & Medicaid services (CMS). The documentation and DLL may be copied freely, as our goal is broad dissemination to facilitate accurate classification of Inpatient Rehabilitation Facility (IRF) patients with the Case Mix Group (CMG) classification system.

Changes with DLL Version 2.70. The prior DLL Version was 2.60. The only changes made with DLL Version 2.70 (from Version 2.60) involve the use of 15 new comorbidity codes (new items are 24K through 24Y) in determining the comorbidity tier.

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Introduction

This document explains how the CMG DLL calculates CMG group codes. The methodology employed by the DLL follows the methodology described in the IRF regulations published by CMS. This document is aimed primarily at software developers who do not wish to use the DLL furnished by CMS and who need to develop their own software to calculate CMG groups.

Programmers who **do** wish to use CMS's DLL should refer to the technical documentation which accompanies this package. Familiarity with the program documentation contained in the present document is **not** required to use the DLL correctly.

Overview

Calculation of a CMG group from an IRF-PAI assessment record requires the following steps:

1. Read required fields from the IRF-PAI record.
2. Check for data errors.
3. Calculate preliminary variables.
4. If no data errors are found, compute the CMG group code.
5. Return the results: the CMG group code and an error code.

Each of these steps is detailed below.

Read Required Fields

Only a subset of the fields contained in the IRF-PAI assessment record is required to perform the CMG group calculation. Appendix A lists the required fields. This appendix is derived from, and uses the conventions used in, the IRF-PAI data specifications. Please refer to the data specifications for details.

Appendix A contains the following columns:

- **Database name.** The field name used in CMS' standard data specifications.
- **Form location.** The item number used on the IRF-PAI assessment form.
- **Description.** A description of the field.
- **Length.** The length of the field.
- **Start byte.** The starting position of the field on the standard submission record.
- **End byte.** The ending position of the field on the standard submission record.
- **Range.** A range or list of valid values.

The first step for a calculation routine will be to read or obtain the values of the variables listed in Appendix A.

Check for Data Errors

The next step for a calculation routine will be to check the values of all of the variables listed in Appendix A to make sure they are valid. If any data errors are detected, the CMG group must not be calculated (an error code should be set appropriately). To test for data errors, do the following:

1. Check to make sure that each variable conforms to the range specifications contained in the last column of Appendix A. The first two variables in Appendix A (ASMT_SYS_CD and TRANS_TYPE_CD) are not actually involved in the CMG calculations. However, the DLL and standard CMG logic check these items and return error codes if the items do not have the expected values. ASMT_SYS_CD should be a value of "IRF-PAI" indicating an IRF-PAI record and TRANS_TYPE_CD should be a value of "1" (assessment record) or "2" (modified assessment record) but not "3" (record deletion request).
2. Check to make sure that the ICD9 comorbidity fields (items 24A through 24Y) have a valid format. To be valid, the field must be blank (discharge date before 10/1/2014), be a caret [^] (for discharge date on or after 10/1/2014), or it must be in an 8 character fixed format string as follows:
 - a. Character 1 must be a space.
 - b. Character 2 must be "E" or space.
 - c. If character 2 is a space, then character 3 can be either "V" or "0" through "9". If character 2 is "E", then character 3 must be 0 through "9".
 - d. Characters 4 and 5 must be numeric ("0" through "9").
 - e. Character 6 must be a decimal point.
 - f. Characters 7 and 8 must be numeric ("0" through "9") or a space.
 - g. If character 7 is a space, then character 8 must be a space.

Calculate Preliminary Variables

Several preliminary variables must be calculated before determining the CMG group. If any of these preliminary calculations result in invalid values, the CMG group must not be calculated – an error code should be set appropriately instead. The following sections describe the preliminary calculations.

Motor Score

To compute the motor score, do the following:

1. The motor score is based upon the following 12 variables:

| Variable Name | Item | Recode Zero To: | Weight |
|------------------------|------|-----------------|--------|
| EATG_ADMSN_CD | 39AA | 1 | 0.6 |
| GRMG_ADMSN_CD | 39BA | 1 | 0.2 |
| BATHG_ADMSN_CD | 39CA | 1 | 0.9 |
| DRSG_UPR_ADMSN_CD | 39DA | 1 | 0.2 |
| DRSG_LWR_ADMSN_CD | 39EA | 1 | 1.4 |
| TOILTG_ADMSN_CD | 39FA | 1 | 1.2 |
| SPHNCTR_BLADR_ADMSN_CD | 39GA | 1 | 0.5 |
| SPHNCTR_BWL_ADMSN_CD | 39HA | 1 | 0.2 |
| BED_CHR_WC_ADMSN_CD | 39IA | 1 | 2.2 |
| TOILT_ADMSN_CD | 39JA | 2 | 1.4 |
| WLK_WC_ADMSN_CD | 39LA | 1 | 1.6 |
| STR_ADMSN_CD | 39MA | 1 | 1.6 |

2. **If the input value of any of these 12 variables is equal to zero**, then recode the zero to the value shown in the third column of the table above (note that all variables are recoded to 1 except for Item 39Ja which is recoded to 2).
3. Multiply each input value (recoded as described in Step 2) by the weight shown in the fourth column of the table above.
4. The motor score is the sum of the recoded, weighted values of the 12 variables.

If any of the 12 variables has an out of range value, then the motor score is invalid and the CMG group must not be computed. A valid motor score will be in the range 12 through 84, inclusive.

Cognitive Score

To compute the cognitive score, do the following:

1. The cognitive score is based upon the following 5 variables:
 - a. CMPRHNSN_ADMSN_CD (item 39NA)
 - b. EXPRSN_ADMSN_CD (item 39OA)

- c. SCL_INTRCTN_ADMSN_CD (item 39PA)
 - d. PRBLM_SLVG_ADMSN_CD (item 39QA)
 - e. MEMRY_ADMSN_CD (item 39RA)
2. For each of these 5 variables, recode the value to 1 if the input value is equal to zero.
3. The cognitive score is the sum of the values of the 5 variables as recoded in the previous step.

If any of the 5 variables has an out of range value, then the cognitive score is invalid and CMG group must not be computed. A valid cognitive score will be in the range 5 through 35, inclusive.

Age

Age is computed on the basis of the difference between the admission date (ADMSN_DT, item 12) and the birth date (BIRTH_DT, item 6). The IRF-PAI data specifications allow facilities to submit partial birth dates if the month or day of birth is unknown. The steps below describe how to handle partial birth dates and how to calculate age.

1. Impute month and/or day of birth if partial birth date is present.
 - a. If month of birth is blank:
 - i. Partial birth date is present.
 - ii. Replace blank month with "06" (June).
 - b. If day of birth is blank:
 - i. Partial birth date is present.
 - ii. Replace blank day with "15".
 - c. If a partial birth date was submitted and if the birth year is equal to the admission year, then age cannot be calculated.
2. If a partial birth date is present, then use the imputed birth date, as described above, in the steps below. Otherwise, use the input birth date.
3. Check the birth date to determine whether it is a valid date. If it is invalid, then age cannot be calculated.
4. Check the admission date to determine whether it is a valid date. If it is invalid, then age cannot be calculated.
5. If the admission date precedes the birth date, then age cannot be calculated.
6. Calculate age in years by comparing the birth date with the admission date. Use the following rules:
 - a. If the admission month is less than the birth month, then age is equal to the difference in years, minus 1.
 - b. If the admission month is greater than the birth month, then age is equal to the difference in years.
 - c. If the admission month is equal to the birth month, then examine the birth and admission days:
 - i. If the admission day is less than the birthday, then age is equal to the difference in years, minus 1.

- ii. Otherwise, age is equal to the difference in years.
7. If the computed age is greater than 140, then age is invalid and the CMG group cannot be computed.

If age cannot be computed, then the CMG group cannot be computed. A valid age will be in the range 0 through 140, inclusive.

Look Up RIC code

The impairment group code at admission, IMPRMNT_GRP_ADMSN_CD (item 21A), is matched with an impairment group code in Appendix B to obtain the RIC code from Appendix B. The IMPRMNT_GRP_ADMSN_CD value submitted always has 2 leading zeros (0) at the front. These two initial zeros are not present in the impairment group codes in Appendix B. Trim the two leading zeros from IMPRMNT_GRP_ADMSN_CD before matching with the impairment group values in Appendix B. If the trimmed IMPRMNT_GRP_ADMSN_CD exactly matches one of the impairment group codes in column 3 of Appendix B, then the RIC code is the corresponding code in column 1. If the trimmed IMPRMNT_GRP_ADMSN_CD does not exactly match any of the impairment codes listed in Appendix B, then the RIC code cannot be determined and the CMG group cannot be computed.

Compute CMG Group Code

Once the motor score, cognitive score, age, and RIC have been determined, the CMG group code can be determined. The group code consists of a comorbidity tier code (A, B, C, or D) followed by a four digit group number. These items are determined using the following steps.

1. Determine the tier code.
 - a. The tier code is determined using the comorbidity condition ICD9 codes (listed below) and the RIC code in conjunction with Appendix C¹. The comorbidity condition ICD9 codes are as follows:
 - i. CMRB_COND_A_CD (item 24A)
 - ii. CMRB_COND_B_CD (item 24B)
 - iii. CMRB_COND_C_CD (item 24C)
 - iv. CMRB_COND_D_CD (item 24D)
 - v. CMRB_COND_E_CD (item 24E)
 - vi. CMRB_COND_F_CD (item 24F)
 - vii. CMRB_COND_G_CD (item 24G)
 - viii. CMRB_COND_H_CD (item 24H)
 - ix. CMRB_COND_I_CD (item 24I)
 - x. CMRB_COND_J_CD (item 24J)
 - xi. CMRB_COND_K_CD (item 24K)
 - xii. CMRB_COND_L_CD (item 24L)
 - xiii. CMRB_COND_M_CD (item 24M)

¹ Note for reference: Since there were no comorbidity changes with Version 2.70 (from Version 2.60), Appendix C does not indicate any additions with V2.70. Also, Appendix D, which lists comorbidities that were previously used but that were deleted in DLL V2.70, is blank.

- xiv. CMRB_COND_N_CD (item 24N)
 - xv. CMRB_COND_O_CD (item 24O)
 - xvi. CMRB_COND_P_CD (item 24P)
 - xvii. CMRB_COND_Q_CD (item 24Q)
 - xviii. CMRB_COND_R_CD (item 24R)
 - xix. CMRB_COND_S_CD (item 24S)
 - xx. CMRB_COND_T_CD (item 24T)
 - xxi. CMRB_COND_U_CD (item 24U)
 - xxii. CMRB_COND_V_CD (item 24V)
 - xxiii. CMRB_COND_W_CD (item 24W)
 - xxiv. CMRB_COND_X_CD (item 24X)
 - xxv. CMRB_COND_Y_CD (item 24Y)
- b. The default tier code is “A” (i.e., if no match is found in Appendix C, as described below, then the tier code is “A”).
- c. Attempt to find a match in Appendix C as follows:
- i. Loop through each of the rows in Appendix C.
 - ii. For each row in Appendix C, determine whether the RIC code is in the RIC exclusion list in the column labeled “RIC Exclusion” in Appendix C. If the RIC code is in the exclusion list, then skip to the next row of Appendix C. If the inclusion entry is blank, then no RICs are excluded for that row.
 - iii. If the RIC code is not in the RIC exclusion list or if the RIC exclusion list is blank, then do the following:
 - 1. Loop through the comorbidity condition ICD9 codes listed above (CMRB_COND_A_CD through CMRB_COND_Y_CD).
 - 2. For each comorbidity condition ICD9 code, determine whether the trimmed code exactly matches the trimmed ICD9CM code listed in the column labeled “ICD9CM” in Appendix C.
 - 3. If there is an exact match, then do the following:
 - a. Determine the tier code by examining the column labeled “Tier” in Appendix C.
 - b. If there is a “1” in the “Tier” column of Appendix C, then the tier code is “B”.
 - c. If there is a “2” in the “Tier” column of Appendix C, then the tier code is “C”.
 - d. If there is a “3” in the “Tier” column of Appendix C, then the tier code is “D”
 - 4. If an exact match is found, then terminate the search in Appendix C, otherwise continue the search with the next row.

2. Determine the four digit group number. The group number is determined using the RIC code, the motor score, the cognitive score, and the age in conjunction with Appendix E. The procedure is as follows:
 - a. Loop through the rows of Appendix E until a match is found. A match is determined as follows:
 - i. The RIC code must match the code listed in column 2 of Appendix E.
 - ii. The motor score must be greater than or equal to the “motor score low value” listed in column 3 and less than or equal to the “motor score high value” listed in column 4 of Appendix E.
 - iii. If the “cognitive score low value” in column 5 and the “cognitive score high value” in column 6 are both non-blank, then the cognitive score must be greater than or equal to the cognitive score low value and less than or equal to the cognitive score high value listed in Appendix E.
 - iv. If the “age low value” in column 7 and the “age high value” in column 8 are both non-blank, then the age must be greater than or equal to the age low value and less than or equal to the age high value listed in Appendix E.
 - b. When a match is found in Appendix E, then the CMG group number is equal to the code listed in column 1 of Appendix E.

Return Results

The CMG group code is created by concatenating the tier code and the group number. For example, if the tier code is “A” and the group number is “0114”, then the CMG group code is “A0114”.

As noted above if any of the data items used in the calculations are out of range or invalid or if the motor score, cognitive score, age, or RIC code are invalid or cannot be computed, the CMG group code must not be computed. An appropriate error code should be set to identify the error condition.

Appendix A: Variables Used for CMG Calculation

| Database Name | Form Location | Description | Length | Start Byte | End Byte | Range |
|----------------------|---------------|----------------------------------|--------|------------|----------|--|
| ASMT_SYS_CD | None | Assessment System Code | 10 | 1 | 10 | IRF-PAI |
| TRANS_TYPE_CD | None | Transaction Type Code | 1 | 11 | 11 | 1, 2 |
| BIRTH_DT | 6 | Birth Date | 8 | 657 | 664 | Valid full or partial date; spaces allowed only with partial date. |
| ADMSN_DT | 12 | Admission Date | 8 | 688 | 695 | Valid date |
| IMPRMNT_GRP_ADMSN_CD | 21A | Impairment Group: Admission | 9 | 720 | 728 | Valid code |
| CMRBD_COND_A_CD | 24A | Comorbid Conditions (ICD-9 Code) | 8 | 754 | 761 | Valid ICD-9 Code, ^ |
| CMRBD_COND_B_CD | 24B | Comorbid Conditions (ICD-9 Code) | 8 | 762 | 769 | Valid ICD-9 Code, ^ |
| CMRBD_COND_C_CD | 24C | Comorbid Conditions (ICD-9 Code) | 8 | 770 | 777 | Valid ICD-9 Code, ^ |
| CMRBD_COND_D_CD | 24D | Comorbid Conditions (ICD-9 Code) | 8 | 778 | 785 | Valid ICD-9 Code, ^ |
| CMRBD_COND_E_CD | 24E | Comorbid Conditions (ICD-9 Code) | 8 | 786 | 793 | Valid ICD-9 Code, ^ |
| CMRBD_COND_F_CD | 24F | Comorbid Conditions (ICD-9 Code) | 8 | 794 | 801 | Valid ICD-9 Code, ^ |
| CMRBD_COND_G_CD | 24G | Comorbid Conditions (ICD-9 Code) | 8 | 802 | 809 | Valid ICD-9 Code, ^ |
| CMRBD_COND_H_CD | 24H | Comorbid Conditions (ICD-9 Code) | 8 | 810 | 817 | Valid ICD-9 Code, ^ |
| CMRBD_COND_I_CD | 24I | Comorbid Conditions (ICD-9 Code) | 8 | 818 | 825 | Valid ICD-9 Code, ^ |
| CMRBD_COND_J_CD | 24J | Comorbid Conditions (ICD-9 Code) | 8 | 826 | 833 | Valid ICD-9 Code, ^ |
| CMRBD_COND_K_CD | 24K | Comorbid Conditions (ICD-9 Code) | 8 | 1132 | 1139 | Valid ICD-9 Code, ^ |
| CMRBD_COND_L_CD | 24L | Comorbid Conditions (ICD-9 Code) | 8 | 1140 | 1147 | Valid ICD-9 Code, ^ |
| CMRBD_COND_M_CD | 24M | Comorbid Conditions (ICD-9 Code) | 8 | 1148 | 1155 | Valid ICD-9 Code, ^ |
| CMRBD_COND_N_CD | 24N | Comorbid Conditions (ICD-9 Code) | 8 | 1156 | 1163 | Valid ICD-9 Code, ^ |
| CMRBD_COND_O_CD | 24O | Comorbid Conditions (ICD-9 Code) | 8 | 1164 | 1171 | Valid ICD-9 Code, ^ |
| CMRBD_COND_P_CD | 24P | Comorbid Conditions (ICD-9 Code) | 8 | 1172 | 1179 | Valid ICD-9 Code, ^ |
| CMRBD_COND_Q_CD | 24Q | Comorbid Conditions (ICD-9 Code) | 8 | 1180 | 1187 | Valid ICD-9 Code, ^ |
| CMRBD_COND_R_CD | 24R | Comorbid Conditions (ICD-9 Code) | 8 | 1188 | 1195 | Valid ICD-9 Code, ^ |
| CMRBD_COND_S_CD | 24S | Comorbid Conditions (ICD-9 Code) | 8 | 1196 | 1203 | Valid ICD-9 Code, ^ |
| CMRBD_COND_T_CD | 24T | Comorbid Conditions (ICD-9 Code) | 8 | 1204 | 1211 | Valid ICD-9 Code, ^ |
| CMRBD_COND_U_CD | 24U | Comorbid Conditions (ICD-9 Code) | 8 | 1212 | 1219 | Valid ICD-9 Code, ^ |
| CMRBD_COND_V_CD | 24V | Comorbid Conditions (ICD-9 Code) | 8 | 1220 | 1227 | Valid ICD-9 Code, ^ |
| CMRBD_COND_W_CD | 24W | Comorbid Conditions (ICD-9 Code) | 8 | 1228 | 1235 | Valid ICD-9 Code, ^ |
| CMRBD_COND_X_CD | 24X | Comorbid Conditions (ICD-9 Code) | 8 | 1236 | 1243 | Valid ICD-9 Code, ^ |

¹ Starting with Version 1.10 of the DLL, the range of valid values for 39Na and 39Oa was changed from 00-07 to 01-07.

Appendix A: Variables Used for CMG Calculation

| Database Name | Form Location | Description | Length | Start Byte | End Byte | Range |
|------------------------|---------------|--|--------|------------|----------|---------------------|
| CMRBD_COND_Y_CD | 24Y | Comorbid Conditions (ICD-9 Code) | 8 | 1244 | 1251 | Valid ICD-9 Code, ^ |
| EATG_ADMSN_CD | 39AA | SELF-CARE - Eating: Admission | 2 | 882 | 883 | 00-07 |
| GRMG_ADMSN_CD | 39BA | SELF-CARE - Grooming: Admission | 2 | 888 | 889 | 00-07 |
| BATHG_ADMSN_CD | 39CA | SELF-CARE - Bathing: Admission | 2 | 894 | 895 | 00-07 |
| DRSG_UPR_ADMSN_CD | 39DA | SELF-CARE - Dressing - Upper: Admission | 2 | 900 | 901 | 00-07 |
| DRSG_LWR_ADMSN_CD | 39EA | SELF-CARE - Dressing - Lower: Admission | 2 | 906 | 907 | 00-07 |
| TOILTG_ADMSN_CD | 39FA | SELF-CARE - Toileting: Admission | 2 | 912 | 913 | 00-07 |
| SPHNCTR_BLADR_ADMSN_CD | 39GA | SPHINCTER CONTROL - Bladder: Admission | 2 | 918 | 919 | 01-07 |
| SPHNCTR_BWL_ADMSN_CD | 39HA | SPHINCTER CONTROL - Bowel: Admission | 2 | 924 | 925 | 01-07 |
| BED_CHR_WC_ADMSN_CD | 39IA | TRANSFERS - Bed, chair, wheelchair: Admission | 2 | 930 | 931 | 00-07 |
| TOILT_ADMSN_CD | 39JA | TRANSFERS - Toilet: Admission | 2 | 936 | 937 | 00-07 |
| WLK_WC_ADMSN_CD | 39LA | LOCOMOTION - Walk/wheelchair: Admission | 2 | 948 | 949 | 00-07 |
| STR_ADMSN_CD | 39MA | LOCOMOTION - Stairs: Admission | 2 | 956 | 957 | 00-07 |
| CMPRHNSN_ADMSN_CD | 39NA | COMMUNICATION - Comprehension: Admission | 2 | 962 | 963 | 01-07 ¹ |
| EXPRSN_ADMSN_CD | 39OA | COMMUNICATION - Expression: Admission | 2 | 970 | 971 | 01-07 ¹ |
| SCL_INTRCTN_ADMSN_CD | 39PA | SOCIAL COGNITION - Social interaction: Admission | 2 | 978 | 979 | 01-07 |
| PRBLM_SLVG_ADMSN_CD | 39QA | SOCIAL COGNITION - Problem solving: Admission | 2 | 984 | 985 | 01-07 |
| MEMRY_ADMSN_CD | 39RA | SOCIAL COGNITION - Memory: Admission | 2 | 990 | 991 | 01-07 |
| DSCHRG_DT | 40 | Discharge Date | 8 | 996 | 1003 | Valid date |

¹ Starting with Version 1.10 of the DLL, the range of valid values for 39Na and 39Oa was changed from 00-07 to 01-07.

Appendix B: RIC Lookup Table

| RIC Code | RIC Label | Impairment Grp Code¹ | Impairment Group Label |
|-----------------|---|--|---|
| 01 | Stroke (Stroke) | 01.1 | Left body involvement (right brain) |
| 01 | Stroke (Stroke) | 01.2 | Right body involvement (left brain) |
| 01 | Stroke (Stroke) | 01.3 | Bilateral Involvement |
| 01 | Stroke (Stroke) | 01.4 | No Paresis |
| 01 | Stroke (Stroke) | 01.9 | Other Stroke |
| 02 | Traumatic brain injury (TBI) | 02.21 | Open Injury |
| 02 | Traumatic brain injury (TBI) | 02.22 | Closed Injury |
| 03 | Nontraumatic brain injury (NTBI) | 02.1 | Non-traumatic |
| 03 | Nontraumatic brain injury (NTBI) | 02.9 | Other Brain |
| 04 | Traumatic spinal cord injury (TSCI) | 04.210 | Paraplegia, Unspecified |
| 04 | Traumatic spinal cord injury (TSCI) | 04.211 | Paraplegia, Incomplete |
| 04 | Traumatic spinal cord injury (TSCI) | 04.212 | Paraplegia, Complete |
| 04 | Traumatic spinal cord injury (TSCI) | 04.220 | Quadriplegia, Unspecified |
| 04 | Traumatic spinal cord injury (TSCI) | 04.2211 | Quadriplegia, Incomplete C1-4 |
| 04 | Traumatic spinal cord injury (TSCI) | 04.2212 | Quadriplegia, Incomplete C5-8 |
| 04 | Traumatic spinal cord injury (TSCI) | 04.2221 | Quadriplegia, Complete C1-4 |
| 04 | Traumatic spinal cord injury (TSCI) | 04.2222 | Quadriplegia, Complete C5-8 |
| 04 | Traumatic spinal cord injury (TSCI) | 04.230 | Other traumatic spinal cord dysfunction |
| 05 | Nontraumatic spinal cord injury (NTSCI) | 04.110 | Paraplegia, unspecified |
| 05 | Nontraumatic spinal cord injury (NTSCI) | 04.111 | Paraplegia, incomplete |
| 05 | Nontraumatic spinal cord injury (NTSCI) | 04.112 | Paraplegia, complete |
| 05 | Nontraumatic spinal cord injury (NTSCI) | 04.120 | Quadriplegia, unspecified |
| 05 | Nontraumatic spinal cord injury (NTSCI) | 04.1211 | Quadriplegia, Incomplete C1-4 |
| 05 | Nontraumatic spinal cord injury (NTSCI) | 04.1212 | Quadriplegia, Incomplete C5-8 |
| 05 | Nontraumatic spinal cord injury (NTSCI) | 04.1221 | Quadriplegia, Complete C1-4 |
| 05 | Nontraumatic spinal cord injury (NTSCI) | 04.1222 | Quadriplegia, Complete C5-8 |
| 05 | Nontraumatic spinal cord injury (NTSCI) | 04.130 | Other non-traumatic spinal cord dysfunction |
| 06 | Neurological (Neuro) | 03.1 | Multiple Sclerosis |
| 06 | Neurological (Neuro) | 03.2 | Parkinsonism |
| 06 | Neurological (Neuro) | 03.3 | Polyneuropathy |
| 06 | Neurological (Neuro) | 03.5 | Cerebral Palsy |
| 06 | Neurological (Neuro) | 03.8 | Neuromuscular Disorders |
| 06 | Neurological (Neuro) | 03.9 | Other Neurologic |
| 07 | Fracture of LE (FracLE) | 08.11 | Status post unilateral hip fracture |

¹ The impairment group code submitted on the IRF-PAI assessment has 2 leading zeros added before the impairment group code in this Appendix.

Appendix B: RIC Lookup Table

| RIC Code | RIC Label | Impairment Grp Code¹ | Impairment Group Label |
|-----------------|--|--|---|
| 07 | Fracture of LE (FracLE) | 08.12 | Status post bilateral hip fractures |
| 07 | Fracture of LE (FracLE) | 08.2 | Status post femur (shaft) fracture |
| 07 | Fracture of LE (FracLE) | 08.3 | Status post pelvic fracture |
| 08 | Replacement of LE joint (ReplLE) | 08.51 | Status post unilateral hip replacement |
| 08 | Replacement of LE joint (ReplLE) | 08.52 | Status post bilateral hip replacements |
| 08 | Replacement of LE joint (ReplLE) | 08.61 | Status post unilateral knee replacement |
| 08 | Replacement of LE joint (ReplLE) | 08.62 | Status post bilateral knee replacements |
| 08 | Replacement of LE joint (ReplLE) | 08.71 | Status post knee and hip replacements (same side) |
| 08 | Replacement of LE joint (ReplLE) | 08.72 | Status post knee and hip replacements (different sides) |
| 09 | Other orthopedic(Ortho) | 08.9 | Other orthopedic |
| 10 | Amputation, lower extremity (AMPLE) | 05.3 | Unilateral lower extremity above the knee (AK) |
| 10 | Amputation, lower extremity (AMPLE) | 05.4 | Unilateral lower extremity below the knee (BK) |
| 10 | Amputation, lower extremity (AMPLE) | 05.5 | Bilateral lower extremity above the knee (AK/AK) |
| 10 | Amputation, lower extremity (AMPLE) | 05.6 | Bilateral lower extremity above/below the knee (AK/BK) |
| 10 | Amputation, lower extremity (AMPLE) | 05.7 | Bilateral lower extremity below the knee (BK/BK) |
| 11 | Amputation, other (AMP-NLE) | 05.1 | Unilateral upper extremity above the elbow (AE) |
| 11 | Amputation, other (AMP-NLE) | 05.2 | Unilateral upper extremity below the elbow (BE) |
| 11 | Amputation, other (AMP-NLE) | 05.9 | Other amputation |
| 12 | Osteoarthritis (OsteoA) | 06.2 | Osteoarthritis |
| 13 | Rheumatoid, other arthritis (RheumA) | 06.1 | Rheumatoid Arthritis |
| 13 | Rheumatoid, other arthritis (RheumA) | 06.9 | Other arthritis |
| 14 | Cardiac (Cardiac) | 09 | Cardiac |
| 15 | Pulmonary (Pulmonary) | 10.1 | Chronic Obstructive Pulmonary Disease |
| 15 | Pulmonary (Pulmonary) | 10.9 | Other pulmonary |
| 16 | Pain Syndrome (Pain) | 07.1 | Neck pain |
| 16 | Pain Syndrome (Pain) | 07.2 | Back pain |
| 16 | Pain Syndrome (Pain) | 07.3 | Extremity pain |
| 16 | Pain Syndrome (Pain) | 07.9 | Other pain |
| 17 | Major multiple trauma, no brain injury or spinal cord injury (MMT-NBSCI) | 08.4 | Status post major multiple fractures |
| 17 | Major multiple trauma, no brain injury or spinal cord injury (MMT-NBSCI) | 14.9 | Other multiple trauma |
| 18 | Major multiple trauma, with brain or spinal cord injury (MMT-BSCI) | 14.1 | Brain and spinal cord injury |
| 18 | Major multiple trauma, with brain or spinal cord injury (MMT-BSCI) | 14.2 | Brain and multiple fractures/amputation |
| 18 | Major multiple trauma, with brain or spinal cord injury (MMT-BSCI) | 14.3 | Spinal cord and multiple fractures/amputation |

Appendix B: RIC Lookup Table

| RIC Code | RIC Label | Impairment Grp Code¹ | Impairment Group Label |
|-----------------|----------------------|--|--|
| 19 | Guillian Barre (GB) | 03.4 | Guillian Barre syndrome |
| 20 | Miscellaneous (Misc) | 12.1 | Spina Bifida |
| 20 | Miscellaneous (Misc) | 12.9 | Other congenital |
| 20 | Miscellaneous (Misc) | 13 | Other disabling impairments |
| 20 | Miscellaneous (Misc) | 15 | Developmental disability |
| 20 | Miscellaneous (Misc) | 16 | Debility |
| 20 | Miscellaneous (Misc) | 17.1 | Infection |
| 20 | Miscellaneous (Misc) | 17.2 | Neoplasms |
| 20 | Miscellaneous (Misc) | 17.31 | Nutrition (endocrine/metabolic) with intubation/parenteral nutrition |
| 20 | Miscellaneous (Misc) | 17.32 | Nutrition (endocrine/metabolic) without intubation/parenteral nutrition |
| 20 | Miscellaneous (Misc) | 17.4 | Circulatory disorders |
| 20 | Miscellaneous (Misc) | 17.51 | Respiratory disorders-Ventilator Dependent |
| 20 | Miscellaneous (Misc) | 17.52 | Respiratory disorders-Non-ventilator Dependent |
| 20 | Miscellaneous (Misc) | 17.6 | Terminal care |
| 20 | Miscellaneous (Misc) | 17.7 | Skin disorders |
| 20 | Miscellaneous (Misc) | 17.8 | Medical/Surgical complications |
| 20 | Miscellaneous (Misc) | 17.9 | Other medically complex conditions |
| 21 | Burns (Burns) | 11 | Burns |

Appendix C: Comorbidity Tier Code Lookup Table

(No changes with Version 2.70)

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|---------------------------|------|---------------|-------|-------------|------------------|--------------|
| 478.31 | Vocal paral unilat part | 1 | 15 | | | | |
| 478.32 | Vocal paral unilat total | 1 | 15 | | | | |
| 478.33 | Vocal paral bilat part | 1 | 15 | | | | |
| 478.34 | Vocal paral bilat total | 1 | 15 | | | | |
| 478.6 | Edema of larynx | 1 | 15 | | | | |
| V44.0 | Tracheostomy status | 1 | | | | | |
| V45.11 | Renal dialysis status | 1 | | | | | |
| V55.0 | Atten to tracheostomy | 1 | | | | | |
| 008.42 | Pseudomonas enteritis | 2 | | | | | |
| 008.45 | Int inf clstridium dfcile | 2 | | | | | |
| 041.7 | Pseudomonas infect NOS | 2 | | | | | |
| 438.82 | Late ef CV dis dysphagia | 2 | 01 | | | | |
| 579.3 | Intest postop nonabsorb | 2 | | | | | |
| 787.20 | Dysphagia NOS | 2 | 01 | | | | |
| 787.21 | Dysphagia, oral phase | 2 | 01 | | | | |
| 787.22 | Dysphagia, oropharyngeal | 2 | 01 | | | | |
| 787.23 | Dysphagia, pharyngeal | 2 | 01 | | | | |
| 787.24 | Dysphagia,pharyngoesoph | 2 | 01 | | | | |
| 787.29 | Dysphagia NEC | 2 | 01 | | | | |
| 011.00 | TB lung infiltr-unspec | 3 | 15 | | | | |
| 011.01 | TB lung infiltr-no exam | 3 | 15 | | | | |
| 011.02 | TB lung infiltr-exm unkn | 3 | 15 | | | | |
| 011.03 | TB lung infiltr-micro dx | 3 | 15 | | | | |
| 011.04 | TB lung infiltr-cult dx | 3 | 15 | | | | |
| 011.05 | TB lung infiltr-histo dx | 3 | 15 | | | | |
| 011.06 | TB lung infiltr-oth test | 3 | 15 | | | | |
| 011.10 | TB lung nodular-unspec | 3 | 15 | | | | |
| 011.11 | TB lung nodular-no exam | 3 | 15 | | | | |
| 011.12 | TB lung nodul-exam unkn | 3 | 15 | | | | |
| 011.13 | TB lung nodular-micro dx | 3 | 15 | | | | |
| 011.14 | TB lung nodular-cult dx | 3 | 15 | | | | |
| 011.15 | TB lung nodular-histo dx | 3 | 15 | | | | |
| 011.16 | TB lung nodular-oth test | 3 | 15 | | | | |
| 011.20 | TB lung w cavity-unspec | 3 | 15 | | | | |
| 011.21 | TB lung w cavity-no exam | 3 | 15 | | | | |
| 011.22 | TB lung cavity-exam unkn | 3 | 15 | | | | |
| 011.23 | TB lung w cavit-micro dx | 3 | 15 | | | | |
| 011.24 | TB lung w cavity-cult dx | 3 | 15 | | | | |
| 011.25 | TB lung w cavit-histo dx | 3 | 15 | | | | |
| 011.26 | TB lung w cavit-oth test | 3 | 15 | | | | |
| 011.30 | TB of bronchus-unspec | 3 | 15 | | | | |
| 011.31 | TB of bronchus-no exam | 3 | 15 | | | | |
| 011.32 | TB of bronchus-exam unkn | 3 | 15 | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table**(No changes with Version 2.70)**

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|---------------------------|------|---------------|-------|-------------|------------------|--------------|
| 011.33 | TB of bronchus-micro dx | 3 | 15 | | | | |
| 011.34 | TB of bronchus-cult dx | 3 | 15 | | | | |
| 011.35 | TB of bronchus-histo dx | 3 | 15 | | | | |
| 011.36 | TB of bronchus-oth test | 3 | 15 | | | | |
| 011.40 | TB lung fibrosis-unspec | 3 | 15 | | | | |
| 011.41 | TB lung fibrosis-no exam | 3 | 15 | | | | |
| 011.42 | TB lung fibros-exam unkn | 3 | 15 | | | | |
| 011.43 | TB lung fibros-micro dx | 3 | 15 | | | | |
| 011.44 | TB lung fibrosis-cult dx | 3 | 15 | | | | |
| 011.45 | TB lung fibros-histo dx | 3 | 15 | | | | |
| 011.46 | TB lung fibros-oth test | 3 | 15 | | | | |
| 011.50 | TB bronchiectasis-unspec | 3 | 15 | | | | |
| 011.51 | TB bronchiect-no exam | 3 | 15 | | | | |
| 011.52 | TB bronchiect-exam unkn | 3 | 15 | | | | |
| 011.53 | TB bronchiect-micro dx | 3 | 15 | | | | |
| 011.54 | TB bronchiect-cult dx | 3 | 15 | | | | |
| 011.55 | TB bronchiect-histo dx | 3 | 15 | | | | |
| 011.56 | TB bronchiect-oth test | 3 | 15 | | | | |
| 011.60 | TB pneumonia-unspec | 3 | 15 | | | | |
| 011.61 | TB pneumonia-no exam | 3 | 15 | | | | |
| 011.62 | TB pneumonia-exam unkn | 3 | 15 | | | | |
| 011.63 | TB pneumonia-micro dx | 3 | 15 | | | | |
| 011.64 | TB pneumonia-cult dx | 3 | 15 | | | | |
| 011.65 | TB pneumonia-histo dx | 3 | 15 | | | | |
| 011.66 | TB pneumonia-oth test | 3 | 15 | | | | |
| 011.70 | TB pneumothorax-unspec | 3 | 15 | | | | |
| 011.71 | TB pneumothorax-no exam | 3 | 15 | | | | |
| 011.72 | TB pneumothorax-exam unkn | 3 | 15 | | | | |
| 011.73 | TB pneumothorax-micro dx | 3 | 15 | | | | |
| 011.74 | TB pneumothorax-cult dx | 3 | 15 | | | | |
| 011.75 | TB pneumothorax-histo dx | 3 | 15 | | | | |
| 011.76 | TB pneumothorax-oth test | 3 | 15 | | | | |
| 011.80 | Pulmonary TB NEC-unspec | 3 | 15 | | | | |
| 011.81 | Pulmonary TB NEC-no exam | 3 | 15 | | | | |
| 011.82 | Pulmon TB NEC-exam unkn | 3 | 15 | | | | |
| 011.83 | Pulmon TB NEC-micro dx | 3 | 15 | | | | |
| 011.84 | Pulmon TB NEC-cult dx | 3 | 15 | | | | |
| 011.85 | Pulmon TB NEC-histo dx | 3 | 15 | | | | |
| 011.86 | Pulmon TB NEC-oth test | 3 | 15 | | | | |
| 011.90 | Pulmonary TB NOS-unspec | 3 | 15 | | | | |
| 011.91 | Pulmonary TB NOS-no exam | 3 | 15 | | | | |
| 011.92 | Pulmon TB NOS-exam unkn | 3 | 15 | | | | |
| 011.93 | Pulmon TB NOS-micro dx | 3 | 15 | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table**(No changes with Version 2.70)**

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|--------------------------|------|---------------|-------|-------------|------------------|--------------|
| 011.94 | Pulmon TB NOS-cult dx | 3 | 15 | | | | |
| 011.95 | Pulmon TB NOS-histo dx | 3 | 15 | | | | |
| 011.96 | Pulmon TB NOS-oth test | 3 | 15 | | | | |
| 012.00 | TB pleurisy-unspec | 3 | 15 | | | | |
| 012.01 | TB pleurisy-no exam | 3 | 15 | | | | |
| 012.02 | TB pleurisy-exam unkn | 3 | 15 | | | | |
| 012.03 | TB pleurisy-micro dx | 3 | 15 | | | | |
| 012.04 | TB pleurisy-cult dx | 3 | 15 | | | | |
| 012.05 | TB pleurisy-histolog dx | 3 | 15 | | | | |
| 012.06 | TB pleurisy-oth test | 3 | 15 | | | | |
| 012.10 | TB thoracic nodes-unspec | 3 | 15 | | | | |
| 012.11 | TB thorax node-no exam | 3 | 15 | | | | |
| 012.12 | TB thorax node-exam unkn | 3 | 15 | | | | |
| 012.13 | TB thorax node-micro dx | 3 | 15 | | | | |
| 012.14 | TB thorax node-cult dx | 3 | 15 | | | | |
| 012.15 | TB thorax node-histo dx | 3 | 15 | | | | |
| 012.16 | TB thorax node-oth test | 3 | 15 | | | | |
| 012.20 | Isol tracheal tb-unspec | 3 | 15 | | | | |
| 012.21 | Isol tracheal tb-no exam | 3 | 15 | | | | |
| 012.22 | Isol trach tb-exam unkn | 3 | 15 | | | | |
| 012.23 | Isolat trach tb-micro dx | 3 | 15 | | | | |
| 012.24 | Isol tracheal tb-cult dx | 3 | 15 | | | | |
| 012.25 | Isolat trach tb-histo dx | 3 | 15 | | | | |
| 012.26 | Isolat trach tb-oth test | 3 | 15 | | | | |
| 012.30 | TB laryngitis-unspec | 3 | 15 | | | | |
| 012.31 | TB laryngitis-no exam | 3 | 15 | | | | |
| 012.32 | TB laryngitis-exam unkn | 3 | 15 | | | | |
| 012.33 | TB laryngitis-micro dx | 3 | 15 | | | | |
| 012.34 | TB laryngitis-cult dx | 3 | 15 | | | | |
| 012.35 | TB laryngitis-histo dx | 3 | 15 | | | | |
| 012.36 | TB laryngitis-oth test | 3 | 15 | | | | |
| 012.80 | Resp TB NEC-unspec | 3 | 15 | | | | |
| 012.81 | Resp TB NEC-no exam | 3 | 15 | | | | |
| 012.82 | Resp TB NEC-exam unkn | 3 | 15 | | | | |
| 012.83 | Resp TB NEC-micro dx | 3 | 15 | | | | |
| 012.84 | Resp TB NEC-cult dx | 3 | 15 | | | | |
| 012.85 | Resp TB NEC-histo dx | 3 | 15 | | | | |
| 012.86 | Resp TB NEC-oth test | 3 | 15 | | | | |
| 013.00 | TB meningitis-unspec | 3 | 03,05 | | | | |
| 013.01 | TB meningitis-no exam | 3 | 03,05 | | | | |
| 013.02 | TB meningitis-exam unkn | 3 | 03,05 | | | | |
| 013.03 | TB meningitis-micro dx | 3 | 03,05 | | | | |
| 013.04 | TB meningitis-cult dx | 3 | 03,05 | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table

(No changes with Version 2.70)

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|--------------------------|------|---------------|-------|-------------|------------------|--------------|
| 013.05 | TB meningitis-histo dx | 3 | 03,05 | | | | |
| 013.06 | TB meningitis-oth test | 3 | 03,05 | | | | |
| 013.10 | Tubrcлма meninges-unspec | 3 | 03,05 | | | | |
| 013.11 | Tubrcлма mening-no exam | 3 | 03,05 | | | | |
| 013.12 | Tubrcлма menin-exam unkn | 3 | 03,05 | | | | |
| 013.13 | Tubrcлма mening-micro dx | 3 | 03,05 | | | | |
| 013.14 | Tubrcлма mening-cult dx | 3 | 03,05 | | | | |
| 013.15 | Tubrcлма mening-histo dx | 3 | 03,05 | | | | |
| 013.16 | Tubrcлма mening-oth test | 3 | 03,05 | | | | |
| 013.20 | Tuberculoma brain-unspec | 3 | 03 | | | | |
| 013.21 | Tubrcлoma brain-no exam | 3 | 03 | | | | |
| 013.22 | Tubrcлма brain-exam unkn | 3 | 03 | | | | |
| 013.23 | Tubrcлoma brain-micro dx | 3 | 03 | | | | |
| 013.24 | Tubrcлoma brain-cult dx | 3 | 03 | | | | |
| 013.25 | Tubrcлoma brain-histo dx | 3 | 03 | | | | |
| 013.26 | Tubrcлoma brain-oth test | 3 | 03 | | | | |
| 013.30 | TB brain abscess-unspec | 3 | 03 | | | | |
| 013.31 | TB brain abscess-no exam | 3 | 03 | | | | |
| 013.32 | TB brain absc-exam unkn | 3 | 03 | | | | |
| 013.33 | TB brain absc-micro dx | 3 | 03 | | | | |
| 013.34 | TB brain abscess-cult dx | 3 | 03 | | | | |
| 013.35 | TB brain absc-histo dx | 3 | 03 | | | | |
| 013.36 | TB brain absc-oth test | 3 | 03 | | | | |
| 013.40 | Tubrcлма sp cord-unspec | 3 | 05 | | | | |
| 013.41 | Tubrcлма sp cord-no exam | 3 | 05 | | | | |
| 013.42 | Tubrcлма sp cd-exam unkn | 3 | 05 | | | | |
| 013.43 | Tubrcлма sp crd-micro dx | 3 | 05 | | | | |
| 013.44 | Tubrcлма sp cord-cult dx | 3 | 05 | | | | |
| 013.45 | Tubrcлма sp crd-histo dx | 3 | 05 | | | | |
| 013.46 | Tubrcлма sp crd-oth test | 3 | 05 | | | | |
| 013.50 | TB sp crd abscess-unspec | 3 | 05 | | | | |
| 013.51 | TB sp crd absc-no exam | 3 | 05 | | | | |
| 013.52 | TB sp crd absc-exam unkn | 3 | 05 | | | | |
| 013.53 | TB sp crd absc-micro dx | 3 | 05 | | | | |
| 013.54 | TB sp crd absc-cult dx | 3 | 05 | | | | |
| 013.55 | TB sp crd absc-histo dx | 3 | 05 | | | | |
| 013.56 | TB sp crd absc-oth test | 3 | 05 | | | | |
| 013.60 | TB encephalitis-unspec | 3 | 03 | | | | |
| 013.61 | TB encephalitis-no exam | 3 | 03 | | | | |
| 013.62 | TB encephalit-exam unkn | 3 | 03 | | | | |
| 013.63 | TB encephalitis-micro dx | 3 | 03 | | | | |
| 013.64 | TB encephalitis-cult dx | 3 | 03 | | | | |
| 013.65 | TB encephalitis-histo dx | 3 | 03 | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table**(No changes with Version 2.70)**

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|--------------------------|------|---------------|-------|-------------|------------------|--------------|
| 013.66 | TB encephalitis-oth test | 3 | 03 | | | | |
| 013.80 | Cns TB NEC-unspec | 3 | 03,05 | | | | |
| 013.81 | Cns TB NEC-no exam | 3 | 03,05 | | | | |
| 013.82 | Cns TB NEC-exam unkn | 3 | 03,05 | | | | |
| 013.83 | Cns TB NEC-micro dx | 3 | 03,05 | | | | |
| 013.84 | Cns TB NEC-cult dx | 3 | 03,05 | | | | |
| 013.85 | Cns TB NEC-histo dx | 3 | 03,05 | | | | |
| 013.86 | Cns TB NEC-oth test | 3 | 03,05 | | | | |
| 013.90 | Cns TB NOS-unspec | 3 | 03,05 | | | | |
| 013.91 | Cns TB NOS-no exam | 3 | 03,05 | | | | |
| 013.92 | Cns TB NOS-exam unkn | 3 | 03,05 | | | | |
| 013.93 | Cns TB NOS-micro dx | 3 | 03,05 | | | | |
| 013.94 | Cns TB NOS-cult dx | 3 | 03,05 | | | | |
| 013.95 | Cns TB NOS-histo dx | 3 | 03,05 | | | | |
| 013.96 | Cns TB NOS-oth test | 3 | 03,05 | | | | |
| 014.00 | TB peritonitis-unspec | 3 | | | | | |
| 014.01 | TB peritonitis-no exam | 3 | | | | | |
| 014.02 | TB peritonitis-exam unkn | 3 | | | | | |
| 014.03 | TB peritonitis-micro dx | 3 | | | | | |
| 014.04 | TB peritonitis-cult dx | 3 | | | | | |
| 014.05 | TB peritonitis-histo dx | 3 | | | | | |
| 014.06 | TB peritonitis-oth test | 3 | | | | | |
| 014.80 | Intestinal TB NEC-unspec | 3 | | | | | |
| 014.81 | Intestin TB NEC-no exam | 3 | | | | | |
| 014.82 | Intest TB NEC-exam unkn | 3 | | | | | |
| 014.83 | Intestin TB NEC-micro dx | 3 | | | | | |
| 014.84 | Intestin TB NEC-cult dx | 3 | | | | | |
| 014.85 | Intestin TB NEC-histo dx | 3 | | | | | |
| 014.86 | Intestin TB NEC-oth test | 3 | | | | | |
| 015.00 | TB of vertebra-unspec | 3 | 03,09 | | | | |
| 015.01 | TB of vertebra-no exam | 3 | 03,09 | | | | |
| 015.02 | TB of vertebra-exam unkn | 3 | 03,09 | | | | |
| 015.03 | TB of vertebra-micro dx | 3 | 03,09 | | | | |
| 015.04 | TB of vertebra-cult dx | 3 | 03,09 | | | | |
| 015.05 | TB of vertebra-histo dx | 3 | 03,09 | | | | |
| 015.06 | TB of vertebra-oth test | 3 | 03,09 | | | | |
| 015.10 | TB of hip-unspec | 3 | 09 | | | | |
| 015.11 | TB of hip-no exam | 3 | 09 | | | | |
| 015.12 | TB of hip-exam unkn | 3 | 09 | | | | |
| 015.13 | TB of hip-micro dx | 3 | 09 | | | | |
| 015.14 | TB of hip-cult dx | 3 | 09 | | | | |
| 015.15 | TB of hip-histo dx | 3 | 09 | | | | |
| 015.16 | TB of hip-oth test | 3 | 09 | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table

(No changes with Version 2.70)

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|--------------------------|------|---------------|-------|-------------|------------------|--------------|
| 015.20 | TB of knee-unspec | 3 | 09 | | | | |
| 015.21 | TB of knee-no exam | 3 | 09 | | | | |
| 015.22 | TB of knee-exam unkn | 3 | 09 | | | | |
| 015.23 | TB of knee-micro dx | 3 | 09 | | | | |
| 015.24 | TB of knee-cult dx | 3 | 09 | | | | |
| 015.25 | TB of knee-histo dx | 3 | 09 | | | | |
| 015.26 | TB of knee-oth test | 3 | 09 | | | | |
| 015.50 | TB of limb bones-unspec | 3 | 09,10,11 | | | | |
| 015.51 | TB limb bones-no exam | 3 | 09,10,11 | | | | |
| 015.52 | TB limb bones-exam unkn | 3 | 09,10,11 | | | | |
| 015.53 | TB limb bones-micro dx | 3 | 09,10,11 | | | | |
| 015.54 | TB limb bones-cult dx | 3 | 09,10,11 | | | | |
| 015.55 | TB limb bones-histo dx | 3 | 09,10,11 | | | | |
| 015.56 | TB limb bones-oth test | 3 | | | | | |
| 015.60 | TB of mastoid-unspec | 3 | | | | | |
| 015.61 | TB of mastoid-no exam | 3 | | | | | |
| 015.62 | TB of mastoid-exam unkn | 3 | | | | | |
| 015.63 | TB of mastoid-micro dx | 3 | | | | | |
| 015.64 | TB of mastoid-cult dx | 3 | | | | | |
| 015.65 | TB of mastoid-histo dx | 3 | | | | | |
| 015.66 | TB of mastoid-oth test | 3 | | | | | |
| 015.70 | TB of bone NEC-unspec | 3 | 09 | | | | |
| 015.71 | TB of bone NEC-no exam | 3 | 09 | | | | |
| 015.72 | TB of bone NEC-exam unkn | 3 | 09 | | | | |
| 015.73 | TB of bone NEC-micro dx | 3 | 09 | | | | |
| 015.74 | TB of bone NEC-cult dx | 3 | 09 | | | | |
| 015.75 | TB of bone NEC-histo dx | 3 | 09 | | | | |
| 015.76 | TB of bone NEC-oth test | 3 | 09 | | | | |
| 015.80 | TB of joint NEC-unspec | 3 | 09 | | | | |
| 015.81 | TB of joint NEC-no exam | 3 | 09 | | | | |
| 015.82 | TB joint NEC-exam unkn | 3 | 09 | | | | |
| 015.83 | TB of joint NEC-micro dx | 3 | 09 | | | | |
| 015.84 | TB of joint NEC-cult dx | 3 | 09 | | | | |
| 015.85 | TB of joint NEC-histo dx | 3 | 09 | | | | |
| 015.86 | TB of joint NEC-oth test | 3 | 09 | | | | |
| 015.90 | TB bone/joint NOS-unspec | 3 | 09 | | | | |
| 015.91 | TB bone/jt NOS-no exam | 3 | 09 | | | | |
| 015.92 | TB bone/jt NOS-exam unkn | 3 | 09 | | | | |
| 015.93 | TB bone/jt NOS-micro dx | 3 | 09 | | | | |
| 015.94 | TB bone/jt NOS-cult dx | 3 | 09 | | | | |
| 015.95 | TB bone/jt NOS-histo dx | 3 | 09 | | | | |
| 015.96 | TB bone/jt NOS-oth test | 3 | 09 | | | | |
| 016.00 | TB of kidney-unspec | 3 | | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table**(No changes with Version 2.70)**

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|--------------------------|------|---------------|-------|-------------|------------------|--------------|
| 016.01 | TB of kidney-no exam | 3 | | | | | |
| 016.02 | TB of kidney-exam unkn | 3 | | | | | |
| 016.03 | TB of kidney-micro dx | 3 | | | | | |
| 016.04 | TB of kidney-cult dx | 3 | | | | | |
| 016.05 | TB of kidney-histo dx | 3 | | | | | |
| 016.06 | TB of kidney-oth test | 3 | | | | | |
| 016.10 | TB of bladder-unspec | 3 | | | | | |
| 016.11 | TB of bladder-no exam | 3 | | | | | |
| 016.12 | TB of bladder-exam unkn | 3 | | | | | |
| 016.13 | TB of bladder-micro dx | 3 | | | | | |
| 016.14 | TB of bladder-cult dx | 3 | | | | | |
| 016.15 | TB of bladder-histo dx | 3 | | | | | |
| 016.16 | TB of bladder-oth test | 3 | | | | | |
| 016.20 | TB of ureter-unspec | 3 | | | | | |
| 016.21 | TB of ureter-no exam | 3 | | | | | |
| 016.22 | TB of ureter-exam unkn | 3 | | | | | |
| 016.23 | TB of ureter-micro dx | 3 | | | | | |
| 016.24 | TB of ureter-cult dx | 3 | | | | | |
| 016.25 | TB of ureter-histo dx | 3 | | | | | |
| 016.26 | TB of ureter-oth test | 3 | | | | | |
| 016.30 | TB urinary NEC-unspec | 3 | | | | | |
| 016.31 | TB urinary NEC-no exam | 3 | | | | | |
| 016.32 | TB urinary NEC-exam unkn | 3 | | | | | |
| 016.33 | TB urinary NEC-micro dx | 3 | | | | | |
| 016.34 | TB urinary NEC-cult dx | 3 | | | | | |
| 016.35 | TB urinary NEC-histo dx | 3 | | | | | |
| 016.36 | TB urinary NEC-oth test | 3 | | | | | |
| 016.40 | TB epididymis-unspec | 3 | | | | | |
| 016.41 | TB epididymis-no exam | 3 | | | | | |
| 016.42 | TB epididymis-exam unkn | 3 | | | | | |
| 016.43 | TB epididymis-micro dx | 3 | | | | | |
| 016.44 | TB epididymis-cult dx | 3 | | | | | |
| 016.45 | TB epididymis-histo dx | 3 | | | | | |
| 016.46 | TB epididymis-oth test | 3 | | | | | |
| 016.50 | TB male genit NEC-unspec | 3 | | | | | |
| 016.51 | TB male gen NEC-no exam | 3 | | | | | |
| 016.52 | TB male gen NEC-ex unkn | 3 | | | | | |
| 016.53 | TB male gen NEC-micro dx | 3 | | | | | |
| 016.54 | TB male gen NEC-cult dx | 3 | | | | | |
| 016.55 | TB male gen NEC-histo dx | 3 | | | | | |
| 016.56 | TB male gen NEC-oth test | 3 | | | | | |
| 016.60 | TB ovary & tube-unspec | 3 | | | | | |
| 016.61 | TB ovary & tube-no exam | 3 | | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table

(No changes with Version 2.70)

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|--------------------------|------|---------------|-------|-------------|------------------|--------------|
| 016.62 | TB ovary/tube-exam unkn | 3 | | | | | |
| 016.63 | TB ovary & tube-micro dx | 3 | | | | | |
| 016.64 | TB ovary & tube-cult dx | 3 | | | | | |
| 016.65 | TB ovary & tube-histo dx | 3 | | | | | |
| 016.66 | TB ovary & tube-oth test | 3 | | | | | |
| 016.70 | TB female gen NEC-unspec | 3 | | | | | |
| 016.71 | TB fem gen NEC-no exam | 3 | | | | | |
| 016.72 | TB fem gen NEC-exam unkn | 3 | | | | | |
| 016.73 | TB fem gen NEC-micro dx | 3 | | | | | |
| 016.74 | TB fem gen NEC-cult dx | 3 | | | | | |
| 016.75 | TB fem gen NEC-histo dx | 3 | | | | | |
| 016.76 | TB fem gen NEC-oth test | 3 | | | | | |
| 016.90 | Gu TB NOS-unspec | 3 | | | | | |
| 016.91 | Gu TB NOS-no exam | 3 | | | | | |
| 016.92 | Gu TB NOS-exam unkn | 3 | | | | | |
| 016.93 | Gu TB NOS-micro dx | 3 | | | | | |
| 016.94 | Gu TB NOS-cult dx | 3 | | | | | |
| 016.95 | Gu TB NOS-histo dx | 3 | | | | | |
| 016.96 | Gu TB NOS-oth test | 3 | | | | | |
| 017.00 | TB skin/subcutan-unspec | 3 | | | | | |
| 017.01 | TB skin/subcut-no exam | 3 | | | | | |
| 017.02 | TB skin/subcut-exam unkn | 3 | | | | | |
| 017.03 | TB skin/subcut-micro dx | 3 | | | | | |
| 017.04 | TB skin/subcut-cult dx | 3 | | | | | |
| 017.05 | TB skin/subcut-histo dx | 3 | | | | | |
| 017.06 | TB skin/subcut-oth test | 3 | | | | | |
| 017.10 | Erythema nodos tb-unspec | 3 | | | | | |
| 017.11 | Erythem nodos tb-no exam | 3 | | | | | |
| 017.12 | Erythem nod tb-exam unkn | 3 | | | | | |
| 017.13 | Erythem nod tb-micro dx | 3 | | | | | |
| 017.14 | Erythem nodos tb-cult dx | 3 | | | | | |
| 017.15 | Erythem nod tb-histo dx | 3 | | | | | |
| 017.16 | Erythem nod tb-oth test | 3 | | | | | |
| 017.20 | TB periph lymph-unspec | 3 | | | | | |
| 017.21 | TB periph lymph-no exam | 3 | | | | | |
| 017.22 | TB periph lymph-exam unk | 3 | | | | | |
| 017.23 | TB periph lymph-micro dx | 3 | | | | | |
| 017.24 | TB periph lymph-cult dx | 3 | | | | | |
| 017.25 | TB periph lymph-histo dx | 3 | | | | | |
| 017.26 | TB periph lymph-oth test | 3 | | | | | |
| 017.30 | TB of eye-unspec | 3 | | | | | |
| 017.31 | TB of eye-no exam | 3 | | | | | |
| 017.32 | TB of eye-exam unkn | 3 | | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table

(No changes with Version 2.70)

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|--------------------------|------|---------------|-------|-------------|------------------|--------------|
| 017.33 | TB of eye-micro dx | 3 | | | | | |
| 017.34 | TB of eye-cult dx | 3 | | | | | |
| 017.35 | TB of eye-histo dx | 3 | | | | | |
| 017.36 | TB of eye-oth test | 3 | | | | | |
| 017.40 | TB of ear-unspec | 3 | | | | | |
| 017.41 | TB of ear-no exam | 3 | | | | | |
| 017.42 | TB of ear-exam unkn | 3 | | | | | |
| 017.43 | TB of ear-micro dx | 3 | | | | | |
| 017.44 | TB of ear-cult dx | 3 | | | | | |
| 017.45 | TB of ear-histo dx | 3 | | | | | |
| 017.46 | TB of ear-oth test | 3 | | | | | |
| 017.50 | TB of thyroid-unspec | 3 | | | | | |
| 017.51 | TB of thyroid-no exam | 3 | | | | | |
| 017.52 | TB of thyroid-exam unkn | 3 | | | | | |
| 017.53 | TB of thyroid-micro dx | 3 | | | | | |
| 017.54 | TB of thyroid-cult dx | 3 | | | | | |
| 017.55 | TB of thyroid-histo dx | 3 | | | | | |
| 017.56 | TB of thyroid-oth test | 3 | | | | | |
| 017.60 | TB of adrenal-unspec | 3 | | | | | |
| 017.61 | TB of adrenal-no exam | 3 | | | | | |
| 017.62 | TB of adrenal-exam unkn | 3 | | | | | |
| 017.63 | TB of adrenal-micro dx | 3 | | | | | |
| 017.64 | TB of adrenal-cult dx | 3 | | | | | |
| 017.65 | TB of adrenal-histo dx | 3 | | | | | |
| 017.70 | TB of spleen-unspec | 3 | | | | | |
| 017.71 | TB of spleen-no exam | 3 | | | | | |
| 017.72 | TB of spleen-exam unkn | 3 | | | | | |
| 017.73 | TB of spleen-micro dx | 3 | | | | | |
| 017.74 | TB of spleen-cult dx | 3 | | | | | |
| 017.75 | TB of spleen-histo dx | 3 | | | | | |
| 017.76 | TB of spleen-oth test | 3 | | | | | |
| 017.80 | TB esophagus-unspec | 3 | | | | | |
| 017.81 | TB esophagus-no exam | 3 | | | | | |
| 017.82 | TB esophagus-exam unkn | 3 | | | | | |
| 017.83 | TB esophagus-micro dx | 3 | | | | | |
| 017.84 | TB esophagus-cult dx | 3 | | | | | |
| 017.85 | TB esophagus-histo dx | 3 | | | | | |
| 017.86 | TB esophagus-oth test | 3 | | | | | |
| 017.90 | TB of organ NEC-unspec | 3 | | | | | |
| 017.91 | TB of organ NEC-no exam | 3 | | | | | |
| 017.92 | TB organ NEC-exam unkn | 3 | | | | | |
| 017.93 | TB of organ NEC-micro dx | 3 | | | | | |
| 017.94 | TB of organ NEC-cult dx | 3 | | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table

(No changes with Version 2.70)

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|--------------------------|------|---------------|-------|-------------|------------------|--------------|
| 017.95 | TB of organ NEC-histo dx | 3 | | | | | |
| 017.96 | TB of organ NEC-oth test | 3 | | | | | |
| 018.00 | Acute miliary tb-unspec | 3 | | | | | |
| 018.01 | Acute miliary tb-no exam | 3 | | | | | |
| 018.02 | Ac miliary tb-exam unkn | 3 | | | | | |
| 018.03 | Ac miliary tb-micro dx | 3 | | | | | |
| 018.04 | Acute miliary tb-cult dx | 3 | | | | | |
| 018.05 | Ac miliary tb-histo dx | 3 | | | | | |
| 018.06 | Ac miliary tb-oth test | 3 | | | | | |
| 018.80 | Miliary TB NEC-unspec | 3 | | | | | |
| 018.81 | Miliary TB NEC-no exam | 3 | | | | | |
| 018.82 | Miliary TB NEC-exam unkn | 3 | | | | | |
| 018.83 | Miliary TB NEC-micro dx | 3 | | | | | |
| 018.84 | Miliary TB NEC-cult dx | 3 | | | | | |
| 018.85 | Miliary TB NEC-histo dx | 3 | | | | | |
| 018.86 | Miliary TB NEC-oth test | 3 | | | | | |
| 018.90 | Miliary TB NOS-unspec | 3 | | | | | |
| 018.91 | Miliary TB NOS-no exam | 3 | | | | | |
| 018.92 | Miliary TB NOS-exam unkn | 3 | | | | | |
| 018.93 | Miliary TB NOS-micro dx | 3 | | | | | |
| 018.94 | Miliary TB NOS-cult dx | 3 | | | | | |
| 018.95 | Miliary TB NOS-histo dx | 3 | | | | | |
| 018.96 | Miliary TB NOS-oth test | 3 | | | | | |
| 027.0 | Listeriosis | 3 | | | | | |
| 027.1 | Erysipelothrix infection | 3 | | | | | |
| 027.2 | Pasteurellosis | 3 | | | | | |
| 027.8 | Zoonotic bact dis NEC | 3 | | | | | |
| 027.9 | Zoonotic bact dis NOS | 3 | | | | | |
| 036.0 | Meningococcal meningitis | 3 | 03,05 | | | | |
| 036.2 | Meningococcemia | 3 | 03,05 | | | | |
| 036.3 | Meningococc adrenal synd | 3 | 05 | | | | |
| 036.40 | Meningococc carditis NOS | 3 | 14 | | | | |
| 036.42 | Meningococc endocarditis | 3 | 14 | | | | |
| 036.43 | Meningococc myocarditis | 3 | 14 | | | | |
| 037. | Tetanus | 3 | 06 | | | | |
| 038.0 | Streptococcal septicemia | 3 | | | | | |
| 038.10 | Staphylcocc septicem NOS | 3 | | | | | |
| 038.11 | Meth susc Staph aur sept | 3 | | | | | |
| 038.12 | MRSA septicemia | 3 | | | | | |
| 038.19 | Staphylcocc septicem NEC | 3 | | | | | |
| 038.2 | Pneumococcal septicemia | 3 | | | | | |
| 038.3 | Anaerobic septicemia | 3 | | | | | |
| 038.40 | Gram-neg septicemia NOS | 3 | | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table**(No changes with Version 2.70)**

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|---------------------------|------|---------------|-------|-------------|------------------|--------------|
| 038.41 | H. influenzae septicemia | 3 | | | | | |
| 038.42 | E coli septicemia | 3 | | | | | |
| 038.43 | Pseudomonas septicemia | 3 | | | | | |
| 038.44 | Serratia septicemia | 3 | | | | | |
| 038.49 | Gram-neg septicemia NEC | 3 | | | | | |
| 038.8 | Septicemia NEC | 3 | | | | | |
| 038.9 | Septicemia NOS | 3 | | | | | |
| 042. | Human immuno virus dis | 3 | | | | | |
| 047.8 | Viral meningitis NEC | 3 | 03,05 | | | | |
| 047.9 | Viral meningitis NOS | 3 | 03,05 | | | | |
| 048. | Oth enteroviral cns dis | 3 | 03,05 | | | | |
| 049.0 | Lymphocytic choriomening | 3 | 03,05 | | | | |
| 049.9 | Viral encephalitis NOS | 3 | 03 | | | | |
| 052.0 | Postvaricella encephalit | 3 | 03 | | | | |
| 052.1 | Varicella pneumonitis | 3 | 15 | | | | |
| 053.0 | Herpes zoster meningitis | 3 | 03,05 | | | | |
| 053.13 | Postherpes polyneuropath | 3 | 06 | | | | |
| 054.3 | Herpetic encephalitis | 3 | 03 | | | | |
| 054.5 | Herpetic septicemia | 3 | 03 | | | | |
| 054.72 | H simplex meningitis | 3 | 03,05 | | | | |
| 054.74 | Herpes simplex myelitis | 3 | | | | | |
| 054.79 | H simplex complicat NEC | 3 | | | | | |
| 055.0 | Postmeasles encephalitis | 3 | 03 | | | | |
| 055.1 | Postmeasles pneumonia | 3 | 15 | | | | |
| 058.21 | Human herpesvir 6 enceph | 3 | 03 | | | | |
| 058.29 | Human herpesvr encph NEC | 3 | 03 | | | | |
| 070.20 | Hpt B acte coma wo dlta | 3 | 03 | | | | |
| 070.21 | Hpt B acte coma w dlta | 3 | 03 | | | | |
| 070.22 | Hpt B chrn coma wo dlta | 3 | 03 | | | | |
| 070.23 | Hpt B chrn coma w dlta | 3 | 03 | | | | |
| 070.41 | Hpt C acute w hepat Coma | 3 | 03 | | | | |
| 070.42 | Hpt dlt wo b w hpt coma | 3 | 03 | | | | |
| 070.43 | Hpt E w hepat Coma | 3 | 03 | | | | |
| 070.44 | Chrn c hpt C w hepat Coma | 3 | 03 | | | | |
| 070.49 | Oth vrl hepat w hpt coma | 3 | 03 | | | | |
| 070.6 | Viral hepat NOS w coma | 3 | 03 | | | | |
| 070.71 | Hpt C w hepatic coma NOS | 3 | 03 | | | | |
| 072.1 | Mumps meningitis | 3 | 03,05 | | | | |
| 072.2 | Mumps encephalitis | 3 | 03 | | | | |
| 072.3 | Mumps pancreatitis | 3 | | | | | |
| 079.50 | Retrovirus, unspecified | 3 | | | | | |
| 079.51 | Htlv-1 infection oth dis | 3 | 06 | | | | |
| 079.52 | Htlv-ii infectn oth dis | 3 | 06 | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table

(No changes with Version 2.70)

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|---------------------------|------|---------------|-------|-------------|------------------|--------------|
| 079.53 | Hiv-2 infection oth dis | 3 | | | | | |
| 079.59 | Oth specfied retrovirus | 3 | | | | | |
| 090.42 | Congen syph meningitis | 3 | 03,05 | | | | |
| 093.20 | Syphil endocarditis NOS | 3 | 14 | | | | |
| 093.82 | Syphilitic myocarditis | 3 | 14 | | | | |
| 094.2 | Syphilitic meningitis | 3 | 03,05 | | | | |
| 094.87 | Syph rupt cereb aneurysm | 3 | 01,03 | | | | |
| 098.89 | Gonococcal inf site NEC | 3 | | | | | |
| 112.4 | Candidiasis of lung | 3 | 15 | | | | |
| 112.5 | Disseminated candidiasis | 3 | | | | | |
| 112.81 | Candidal endocarditis | 3 | 14 | | | | |
| 112.83 | Candidal meningitis | 3 | 03,05 | | | | |
| 112.84 | Candidal esophagitis | 3 | | | | | |
| 114.2 | Coccidioidal meningitis | 3 | 03,05 | | | | |
| 115.00 | Histoplasma capsulat NOS | 3 | 15 | | | | |
| 115.01 | Histoplasma capsul mening | 3 | 03,05 | | | | |
| 115.02 | Histoplasma capsul retina | 3 | | | | | |
| 115.03 | Histoplasma caps pericard | 3 | 14 | | | | |
| 115.04 | Histoplasma caps endocard | 3 | 14 | | | | |
| 115.05 | Histoplasma caps pneumon | 3 | 15 | | | | |
| 115.09 | Histoplasma capsulat NEC | 3 | 15 | | | | |
| 115.10 | Histoplasma duboisii NOS | 3 | | | | | |
| 115.11 | Histoplasma dubois mening | 3 | 03,05 | | | | |
| 115.12 | Histoplasma dubois retina | 3 | | | | | |
| 115.13 | Histoplasma dub pericard | 3 | 14 | | | | |
| 115.14 | Histoplasma dub endocard | 3 | 14 | | | | |
| 115.15 | Histoplasma dub pneumonia | 3 | 15 | | | | |
| 115.19 | Histoplasma duboisii NEC | 3 | 15 | | | | |
| 115.90 | Histoplasmosis NOS | 3 | 15 | | | | |
| 115.91 | Histoplasmosis meningit | 3 | 03,05 | | | | |
| 115.92 | Histoplasmosis retinitis | 3 | | | | | |
| 115.93 | Histoplasmosis pericard | 3 | 14 | | | | |
| 115.94 | Histoplasmosis endocard | 3 | 14 | | | | |
| 115.95 | Histoplasmosis pneumonia | 3 | 15 | | | | |
| 115.99 | Histoplasmosis NEC | 3 | 15 | | | | |
| 130.0 | Toxoplasma meningoenceph | 3 | 03,05 | | | | |
| 130.3 | Toxoplasma myocarditis | 3 | 14 | | | | |
| 130.4 | Toxoplasma pneumonitis | 3 | 15 | | | | |
| 136.3 | Pneumocystosis | 3 | 15 | | | | |
| 139.0 | Late eff viral encephal | 3 | 03 | | | | |
| 204.00 | Ac lym leuk wo achv rmsn | 3 | | | | | |
| 204.02 | Act lym leuk in relapse | 3 | | | | | |
| 205.00 | Ac myl leuk wo achv rmsn | 3 | | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table

(No changes with Version 2.70)

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|--------------------------|------|---------------|-------|-------------|------------------|--------------|
| 205.02 | Act myel leuk in relapse | 3 | | | | | |
| 206.00 | Ac mono leu wo achv rsmn | 3 | | | | | |
| 206.02 | Act mono leuk in relapse | 3 | | | | | |
| 207.00 | Ac erth/erlk wo ach rsmn | 3 | | | | | |
| 207.02 | Ac erth/erylk in relapse | 3 | | | | | |
| 208.00 | Ac leu un cl wo ach rsmn | 3 | | | | | |
| 208.02 | Ac leuk uns cl relapse | 3 | | | | | |
| 249.40 | Sec DM renl nt st uncntr | 3 | | | | | |
| 249.41 | Sec DM renal uncontrld | 3 | | | | | |
| 249.50 | Sec DM ophth nt st uncn | 3 | | | | | |
| 249.51 | Sec DM ophth uncontrld | 3 | | | | | |
| 249.60 | Sec DM neuro nt st uncn | 3 | | | | | |
| 249.61 | Sec DM neuro uncontrld | 3 | | | | | |
| 249.70 | Sec DM circ nt st uncntr | 3 | | | | | |
| 249.71 | Sec DM circ uncontrld | 3 | | | | | |
| 249.80 | Sec DM oth nt st uncontr | 3 | | | | | |
| 249.81 | Sec DM other uncontrld | 3 | | | | | |
| 249.91 | Sec DM unsp uncontrold | 3 | | | | | |
| 250.01 | DMI wo cmp nt st uncntrl | 3 | | | | | |
| 250.40 | DMII renl nt st uncntrld | 3 | | | | | |
| 250.41 | DMI renl nt st uncntrld | 3 | | | | | |
| 250.42 | DMII renal uncntrld | 3 | | | | | |
| 250.43 | DMI renal uncntrld | 3 | | | | | |
| 250.50 | DMII ophth nt st uncntrl | 3 | | | | | |
| 250.51 | DMI ophth nt st uncntrld | 3 | | | | | |
| 250.52 | DMII ophth uncntrld | 3 | | | | | |
| 250.53 | DMI ophth uncntrld | 3 | | | | | |
| 250.60 | DMII neuro nt st uncntrl | 3 | 06 | | | | |
| 250.61 | DMI neuro nt st uncntrld | 3 | 06 | | | | |
| 250.62 | DMII neuro uncntrld | 3 | 06 | | | | |
| 250.63 | DMI neuro uncntrld | 3 | 06 | | | | |
| 250.70 | DMII circ nt st uncntrld | 3 | | | | | |
| 250.71 | DMI circ nt st uncntrld | 3 | | | | | |
| 250.72 | DMII circ uncntrld | 3 | | | | | |
| 250.73 | DMI circ uncntrld | 3 | | | | | |
| 250.80 | DMII oth nt st uncntrld | 3 | | | | | |
| 250.81 | DMI oth nt st uncntrld | 3 | | | | | |
| 250.82 | DMII oth uncntrld | 3 | | | | | |
| 250.83 | DMI oth uncntrld | 3 | | | | | |
| 250.91 | DMI unspf nt st uncntrld | 3 | | | | | |
| 250.92 | DMII unspf uncntrld | 3 | | | | | |
| 277.00 | Cystic fibros w/o ileus | 3 | 15 | | | | |
| 277.01 | Cystic fibrosis w ileus | 3 | 15 | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table

(No changes with Version 2.70)

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|---------------------------|------|---------------|-------|-------------|------------------|--------------|
| 277.02 | Cystic fibros w pul man | 3 | 15 | | | | |
| 277.03 | Cystic fibrosis w GI man | 3 | 15 | | | | |
| 277.09 | Cystic fibrosis NEC | 3 | 15 | | | | |
| 278.01 | Morbid obesity | 3 | | | | | |
| 282.60 | Sickle cell disease NOS | 3 | | | | | |
| 282.61 | Hb-SS disease w/o crisis | 3 | | | | | |
| 282.62 | Hb-SS disease w crisis | 3 | | | | | |
| 282.63 | Hb-SS/hb-C dis w/o crsis | 3 | | | | | |
| 282.64 | Hb-S/Hb-C dis w crisis | 3 | | | | | |
| 282.68 | Hb-S dis w/o crisis NEC | 3 | | | | | |
| 282.69 | Hb-SS dis NEC w crisis | 3 | | | | | |
| 284.01 | Constitution RBC aplasia | 3 | | | | | |
| 284.09 | Const aplastic anemia NEC | 3 | | | | | |
| 284.11 | Antin chemo indcd pancyt | 3 | | | | | |
| 284.12 | Oth drg indcd pancytopna | 3 | | | | | |
| 284.19 | Other pancytopenia | 3 | | | | | |
| 284.2 | Myelophthisis | 3 | | | | | |
| 284.81 | Red cell aplasia | 3 | | | | | |
| 284.89 | Aplastic anemias NEC | 3 | | | | | |
| 284.9 | Aplastic anemia NOS | 3 | | | | | |
| 285.3 | Anemia d/t antineo chemo | 3 | | | | | |
| 286.0 | Cong factor viii diord | 3 | | | | | |
| 286.1 | Cong factor IX disorder | 3 | | | | | |
| 286.6 | Defibrination syndrome | 3 | | | | | |
| 320.0 | Hemophilus meningitis | 3 | 03,05 | | | | |
| 320.1 | Pneumococcal meningitis | 3 | 03,05 | | | | |
| 320.2 | Streptococcal meningitis | 3 | 03,05 | | | | |
| 320.3 | Staphylococc meningitis | 3 | 03,05 | | | | |
| 320.7 | Mening in oth bact dis | 3 | 03,05 | | | | |
| 320.81 | Anaerobic meningitis | 3 | 03,05 | | | | |
| 320.82 | Mningits gram-neg bct NEC | 3 | 03,05 | | | | |
| 320.89 | Meningitis oth spcf bact | 3 | 03,05 | | | | |
| 320.9 | Bacterial meningitis NOS | 3 | 03,05 | | | | |
| 321.0 | Cryptococcal meningitis | 3 | 03,05 | | | | |
| 321.1 | Mening in oth fungal dis | 3 | 03,05 | | | | |
| 321.2 | Mening in oth viral dis | 3 | 03,05 | | | | |
| 321.3 | Trypanosomiasis meningit | 3 | 03,05 | | | | |
| 321.4 | Meningit d/t sarcoidosis | 3 | 03,05 | | | | |
| 321.8 | Mening in oth nonbac dis | 3 | 03,05 | | | | |
| 322.0 | Nonpyogenic meningitis | 3 | 03,05 | | | | |
| 322.2 | Chronic meningitis | 3 | 03,05 | | | | |
| 322.9 | Meningitis NOS | 3 | 03,05 | | | | |
| 323.61 | Inf ac dis encephalomyel | 3 | 03 | | | | |

Notes:

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Appendix C: Comorbidity Tier Code Lookup Table

(No changes with Version 2.70)

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|---------------------------|------|---------------|-------|-------------|------------------|--------------|
| 323.62 | Postinf encephalitis NEC | 3 | 03 | | | | |
| 323.63 | Postinfectious myelitis | 3 | 03 | | | | |
| 323.81 | Enceph & encephalo NEC | 3 | 03 | | | | |
| 323.82 | Myelitis cause NEC | 3 | 03 | | | | |
| 323.9 | Encephalitis NOS | 3 | 03 | | | | |
| 324.0 | Intracranial abscess | 3 | 03 | | | | |
| 324.1 | Intraspinal abscess | 3 | 03 | | | | |
| 324.9 | Cns abscess NOS | 3 | 03 | | | | |
| 341.20 | Acute myelitis NOS | 3 | 03 | | | | |
| 341.21 | Acute myelitis oth cond | 3 | 03 | | | | |
| 341.22 | Idiopathc trans myelitis | 3 | 03 | | | | |
| 342.00 | Flccd hmiplga unspf side | 3 | 01 | | | | |
| 342.01 | Flccd hmiplga domnt side | 3 | 01 | | | | |
| 342.02 | Flccd hmiplg nondmnt sde | 3 | 01 | | | | |
| 342.10 | Spstc hmiplga unspf side | 3 | 01 | | | | |
| 342.11 | Spstc hmiplga domnt side | 3 | 01 | | | | |
| 342.12 | Spstc hmiplg nondmnt sde | 3 | 01 | | | | |
| 342.80 | Ot sp hmiplga unspf side | 3 | 01 | | | | |
| 342.81 | Ot sp hmiplga domnt side | 3 | 01 | | | | |
| 342.82 | Ot sp hmiplg nondmnt sde | 3 | 01 | | | | |
| 342.90 | Unsp hemiplga unspf side | 3 | 01 | | | | |
| 342.91 | Unsp hemiplga domnt side | 3 | 01 | | | | |
| 342.92 | Unsp hmiplga nondmnt sde | 3 | 01 | | | | |
| 345.11 | Gen cnv epil w intr epil | 3 | 02,03 | | | | |
| 345.3 | Grand mal status | 3 | 02,03 | | | | |
| 348.1 | Anoxic brain damage | 3 | 02,03 | | | | |
| 357.2 | Neuropathy in diabetes | 3 | 06 | | | | |
| 376.01 | Orbital cellulitis | 3 | | | | | |
| 376.02 | Orbital periostitis | 3 | | | | | |
| 376.03 | Orbital osteomyelitis | 3 | | | | | |
| 398.0 | Rheumatic myocarditis | 3 | 14 | | | | |
| 403.01 | Mal hyp kid w cr kid V | 3 | | | | | |
| 404.01 | Mal hyp ht/kd I-IV w hf | 3 | 14 | | | | |
| 404.03 | Mal hyp ht/kd stg V w hf | 3 | 14 | | | | |
| 415.11 | Iatrogen pulm emb/infarc | 3 | 15 | | | | |
| 415.12 | Septic pulmonary embolism | 3 | 15 | | | | |
| 415.13 | Saddle embol pulmon art | 3 | 15 | | | | |
| 415.19 | Pulm embol/infarct NEC | 3 | 15 | | | | |
| 416.2 | Chr pulmonary embolism | 3 | 15 | | | | |
| 421.0 | Ac/subac bact endocard | 3 | 14 | | | | |
| 421.1 | Ac endocardit in oth dis | 3 | 14 | | | | |
| 421.9 | Ac/subac endocardit NOS | 3 | 14 | | | | |
| 422.0 | Ac myocardit in oth dis | 3 | 14 | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table

(No changes with Version 2.70)

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|---------------------------|------|---------------|-------|-------------|------------------|--------------|
| 422.90 | Acute myocarditis NOS | 3 | 14 | | | | |
| 422.91 | Idiopathic myocarditis | 3 | 14 | | | | |
| 422.92 | Septic myocarditis | 3 | 14 | | | | |
| 422.93 | Toxic myocarditis | 3 | 14 | | | | |
| 422.99 | Acute myocarditis NEC | 3 | 14 | | | | |
| 427.41 | Ventricular fibrillation | 3 | 14 | | | | |
| 427.5 | Cardiac arrest | 3 | 14 | | | | |
| 428.1 | Left heart failure | 3 | 14 | | | | |
| 428.20 | Systolic hrt failure NOS | 3 | 14 | | | | |
| 428.21 | Ac systolic hrt failure | 3 | 14 | | | | |
| 428.22 | Chr systolic hrt failure | 3 | 14 | | | | |
| 428.23 | Ac on chr syst hrt fail | 3 | 14 | | | | |
| 428.30 | Diastolic hrt failure NOS | 3 | 14 | | | | |
| 428.31 | Ac diastolic hrt failure | 3 | 14 | | | | |
| 428.32 | Chr diastolic hrt fail | 3 | 14 | | | | |
| 428.33 | Ac on chr diast hrt fail | 3 | 14 | | | | |
| 428.40 | Syst/diast hrt fail NOS | 3 | 14 | | | | |
| 428.41 | Ac syst/diastol hrt fail | 3 | 14 | | | | |
| 428.42 | Chr syst/diastl hrt fail | 3 | 14 | | | | |
| 428.43 | Ac/chr syst/dia hrt fail | 3 | 14 | | | | |
| 430. | Subarachnoid hemorrhage | 3 | 01,02,03 | | | | |
| 431. | Intracerebral hemorrhage | 3 | 01,02,03 | | | | |
| 432.0 | Nontraum extradural hem | 3 | 01,02,03 | | | | |
| 432.1 | Subdural hemorrhage | 3 | 01,02,03 | | | | |
| 433.01 | Ocl bslr art w infrct | 3 | 01 | | | | |
| 433.11 | Ocl crtd art w infrct | 3 | 01 | | | | |
| 433.21 | Ocl vrtb art w infrct | 3 | 01 | | | | |
| 433.31 | Ocl mlt bi art w infrct | 3 | 01 | | | | |
| 433.81 | Ocl spcf art w infrct | 3 | 01 | | | | |
| 433.91 | Ocl art NOS w infrct | 3 | 01 | | | | |
| 434.01 | Crbl thrmb w infrct | 3 | 01 | | | | |
| 434.11 | Crbl emblsm w infrct | 3 | 01 | | | | |
| 434.91 | Crbl art ocl NOS w infrc | 3 | 01 | | | | |
| 436. | Cva | 3 | 01 | | | | |
| 440.23 | Ath ext ntv art ulcrctn | 3 | 10,11 | | | | |
| 440.24 | Ath ext ntv art gngrene | 3 | 10,11 | | | | |
| 440.4 | Chr tot occl art extrem | 3 | 10,11 | | | | |
| 441.00 | Dsct of aorta unsp site | 3 | | | | | |
| 441.01 | Dsct of thoracic aorta | 3 | 05 | | | | |
| 441.02 | Dsct of abdominal aorta | 3 | 05 | | | | |
| 441.03 | Dsct of thoracoabd aorta | 3 | 05 | | | | |
| 441.1 | Ruptur thoracic aneurysm | 3 | 05 | | | | |
| 441.3 | Rupt abd aortic aneurysm | 3 | 05 | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table
(No changes with Version 2.70)

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|---------------------------|------|---------------|-------|-------------|------------------|--------------|
| 441.5 | Rupt aortic aneurysm NOS | 3 | 05 | | | | |
| 441.6 | Thoracoabd aneurysm rupt | 3 | 05 | | | | |
| 446.3 | Lethal midline granuloma | 3 | | | | | |
| 449. | Septic arterial embolism | 3 | | | | | |
| 452. | Portal vein thrombosis | 3 | | | | | |
| 453.0 | Budd-chiari syndrome | 3 | | | | | |
| 453.1 | Thrombophlebitis migrans | 3 | | | | | |
| 453.2 | Oth inf vena cava thromb | 3 | | | | | |
| 453.3 | Renal vein thrombosis | 3 | | | | | |
| 464.11 | Ac tracheitis w obstruct | 3 | 15 | | | | |
| 464.21 | Ac laryngotrach w obstr | 3 | 15 | | | | |
| 464.31 | Ac epiglottitis w obstr | 3 | 15 | | | | |
| 466.11 | Acu broncholitits d/t RSV | 3 | 15 | | | | |
| 466.19 | Acu brnchlts d/t oth org | 3 | 15 | | | | |
| 478.30 | Vocal cord paralysis NOS | 3 | 15 | | | | |
| 480.0 | Adenoviral pneumonia | 3 | 15 | | | | |
| 480.1 | Resp syncyt viral pneum | 3 | 15 | | | | |
| 480.2 | Parinfluenza viral pneum | 3 | 15 | | | | |
| 480.8 | Viral pneumonia NEC | 3 | 15 | | | | |
| 480.9 | Viral pneumonia NOS | 3 | 15 | | | | |
| 481. | Pneumococcal pneumonia | 3 | 15 | | | | |
| 482.0 | K. pneumoniae pneumonia | 3 | 15 | | | | |
| 482.1 | Pseudomonal pneumonia | 3 | 15 | | | | |
| 482.2 | H.influenzae pneumonia | 3 | 15 | | | | |
| 482.30 | Streptococcal pneumn NOS | 3 | 15 | | | | |
| 482.31 | Pneumonia strptococcus a | 3 | 15 | | | | |
| 482.32 | Pneumonia strptococcus b | 3 | 15 | | | | |
| 482.39 | Pneumonia oth strep | 3 | 15 | | | | |
| 482.40 | Staphylococcal pneu NOS | 3 | 15 | | | | |
| 482.41 | Meth sus pneum d/t Staph | 3 | 15 | | | | |
| 482.42 | Meth res pneu d/t Staph | 3 | 15 | | | | |
| 482.49 | Staph pneumonia NEC | 3 | 15 | | | | |
| 482.81 | Pneumonia anaerobes | 3 | 15 | | | | |
| 482.82 | Pneumonia e coli | 3 | 15 | | | | |
| 482.83 | Pneumo oth grm-neg bact | 3 | 15 | | | | |
| 482.84 | Legionnaires' disease | 3 | 15 | | | | |
| 482.89 | Pneumonia oth spcf bact | 3 | 15 | | | | |
| 482.9 | Bacterial pneumonia NOS | 3 | 15 | | | | |
| 483.0 | Pneu mycplsm pneumoniae | 3 | 15 | | | | |
| 483.1 | Pneumonia d/t chlamydia | 3 | 15 | | | | |
| 483.8 | Pneumon oth spec orgnsm | 3 | 15 | | | | |
| 484.1 | Pneum w cytomeg incl dis | 3 | 15 | | | | |
| 484.3 | Pneumonia in whoop cough | 3 | 15 | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table
(No changes with Version 2.70)

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|---------------------------|------|---------------|-------|-------------|------------------|--------------|
| 484.5 | Pneumonia in anthrax | 3 | 15 | | | | |
| 484.6 | Pneum in aspergillosis | 3 | 15 | | | | |
| 484.7 | Pneum in oth sys mycoses | 3 | 15 | | | | |
| 484.8 | Pneum in infect dis NEC | 3 | 15 | | | | |
| 485. | Bronchopneumonia org NOS | 3 | 15 | | | | |
| 486. | Pneumonia, organism NOS | 3 | 15 | | | | |
| 487.0 | Influenza with pneumonia | 3 | 15 | | | | |
| 488.01 | Flu dt iden avian w pneu | 3 | 15 | | | | |
| 488.02 | Flu dt avian w oth resp | 3 | 15 | | | | |
| 488.09 | Flu dt avian manifest NEC | 3 | 15 | | | | |
| 488.11 | Flu dt 2009 H1N1 w pneu | 3 | 15 | | | | |
| 488.12 | Flu-2009 H1N1 w oth resp | 3 | 15 | | | | |
| 488.19 | Flu-2009 H1N1 w oth man | 3 | 15 | | | | |
| 488.81 | Flu dt nvl A vrs w pneu | 3 | 15 | | | | |
| 506.0 | Fum/vapor bronc/pneumon | 3 | 15 | | | | |
| 506.1 | Fum/vapor ac pulm edema | 3 | 15 | | | | |
| 507.0 | Food/vomit pneumonitis | 3 | 15 | | | | |
| 507.1 | Oil/essence pneumonitis | 3 | 15 | | | | |
| 507.8 | Solid/liq pneumonit NEC | 3 | 15 | | | | |
| 510.0 | Empyema with fistula | 3 | 15 | | | | |
| 510.9 | Empyema w/o fistula | 3 | 15 | | | | |
| 511.1 | Bact pleur/effus not TB | 3 | 15 | | | | |
| 513.0 | Abscess of lung | 3 | 15 | | | | |
| 513.1 | Abscess of mediastinum | 3 | 15 | | | | |
| 514. | Pulm congest/hypostasis | 3 | 15 | | | | |
| 515. | Postinflam pulm fibrosis | 3 | 15 | | | | |
| 516.31 | Idiopath pulmon fibrosis | 3 | 15 | | | | |
| 516.32 | Idio non-spec inter pneu | 3 | 15 | | | | |
| 516.33 | Acute interstitial pneum | 3 | 15 | | | | |
| 516.34 | Resp brncio interst lung | 3 | 15 | | | | |
| 517.3 | Acute chest syndrome | 3 | | | | | |
| 518.3 | Pulmonary eosinophilia | 3 | 15 | | | | |
| 518.51 | Ac resp flr fol trma/srg | 3 | 15 | | | | |
| 518.52 | Ot pul insuf fol trm/srg | 3 | 15 | | | | |
| 518.53 | Ac/chr rsp flr fol tr/srg | 3 | 15 | | | | |
| 518.81 | Acute respiratory failure | 3 | 15 | | | | |
| 519.2 | Mediastinitis | 3 | 15 | | | | |
| 528.3 | Cellulitis/abscess mouth | 3 | | | | | |
| 530.4 | Perforation of esophagus | 3 | 15 | | | | |
| 530.82 | Esophageal hemorrhage | 3 | | | | | |
| 531.00 | Ac stomach ulcer w hem | 3 | | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table**(No changes with Version 2.70)**

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|---------------------------|------|---------------|-------|-------------|------------------|--------------|
| 531.01 | Ac stomach ulc w hem-obst | 3 | | | | | |
| 531.10 | Ac stomach ulcer w perf | 3 | | | | | |
| 531.11 | Ac stom ulc w perf-obst | 3 | | | | | |
| 531.20 | Ac stomach ulc w hem/perf | 3 | | | | | |
| 531.21 | Ac stom ulc hem/perf-obs | 3 | | | | | |
| 531.40 | Chr stomach ulc w hem | 3 | | | | | |
| 531.41 | Chr stom ulc w hem-obstr | 3 | | | | | |
| 531.50 | Chr stomach ulcer w perf | 3 | | | | | |
| 531.51 | Chr stom ulc w perf-obst | 3 | | | | | |
| 531.60 | Chr stomach ulc hem/perf | 3 | | | | | |
| 531.61 | Chr stom ulc hem/perf-ob | 3 | | | | | |
| 532.00 | Ac duodenal ulcer w hem | 3 | | | | | |
| 532.01 | Ac duoden ulc w hem-obst | 3 | | | | | |
| 532.10 | Ac duodenal ulcer w perf | 3 | | | | | |
| 532.11 | Ac duoden ulc perf-obstr | 3 | | | | | |
| 532.20 | Ac duoden ulc w hem/perf | 3 | | | | | |
| 532.21 | Ac duod ulc hem/perf-obs | 3 | | | | | |
| 532.40 | Chr duoden ulcer w hem | 3 | | | | | |
| 532.41 | Chr duoden ulc hem-obstr | 3 | | | | | |
| 532.50 | Chr duoden ulcer w perf | 3 | | | | | |
| 532.51 | Chr duoden ulc perf-obst | 3 | | | | | |
| 532.60 | Chr duoden ulc hem/perf | 3 | | | | | |
| 532.61 | Chr duod ulc hem/perf-ob | 3 | | | | | |
| 533.00 | Ac peptic ulcer w hemorr | 3 | | | | | |
| 533.01 | Ac peptic ulc w hem-obst | 3 | | | | | |
| 533.10 | Ac peptic ulcer w perfor | 3 | | | | | |
| 533.11 | Ac peptic ulc w perf-obs | 3 | | | | | |
| 533.20 | Ac peptic ulc w hem/perf | 3 | | | | | |
| 533.21 | Ac pept ulc hem/perf-obs | 3 | | | | | |
| 533.40 | Chr peptic ulcer w hem | 3 | | | | | |
| 533.41 | Chr peptic ulc w hem-obs | 3 | | | | | |
| 533.50 | Chr peptic ulcer w perf | 3 | | | | | |
| 533.51 | Chr peptic ulc perf-obst | 3 | | | | | |
| 533.60 | Chr pept ulc w hem/perf | 3 | | | | | |
| 533.61 | Chr pept ulc hem/perf-ob | 3 | | | | | |
| 534.00 | Ac marginal ulcer w hem | 3 | | | | | |
| 534.01 | Ac margin ulc w hem-obst | 3 | | | | | |
| 534.10 | Ac marginal ulcer w perf | 3 | | | | | |
| 534.11 | Ac margin ulc w perf-obs | 3 | | | | | |
| 534.20 | Ac margin ulc w hem/perf | 3 | | | | | |
| 534.21 | Ac marg ulc hem/perf-obs | 3 | | | | | |
| 534.40 | Chr marginal ulcer w hem | 3 | | | | | |
| 534.41 | Chr margin ulc w hem-obs | 3 | | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table
(No changes with Version 2.70)

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|---------------------------|------|------------------|-------|----------------|---------------------|-----------------|
| 534.50 | Chr marginal ulc w perf | 3 | | | | | |
| 534.51 | Chr margin ulc perf-obst | 3 | | | | | |
| 534.60 | Chr margin ulc hem/perf | 3 | | | | | |
| 534.61 | Chr marg ulc hem/perf-ob | 3 | | | | | |
| 535.01 | Acute gastritis w hmrhg | 3 | | | | | |
| 535.11 | Atrph gastritis w hmrhg | 3 | | | | | |
| 535.21 | Gstr mcsl hyptr w hmrhg | 3 | | | | | |
| 535.31 | Alchl gstritis w hmrhg | 3 | | | | | |
| 535.41 | Oth spf gastrit w hmrhg | 3 | | | | | |
| 535.51 | Gstr/ddnts NOS w hmrhg | 3 | | | | | |
| 535.61 | Duodenitis w hmrhg | 3 | | | | | |
| 535.71 | Eosinophilc gastrit w hem | 3 | | | | | |
| 537.4 | Gastric/duodenal fistula | 3 | | | | | |
| 537.83 | Angio stm/dudn w hmrhg | 3 | | | | | |
| 537.84 | Dieulafoy les,stom&duod | 3 | | | | | |
| 540.0 | Ac append w peritonitis | 3 | | | | | |
| 557.0 | Ac vasc insuff intestine | 3 | | | | | |
| 562.02 | Dvrtclo sml int w hmrhg | 3 | | | | | |
| 562.03 | Dvrtcli sml int w hmrhg | 3 | | | | | |
| 562.12 | Dvrtclo colon w hmrhg | 3 | | | | | |
| 562.13 | Dvrtcli colon w hmrhg | 3 | | | | | |
| 567.0 | Peritonitis in infec dis | 3 | | | | | |
| 567.1 | Pneumococcal peritonitis | 3 | | | | | |
| 567.21 | Peritonitis (acute) gen | 3 | | | | | |
| 567.22 | Peritoneal abscess | 3 | | | | | |
| 567.23 | Spontan bact peritonitis | 3 | | | | | |
| 567.29 | Suppurat peritonitis NEC | 3 | | | | | |
| 567.38 | Retroperiton abscess NEC | 3 | | | | | |
| 567.39 | Retroperiton infect NEC | 3 | | | | | |
| 567.81 | Choleperitonitis | 3 | | | | | |
| 567.82 | Sclerosing mesenteritis | 3 | | | | | |
| 567.89 | Peritonitis NEC | 3 | | | | | |
| 567.9 | Peritonitis NOS | 3 | | | | | |
| 569.60 | Colostomy/enter comp NOS | 3 | | | | | |
| 569.61 | Colosty/enterost infectn | 3 | | | | | |
| 569.62 | Colosty/enter comp-mech | 3 | | | | | |
| 569.69 | Colstmy/enteros comp NEC | 3 | | | | | |
| 569.83 | Perforation of intestine | 3 | | | | | |
| 569.85 | Angio intes w hmrhg | 3 | | | | | |
| 570. | Acute necrosis of liver | 3 | | | | | |
| 572.0 | Abscess of liver | 3 | | | | | |
| 572.4 | Hepatorenal syndrome | 3 | | | | | |
| 573.4 | Hepatic infarction | 3 | | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table

(No changes with Version 2.70)

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|---------------------------|------|---------------|-------|-------------|------------------|--------------|
| 575.4 | Perforation gallbladder | 3 | | | | | |
| 576.3 | Perforation of bile duct | 3 | | | | | |
| 577.2 | Pancreat cyst/pseudocyst | 3 | | | | | |
| 580.0 | Ac proliferat nephritis | 3 | | | | | |
| 580.4 | Ac rapidly progr nephrit | 3 | | | | | |
| 580.81 | Ac nephritis in oth dis | 3 | | | | | |
| 580.89 | Acute nephritis NEC | 3 | | | | | |
| 580.9 | Acute nephritis NOS | 3 | | | | | |
| 583.4 | Rapidly prog nephrit NOS | 3 | | | | | |
| 584.5 | Ac kidney fail, tubr necr | 3 | | | | | |
| 584.6 | Ac kidney fail, cort necr | 3 | | | | | |
| 584.7 | Ac kidney fail, medu necr | 3 | | | | | |
| 584.8 | Acute kidney failure NEC | 3 | | | | | |
| 584.9 | Acute kidney failure NOS | 3 | | | | | |
| 590.2 | Renal/perirenal abscess | 3 | | | | | |
| 596.6 | Bladder rupt, nontraum | 3 | | | | | |
| 659.30 | Septicemia in labor-unsp | 3 | | | | | |
| 659.31 | Septicem in labor-deliv | 3 | | | | | |
| 665.00 | Prelabor rupt uter-unsp | 3 | | | | | |
| 665.01 | Prelabor rupt uterus-del | 3 | | | | | |
| 665.03 | Prelab rupt uter-antepar | 3 | | | | | |
| 665.10 | Rupture uterus NOS-unsp | 3 | | | | | |
| 665.11 | Rupture uterus NOS-deliv | 3 | | | | | |
| 669.10 | Obstetric shock-unspec | 3 | 03 | | | | |
| 669.11 | Obstetric shock-deliver | 3 | 03 | | | | |
| 669.12 | Obstet shock-deliv w p/p | 3 | 03 | | | | |
| 669.13 | Obstetric shock-antepar | 3 | 03 | | | | |
| 669.14 | Obstetric shock-postpart | 3 | 03 | | | | |
| 669.30 | Ac kidney fail w del-unsp | 3 | | | | | |
| 669.32 | Ac kidney fail-del w p/p | 3 | | | | | |
| 669.34 | Ac kidney fail-postpart | 3 | | | | | |
| 673.00 | Ob air embolism-unspec | 3 | 01 | | | | |
| 673.01 | Ob air embolism-deliver | 3 | 01 | | | | |
| 673.02 | Ob air embol-deliv w p/p | 3 | 01 | | | | |
| 673.03 | Ob air embolism-antepart | 3 | 01 | | | | |
| 673.04 | Ob air embolism-postpart | 3 | 01 | | | | |
| 673.10 | Amniotic embolism-unspec | 3 | 01 | | | | |
| 673.11 | Amniotic embolism-deliv | 3 | 01 | | | | |
| 673.12 | Amniot embol-deliv w p/p | 3 | 01 | | | | |
| 673.13 | Amniotic embol-antepart | 3 | 01 | | | | |
| 673.14 | Amniotic embol-postpart | 3 | 01 | | | | |
| 673.20 | Ob pulm embol NOS-unspec | 3 | 15 | | | | |
| 673.22 | Pulm embol NOS-del w p/p | 3 | 15 | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table

(No changes with Version 2.70)

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|----------------------------|------|---------------|-------|-------------|------------------|--------------|
| 673.23 | Pulm embol NOS-ante part | 3 | 15 | | | | |
| 673.24 | Pulm embol NOS-postpart | 3 | 15 | | | | |
| 673.30 | Ob pyemic embol-unspec | 3 | 03 | | | | |
| 673.31 | Ob pyemic embol-deliver | 3 | 03 | | | | |
| 673.32 | Ob pyem embol-del w p/p | 3 | 03 | | | | |
| 673.33 | Ob pyemic embol-ante part | 3 | 03 | | | | |
| 673.34 | Ob pyemic embol-postpart | 3 | 03 | | | | |
| 673.80 | Ob pulmon embol NEC-unsp | 3 | 15 | | | | |
| 673.81 | Pulmon embol NEC-deliver | 3 | 15 | | | | |
| 673.82 | Pulm embol NEC-del w p/p | 3 | 15 | | | | |
| 673.83 | Pulmon embol NEC-ante part | 3 | 15 | | | | |
| 673.84 | Pulmon embol NEC-postpart | 3 | 15 | | | | |
| 674.00 | Puerp cerebvasc dis-unsp | 3 | 01,03 | | | | |
| 682.0 | Cellulitis of face | 3 | | | | | |
| 682.1 | Cellulitis of neck | 3 | | | | | |
| 682.2 | Cellulitis of trunk | 3 | | | | | |
| 682.3 | Cellulitis of arm | 3 | | | | | |
| 682.4 | Cellulitis of hand | 3 | | | | | |
| 682.5 | Cellulitis of buttock | 3 | | | | | |
| 682.6 | Cellulitis of leg | 3 | 10 | | | | |
| 682.7 | Cellulitis of foot | 3 | 10 | | | | |
| 682.8 | Cellulitis, site NEC | 3 | | | | | |
| 765.01 | Extreme immatur <500g | 3 | | | | | |
| 765.02 | Extreme immatur 500-749g | 3 | | | | | |
| 765.03 | Extreme immatur 750-999g | 3 | | | | | |
| 780.62 | Postprocedural fever | 3 | | | | | |
| 780.66 | Feb nonhemo transf react | 3 | | | | | |
| 781.7 | Tetany | 3 | 06 | | | | |
| 785.4 | Gangrene | 3 | 10,11 | | | | |
| 785.51 | Cardiogenic shock | 3 | 14 | | | | |
| 785.52 | Septic shock | 3 | | | | | |
| 785.59 | Shock w/o trauma NEC | 3 | | | | | |
| 793.19 | Ot nonsp ab fnd lung fld | 3 | 15 | | | | |
| 799.1 | Respiratory arrest | 3 | 15 | | | | |
| 958.0 | Air embolism | 3 | 02,03 | | | | |
| 958.1 | Fat embolism | 3 | 02,03 | | | | |
| 958.5 | Traumatic anuria | 3 | | | | | |
| 995.90 | SIRS, NOS | 3 | | | | | |
| 995.91 | Sepsis | 3 | | | | | |
| 995.92 | Severe sepsis | 3 | | | | | |
| 995.93 | SIRS-noninf w/o ac or ds | 3 | | | | | |
| 995.94 | SIRS-noninf w ac org dys | 3 | | | | | |
| 996.02 | Malfunc prosth hrt valve | 3 | 14 | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix C: Comorbidity Tier Code Lookup Table**(No changes with Version 2.70)**

| ICD9 | ICD9CM Label | Tier | RIC Exclusion | Added | Tier Change | Exclusion Change | Label Change |
|--------|--------------------------|------|---------------|-------|-------------|------------------|--------------|
| 996.61 | React-cardiac dev/graft | 3 | 14 | | | | |
| 996.62 | React-oth vasc dev/graft | 3 | | | | | |
| 996.63 | React-nerv sys dev/graft | 3 | | | | | |
| 996.66 | React-inter joint prost | 3 | 08 | | | | |
| 996.67 | React-oth int ortho dev | 3 | 09 | | | | |
| 996.68 | React-periton dialy cath | 3 | 09 | | | | |
| 996.69 | React-int pros devic NEC | 3 | 09 | | | | |
| 997.62 | Infection amputat stump | 3 | 09,10,11 | | | | |
| 998.00 | Postoperative shock, NOS | 3 | | | | | |
| 998.01 | Postop shock,cardiogenic | 3 | | | | | |
| 998.02 | Postop shock, septic | 3 | | | | | |
| 998.09 | Postop shock, other | 3 | | | | | |
| 998.30 | Wound disruption NOS | 3 | | | | | |
| 998.31 | Disrup internal op wound | 3 | | | | | |
| 998.32 | Disrup-external op wound | 3 | | | | | |
| 998.33 | Disrpt trauma wound repr | 3 | | | | | |
| 998.51 | Infected postop seroma | 3 | | | | | |
| 998.59 | Other postop infection | 3 | | | | | |
| 998.6 | Persist postop fistula | 3 | | | | | |
| 999.1 | Air embol comp med care | 3 | 03 | | | | |
| 999.31 | Oth/uns inf-cen ven cath | 3 | | | | | |
| 999.32 | Blood inf dt cen ven cth | 3 | | | | | |
| 999.33 | Lcl inf dt cen ven cth | 3 | | | | | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix D: Comorbidities That Were Deleted in V2.70

| ICD9 | ICD9CM Label |
|------|--------------|
| NONE | |

Notes:

Last four columns show changes implemented in V2.70 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no changes with V2.70.

Appendix E: CMG Group Number Lookup Table

| CMG Group Number | RIC Code | Motor Score Low Value (min=12.0) | Motor Score High Value (max=84.0) | Cognitive Score Low Value (min=5) | Cognitive Score High Value (max=35) | Age Low Value (min=0) | Age High Value (max=140) |
|-------------------------|-----------------|---|--|--|--|------------------------------|---------------------------------|
| 0101 | 01 | 51.1 | 84.0 | | | | |
| 0102 | 01 | 44.5 | 51.0 | 19 | 35 | | |
| 0103 | 01 | 44.5 | 51.0 | 5 | 18 | | |
| 0104 | 01 | 38.9 | 44.4 | | | | |
| 0105 | 01 | 34.3 | 38.8 | | | | |
| 0106 | 01 | 30.1 | 34.2 | | | | |
| 0107 | 01 | 26.2 | 30.0 | | | | |
| 0108 | 01 | 12.0 | 26.1 | | | 85 | 140 |
| 0109 | 01 | 22.4 | 26.1 | | | 0 | 84 |
| 0110 | 01 | 12.0 | 22.3 | | | 0 | 84 |
| 0201 | 02 | 53.4 | 84.0 | 24 | 35 | | |
| 0202 | 02 | 44.3 | 53.3 | 24 | 35 | | |
| 0203 | 02 | 44.3 | 84.0 | 5 | 23 | | |
| 0204 | 02 | 40.7 | 44.2 | | | | |
| 0205 | 02 | 28.8 | 40.6 | | | | |
| 0206 | 02 | 22.1 | 28.7 | | | | |
| 0207 | 02 | 12.0 | 22.0 | | | | |
| 0301 | 03 | 41.1 | 84.0 | | | | |
| 0302 | 03 | 35.1 | 41.0 | | | | |
| 0303 | 03 | 26.2 | 35.0 | | | | |
| 0304 | 03 | 12.0 | 26.1 | | | | |
| 0401 | 04 | 48.5 | 84.0 | | | | |
| 0402 | 04 | 30.4 | 48.4 | | | | |
| 0403 | 04 | 16.1 | 30.3 | | | | |
| 0404 | 04 | 12.0 | 16.0 | | | 64 | 140 |
| 0405 | 04 | 12.0 | 16.0 | | | 0 | 63 |
| 0501 | 05 | 51.4 | 84.0 | | | | |
| 0502 | 05 | 40.2 | 51.3 | | | | |
| 0503 | 05 | 31.3 | 40.1 | | | | |
| 0504 | 05 | 29.3 | 31.2 | | | | |
| 0505 | 05 | 23.8 | 29.2 | | | | |
| 0506 | 05 | 12.0 | 23.7 | | | | |
| 0601 | 06 | 47.8 | 84.0 | | | | |
| 0602 | 06 | 37.4 | 47.7 | | | | |
| 0603 | 06 | 25.9 | 37.3 | | | | |
| 0604 | 06 | 12.0 | 25.8 | | | | |
| 0701 | 07 | 42.2 | 84.0 | | | | |
| 0702 | 07 | 34.2 | 42.1 | | | | |
| 0703 | 07 | 28.2 | 34.1 | | | | |
| 0704 | 07 | 12.0 | 28.1 | | | | |
| 0801 | 08 | 49.6 | 84.0 | | | | |
| 0802 | 08 | 37.1 | 49.5 | | | | |
| 0803 | 08 | 28.7 | 37.0 | | | 84 | 140 |
| 0804 | 08 | 28.7 | 37.0 | | | 0 | 83 |
| 0805 | 08 | 22.1 | 28.6 | | | | |

Appendix E: CMG Group Number Lookup Table

| CMG Group Number | RIC Code | Motor Score Low Value (min=12.0) | Motor Score High Value (max=84.0) | Cognitive Score Low Value (min=5) | Cognitive Score High Value (max=35) | Age Low Value (min=0) | Age High Value (max=140) |
|-------------------------|-----------------|---|--|--|--|------------------------------|---------------------------------|
| 0806 | 08 | 12.0 | 22.0 | | | | |
| 0901 | 09 | 44.8 | 84.0 | | | | |
| 0902 | 09 | 34.4 | 44.7 | | | | |
| 0903 | 09 | 24.2 | 34.3 | | | | |
| 0904 | 09 | 12.0 | 24.1 | | | | |
| 1001 | 10 | 47.7 | 84.0 | | | | |
| 1002 | 10 | 36.3 | 47.6 | | | | |
| 1003 | 10 | 12.0 | 36.2 | | | | |
| 1101 | 11 | 36.4 | 84.0 | | | | |
| 1102 | 11 | 12.0 | 36.3 | | | | |
| 1201 | 12 | 37.7 | 84.0 | | | | |
| 1202 | 12 | 30.8 | 37.6 | | | | |
| 1203 | 12 | 12.0 | 30.7 | | | | |
| 1301 | 13 | 36.4 | 84.0 | | | | |
| 1302 | 13 | 26.2 | 36.3 | | | | |
| 1303 | 13 | 12.0 | 26.1 | | | | |
| 1401 | 14 | 48.9 | 84.0 | | | | |
| 1402 | 14 | 38.6 | 48.8 | | | | |
| 1403 | 14 | 31.2 | 38.5 | | | | |
| 1404 | 14 | 12.0 | 31.1 | | | | |
| 1501 | 15 | 49.3 | 84.0 | | | | |
| 1502 | 15 | 39.1 | 49.2 | | | | |
| 1503 | 15 | 29.2 | 39.0 | | | | |
| 1504 | 15 | 12.0 | 29.1 | | | | |
| 1601 | 16 | 37.2 | 84.0 | | | | |
| 1602 | 16 | 26.8 | 37.1 | | | | |
| 1603 | 16 | 12.0 | 26.7 | | | | |
| 1701 | 17 | 39.3 | 84.0 | | | | |
| 1702 | 17 | 31.1 | 39.2 | | | | |
| 1703 | 17 | 25.6 | 31.0 | | | | |
| 1704 | 17 | 12.0 | 25.5 | | | | |
| 1801 | 18 | 40.9 | 84.0 | | | | |
| 1802 | 18 | 23.1 | 40.8 | | | | |
| 1803 | 18 | 12.0 | 23.0 | | | | |
| 1901 | 19 | 36.0 | 84.0 | | | | |
| 1902 | 19 | 18.1 | 35.9 | | | | |
| 1903 | 19 | 12.0 | 18.0 | | | | |
| 2001 | 20 | 49.2 | 84.0 | | | | |
| 2002 | 20 | 38.8 | 49.1 | | | | |
| 2003 | 20 | 27.9 | 38.7 | | | | |
| 2004 | 20 | 12.0 | 27.8 | | | | |
| 2101 | 21 | 12.0 | 84.0 | | | | |