

**Program Documentation for DLL Version 2.20 for the CMG
Classification System Version 2.20
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 2.20 of the DLL. This revised DLL applies to version 2.20 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 2.20. The prior DLL Version was 2.10. All changes made with DLL Version 2.20 involve addition and deletion of ICD9 comorbidity codes. These comorbidity changes were required by the FY 2008 annual revision to the ICD9 codes. All comorbidity additions are documented in Appendix C. All comorbidity deletions are documented in Appendix D.

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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 are 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. Note that the designation "sp()" refers to spaces. For example, sp(7) means 7 spaces. The first variable in Appendix A, REC_ID, is not actually involved in the CMG calculations and it is therefore not absolutely necessary to determine whether it is equal to the required value ("B2"). However, if the calculation routine accepts a data string in the standard submission format, we recommend testing the value of REC_ID to make sure that the record is actually an IRF-PAI data (body) record with a REC_ID value of "B2".
2. Check to make sure that the ICD9 comorbidity fields (items 24A through 24J) have a valid format. To be valid, the field must be blank or it must pass all of the following tests:
 - a. It must be 7 characters in length.
 - b. Character 1 must be "E" or space.
 - c. Character 2 can be "V" if character 1 is a space. Otherwise, character 2 must be numeric ("0" through "9").
 - d. Characters 3 and 4 must be numeric ("0" through "9").
 - e. Character 5 must be a decimal point.
 - f. Characters 6 and 7 must be numeric ("0" through "9") or a space.
 - g. If character 6 is a space, then character 7 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) in conjunction with Appendix B is used to determine the RIC code. If 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 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)
 - 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_J_CD).

¹ Note that for reference, Appendix C dictates additions that were made to the comorbidity list in DLL V2.20. Also, Appendix D lists comorbidities that were previously used but that were deleted in DLL V2.20.

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: Fields Used for CMG Calculation

Database Name	Form Location	Description	Length	Start Byte	End Byte	Range
REC_ID		RECORD ID	2	1	2	B2
BIRTH_DT	6.	Birth Date	8	276	283	Valid full or partial date; spaces allowed only with partial date.
ADMSN_DT	12.	Admission Date	8	307	314	Valid date
IMPRMNT_GRP_ADMSN_CD	21a.	Impairment Group: Admission	9	339	347	Valid code
CMRBD_COND_A_CD	24A.	Comorbid Conditions (ICD-9 Code)	7	372	378	Valid ICD-9 Code, sp(7)
CMRBD_COND_B_CD	24B.	Comorbid Conditions (ICD-9 Code)	7	379	385	Valid ICD-9 Code, sp(7)
CMRBD_COND_C_CD	24C.	Comorbid Conditions (ICD-9 Code)	7	386	392	Valid ICD-9 Code, sp(7)
CMRBD_COND_D_CD	24D.	Comorbid Conditions (ICD-9 Code)	7	393	399	Valid ICD-9 Code, sp(7)
CMRBD_COND_E_CD	24E.	Comorbid Conditions (ICD-9 Code)	7	400	406	Valid ICD-9 Code, sp(7)
CMRBD_COND_F_CD	24F.	Comorbid Conditions (ICD-9 Code)	7	407	413	Valid ICD-9 Code, sp(7)
CMRBD_COND_G_CD	24G.	Comorbid Conditions (ICD-9 Code)	7	414	420	Valid ICD-9 Code, sp(7)
CMRBD_COND_H_CD	24H.	Comorbid Conditions (ICD-9 Code)	7	421	427	Valid ICD-9 Code, sp(7)
CMRBD_COND_I_CD	24I.	Comorbid Conditions (ICD-9 Code)	7	428	434	Valid ICD-9 Code, sp(7)
CMRBD_COND_J_CD	24J.	Comorbid Conditions (ICD-9 Code)	7	435	441	Valid ICD-9 Code, sp(7)
EATG_ADMSN_CD	39Aa.	SELF-CARE - Eating: Admission	2	490	491	00-07
GRMG_ADMSN_CD	39Ba.	SELF-CARE - Grooming: Admission	2	496	497	00-07
BATHG_ADMSN_CD	39Ca.	SELF-CARE - Bathing: Admission	2	502	503	00-07
DRSG_UPR_ADMSN_CD	39Da.	SELF-CARE - Dressing - Upper: Admission	2	508	509	00-07
DRSG_LWR_ADMSN_CD	39Ea.	SELF-CARE - Dressing - Lower: Admission	2	514	515	00-07
TOILTG_ADMSN_CD	39Fa.	SELF-CARE - Toileting: Admission	2	520	521	00-07
SPHNCTR_BLADR_ADMSN_CD	39Ga.	SPHINCTER CONTROL - Bladder: Admission	2	526	527	01-07
SPHNCTR_BWL_ADMSN_CD	39Ha.	SPHINCTER CONTROL - Bowel: Admission	2	532	533	01-07
BED_CHR_WC_ADMSN_CD	39Ia.	TRANSFERS - Bed, chair, wheelchair: Admission	2	538	539	00-07
TOILT_ADMSN_CD	39Ja.	TRANSFERS - Toilet: Admission	2	544	545	00-07
WLK_WC_ADMSN_CD	39La.	LOCOMOTION - Walk/wheelchair: Admission	2	556	557	00-07
STR_ADMSN_CD	39Ma.	LOCOMOTION - Stairs: Admission	2	564	565	00-07
CMPRHNSN_ADMSN_CD	39Na.	COMMUNICATION - Comprehension:	2	570	571	01-07 ¹

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: Fields Used for CMG Calculation

Database Name	Form Location	Description	Length	Start Byte	End Byte	Range
		Admission				
EXPRSN_ADMSN_CD	39Oa.	COMMUNICATION - Expression: Admission	2	578	579	01-07 ¹
SCL_INTRCTN_ADMSN_CD	39Pa.	SOCIAL COGNITION - Social interaction: Admission	2	586	587	01-07
PRBLM_SLVG_ADMSN_CD	39Qa.	SOCIAL COGNITION - Problem solving: Admission	2	592	593	01-07
MEMRY_ADMSN_CD	39Ra.	SOCIAL COGNITION - Memory: Admission	2	598	599	01-07

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 Code	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
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

Appendix B: RIC Lookup Table

RIC Code	RIC Label	Impairment Grp Code	Impairment Group Label
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
19	Guillian Barre (GB)	03.4	Guillian Barre syndrome
20	Miscellaneous (Misc)	12.1	Spina Bifida
20	Miscellaneous (Misc)	12.9	Other congenital

Appendix B: RIC Lookup Table

RIC Code	RIC Label	Impairment Grp Code	Impairment Group Label
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

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
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				
V45.1	RENAL DIALYSIS STATUS	1				
V55.0	ATTEN TO TRACHEOSTOMY	1				
008.42	PSEUDOMONAS ENTERITIS	2				
008.45	INT INF CLSTRDIUM 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	yes		
787.21	DYSPHAGIA, ORAL PHASE	2	01	yes		
787.22	DYSPHAGIA, OROPHARYNGEAL	2	01	yes		
787.23	DYSPHAGIA, PHARYNGEAL	2	01	yes		
787.24	DYSPHAGIA, PHARYNGOESOPH	2	01	yes		
787.29	DYSPHAGIA NEC	2	01	yes		
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			

Notes:

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
011.32	TB OF BRONCHUS-EXAM UNKN	3	15			
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 PNEUMOTHORX-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			

Notes:

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
011.92	PULMON TB NOS-EXAM UNKN	3	15			
011.93	PULMON TB NOS-MICRO DX	3	15			
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			

Notes:

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
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			
013.05	TB MENINGITIS-HISTO DX	3	03,05			
013.06	TB MENINGITIS-OTH TEST	3	03,05			
013.10	TUBRCLMA MENINGES-UNSPEC	3	03,05			
013.11	TUBRCLMA MENING-NO EXAM	3	03,05			
013.12	TUBRCLMA MENIN-EXAM UNKN	3	03,05			
013.13	TUBRCLMA MENING-MICRO DX	3	03,05			
013.14	TUBRCLMA MENING-CULT DX	3	03,05			
013.15	TUBRCLMA MENING-HISTO DX	3	03,05			
013.16	TUBRCLMA MENING-OTH TEST	3	03,05			
013.20	TUBERCULOMA BRAIN-UNSPEC	3	03			
013.21	TUBRCLOMA BRAIN-NO EXAM	3	03			
013.22	TUBRCLMA BRAIN-EXAM UNKN	3	03			
013.23	TUBRCLOMA BRAIN-MICRO DX	3	03			
013.24	TUBRCLOMA BRAIN-CULT DX	3	03			
013.25	TUBRCLOMA BRAIN-HISTO DX	3	03			
013.26	TUBRCLOMA 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	TUBRCLMA SP CORD-UNSPEC	3	05			
013.41	TUBRCLMA SP CORD-NO EXAM	3	05			
013.42	TUBRCLMA SP CD-EXAM UNKN	3	05			
013.43	TUBRCLMA SP CRD-MICRO DX	3	05			
013.44	TUBRCLMA SP CORD-CULT DX	3	05			
013.45	TUBRCLMA SP CRD-HISTO DX	3	05			
013.46	TUBRCLMA 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			

Notes:

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
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			
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			

Notes:

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
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			
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			

Notes:

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
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				
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				

Notes:

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
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				
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				

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
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				
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				

Notes:

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
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				
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	PASTEURILLOSIS	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			

Notes:

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
036.43	MENINGOCOCC MYOCARDITIS	3	14			
037.	TETANUS	3	06			
038.0	STREPTOCOCCAL SEPTICEMIA	3				
038.10	STAPHYLOCOCC SEPTICEM NOS	3				
038.11	STAPH AUREUS SEPTICEMIA	3				
038.19	STAPHYLOCOCC SEPTICEM NEC	3				
038.2	PNEUMOCOCCAL SEPTICEMIA	3				
038.3	ANAEROBIC SEPTICEMIA	3				
038.40	GRAM-NEG SEPTICEMIA NOS	3				
038.41	H. INFLUENAE 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	yes		
058.29	HUMAN HERPESVIR ENCPH NEC	3	03	yes		
070.20	HPT B ACTE COMA WO DLTA	3	03			
070.21	HPT B ACTE COMA W DLTA	3	03			
070.22	HPT B CHRNM COMA WO DLTA	3	03			
070.23	HPT B CHRNM 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			

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
070.44	CHRONIC 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 INFECTION OTH DIS	3	06			
079.53	HIV-2 INFECTION OTH DIS	3				
079.59	OTH SPECIFIED 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	HISTOPLASM CAPSUL MENING	3	03,05			
115.02	HISTOPLASM CAPSUL RETINA	3				
115.03	HISTOPLASM CAPS PERICARD	3	14			
115.04	HISTOPLASM CAPS ENDOCARD	3	14			
115.05	HISTOPLASM CAPS PNEUMON	3	15			
115.09	HISTOPLASMA CAPSULAT NEC	3	15			
115.10	HISTOPLASMA DUBOISII NOS	3				
115.11	HISTOPLASM DUBOIS MENING	3	03,05			
115.12	HISTOPLASM DUBOIS RETINA	3				
115.13	HISTOPLASM DUB PERICARD	3	14			
115.14	HISTOPLASM DUB ENDOCARD	3	14			
115.15	HISTOPLASM 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			

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
115.94	HISTOPLASMOSIS ENDOCARD	3	14			
115.95	HISTOPLASMOSIS PNEUMONIA	3	15			
115.99	HISTOPLASMOSIS NEC	3	15			
130.0	TOXOPLASM 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	ACT LYM LEUK W/O RMSION	3				
205.00	ACT MYL LEUK W/O RMSION	3				
206.00	ACT MONO LEUK W/O RMSION	3				
207.00	ACT ERTH/ERYLK W/O RMSON	3				
208.00	ACT LEUK UNS CL W/O RMSN	3				
250.01	DMI WO CMP NT ST UNCCTRL	3				
250.40	DMII RENL NT ST UNCNRDL	3				
250.41	DMI RENL NT ST UNCNRDL	3				
250.42	DMII RENAL UNCNRDL	3				
250.43	DMI RENAL UNCNRDL	3				
250.50	DMII OPHTH NT ST UNCCTRL	3				
250.51	DMI OPHTH NT ST UNCNRDL	3				
250.52	DMII OPHTH UNCNRDL	3				
250.53	DMI OPHTH UNCNRDL	3				
250.60	DMII NEURO NT ST UNCCTRL	3	06			
250.61	DMI NEURO NT ST UNCNRDL	3	06			
250.62	DMII NEURO UNCNRDL	3	06			
250.63	DMI NEURO UNCNRDL	3	06			
250.70	DMII CIRC NT ST UNCNRDL	3				
250.71	DMI CIRC NT ST UNCNRDL	3				
250.72	DMII CIRC UNCNRDL	3				
250.73	DMI CIRC UNCNRDL	3				
250.80	DMII OTH NT ST UNCNRDL	3				
250.81	DMI OTH NT ST UNCNRDL	3				
250.82	DMII OTH UNCNRDL	3				
250.83	DMI OTH UNCNRDL	3				
250.91	DMI UNSPF NT ST UNCNRDL	3				
250.92	DMII UNSPF UNCNRDL	3				
277.00	CYSTIC FIBROS W/O ILEUS	3	15			
277.01	CYSTIC FIBROSIS W ILEUS	3	15			
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				

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
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 APLASTC ANEMIA NEC	3				
284.1	PANCYTOPENIA	3				
284.2	MYELOPHTHISIS	3				
284.81	RED CELL APLASIA	3		yes		
284.89	APLASTIC ANEMIAS NEC	3		yes		
284.9	APLASTIC ANEMIA NOS	3				
286.0	CONG FACTOR VIII DIORD	3				
286.1	CONG FACTOR IX DISORDER	3				
286.6	DEFIBRATION 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	MNINGTS 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			
323.62	POSTINF ENCEPHALITIS NEC	3	03			
323.63	POSTINFECTIOUS MYELITIS	3	03			
323.81	ENCEPH & ENCEPHALALO NEC	3	03			
323.82	MYELITIS CAUSE NEC	3	03			
323.9	ENCEPHALITIS NOS	3	03			
324.0	INTRACRANIAL ABSCESS	3	03			

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
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	IDIOPATHIC 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 HIV 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	yes		
415.19	PULM EMBOL/INFARCT NEC	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			
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			

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
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	DIASTOLC 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 THRMBS 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 ULCRTION	3	10,11			
440.24	ATH EXT NTV ART GNGRENE	3	10,11			
440.4	CHR TOT OCCL ART EXTREM	3	10,11	yes		
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			
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		yes		
452.	PORTAL VEIN THROMBOSIS	3				
453.0	BUDD-CHIARI SYNDROME	3				

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ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
453.1	THROMBOPHLEBITIS MIGRANS	3				
453.2	VENA CAVA THROMBOSIS	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 BRONCHOLITIS 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	STAPH AUREUS PNEUMONIA	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			
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			

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ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
487.0	INFLUENZA WITH PNEUMONIA	3	15			
488.	FLU D/T AVIAN FLU VIRUS	3	15	yes		
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			
517.3	ACUTE CHEST SYNDROME	3				
518.3	PULMONARY EOSINOPHILIA	3	15			
518.5	POST TRAUM PULM INSUFFIC	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				
531.01	AC STOMAC 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 STOMAC 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				

Notes:

Last three columns show changes implemented in V2.20 (ICD9CM added to list, tier assignment changed, or RIC exclusions changed). There were no tier assignment or RIC exclusion changes with V2.20.

Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
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				
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	ATRP H GASTRITIS W HMRHG	3				
535.21	GSTR MCSL HYPRT W HMRG	3				
535.31	ALCHL GSTRITIS W HMRHG	3				
535.41	OTH SPF GASTRT W HMRHG	3				
535.51	GSTR/DDNTS NOS W HMRHG	3				
535.61	DUODENITIS W HMRHG	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				

Notes:

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
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	COLSTOMY/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				
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	LOWER NEPHRON NEPHROSIS	3				
584.6	AC RENAL FAIL, CORT NECR	3				
584.7	AC REN FAIL, MEDULL NECR	3				
584.8	AC RENAL FAILURE NEC	3				
584.9	ACUTE RENAL 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				

Notes:

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
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 REN FAIL W DELIV-UNSP	3				
669.32	AC REN FAIL-DELIV W P/P	3				
669.34	AC RENAL FAILURE-POSTPAR	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			
673.23	PULM EMBOL NOS-ANTEPART	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-ANTEPART	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-ANTEPAR	3	15			
673.84	PULMON EMBOL NEC-POSTPAR	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				

Notes:

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Appendix C: Comorbidity Tier Code Lookup Table

ICD9	ICD9CM Label	Tier	RIC Exclusion	Changes in V2.20		
				Added	Tier Change (none)	Exclusion Change (none)
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				
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				
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			
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			
998.0	POSTOPERATIVE SHOCK	3				
998.31	DISRUP-INTERNAL OP WOUND	3				
998.32	DISRUP-EXTERNAL OP WOUND	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	INFECT D/T CENT VEN CATH	3		yes		

Notes:

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Appendix D: Comorbidities That Were Deleted in V2.20

ICD9	ICD9CM Label
787.2	DYSPHAGIA*
284.8	APLASTIC ANEMIAS NEC*

Notes:

* Denotes this is a category rather than a code.

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				