

Table of Contents

Technical Specifications of the Indicator

- I. Technical Specifications
- II. PDI02 Appendices
- III. PDI02 Parameter Estimates

Methodology

- I. PDI02 Table 1 Reference Population
- II. Version 5.0 Empirical Methods

Pressure Ulcer Rate Technical Specifications

Pediatric Quality Indicators #2 (PDI #2)

AHRQ Quality Indicators™, Version 5.0

March 2015

Provider-Level Indicator

Type of Score: Rate

Description

Stage III or IV pressure ulcers (secondary diagnosis) per 1,000 discharges among patients ages 17 years and younger. Includes metrics for discharges grouped by risk category. Excludes neonates; stays less than five (5) days; transfers from another facility; obstetric discharges; cases with diseases of the skin, subcutaneous tissue and breast; discharges in which debridement or pedicle graft is the only operating room procedure; discharges with debridement or pedicle graft before or on the same day as the major operating room procedure; and those discharges in which pressure ulcer is the principal diagnosis or secondary diagnosis of Stage III or IV pressure ulcer is present on admission

[NOTE: The software provides the rate per hospital discharge. However, common practice reports the measure as per 1,000 discharges. The user must multiply the rate obtained from the software by 1,000 to report events per 1,000 hospital discharges.]

[NOTE: To obtain stratified results, the user must run the PDSASG2.SAS program in the SAS QI Software Version 4.5 or choose to stratify by risk category in the Windows QI Software Version 4.5]

Numerator

Overall:

Discharges, among cases meeting the inclusion and exclusion rules for the denominator, with any secondary ICD-9-CM diagnosis codes for pressure ulcer and any secondary ICD-9-CM diagnosis codes for pressure ulcer stage III or IV (or unstageable).

ICD-9-CM Pressure ulcer diagnosis codes:

7070	DECUBITUS ULCER	70704	PRESSURE ULCER, HIP
70700	PRESSURE ULCER, SITE NOS	70705	PRESSURE ULCER, BUTTOCK
70701	PRESSURE ULCER, ELBOW	70706	PRESSURE ULCER, ANKLE
70702	PRESSURE ULCER, UPR BACK	70707	PRESSURE ULCER, HEEL
70703	PRESSURE ULCER, LOW BACK	70709	PRESSURE ULCER, SITE NEC

ICD-9-CM Pressure ulcer stage diagnosis codes:

70723 PRESSURE ULCER, STAGE III

70725 PRESSURE ULCER, UNSTAGEBL

70724 PRESSURE ULCER, STAGE IV

High Risk Category:

Discharges, among cases meeting the inclusion and exclusion rules for the denominator, with any secondary ICD-9-CM diagnosis codes for pressure ulcer (see above) and any secondary ICD-9-CM diagnosis codes for pressure ulcer stage III or IV (or unstageable, see above).

Low Risk Category:

Discharges, among cases meeting the inclusion and exclusion rules for the denominator, with any secondary ICD-9-CM diagnosis codes for pressure ulcer (see above) and any secondary ICD-9-CM diagnosis codes for pressure ulcer stage III or IV (or unstageable, see above).

Denominator

Overall:

Surgical and medical discharges, for patients ages 17 years and younger. Surgical and medical discharges are defined by specific DRG or MS-DRG codes.

See *Pediatric Quality Indicators Appendices*:

- Appendix B – Surgical DRGs
- Appendix C – Surgical MS-DRGs
- Appendix D – Medical DRGs
- Appendix E – Medical MS-DRGs

Exclude cases:

- with a principal ICD-9-CM diagnosis code for pressure ulcer (see above)
- with any secondary ICD-9-CM diagnosis codes for pressure ulcer (see above) present on admission and any secondary ICD-9-CM diagnosis codes for pressure ulcer stage III or IV (or unstageable, see above) present on admission
- with any-listed ICD-9-CM procedure codes for debridement or pedicle graft before or on the same day as the major operating room procedure (surgical cases only)
- with any-listed ICD-9-CM procedure codes for debridement or pedicle graft as the only major operating room procedure (surgical cases only)
- neonates
- with length of stay of less than five (5) days
- transfer from a hospital (different facility)
- transfer from a Skilled Nursing Facility (SNF) or Intermediate Care Facility (ICF)
- transfer from another health care facility
- MDC 9 (skin, subcutaneous tissue, and breast)

- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

See *Pediatric Quality Indicators Appendices*:

- Appendix I – Definitions of Neonate, Newborn, Normal Newborn, and Outborn
- Appendix J – Admission Codes for Transfers

ICD-9-CM Debridement or pedicle graft procedure

codes:

8345	OTHER MYECTOMY	8671	CUT & PREP PEDICLE GRAFT
8622	EXC WOUND DEBRIDEMENT	8672	PEDICLE GRAFT ADVANCEMEN
8628	NONEXCIS DEBRIDEMENT WND	8674	ATTACH PEDICLE GRAFT NEC
8670	PEDICLE GRAFT/FLAP NOS	8675	REVISION OF PEDICLE GRFT

High Risk Category:

Surgical and medical discharges, for patients ages 17 years and younger, with any-listed ICD-9-CM diagnosis codes for hemiplegia, paraplegia, or quadriplegia or any-listed ICD-9-CM diagnosis codes for spina bifida or any-listed ICD-9-CM diagnosis codes for anoxic brain damage or any-listed ICD-9-CM procedure codes for continuous mechanical ventilation. Surgical and medical discharges are defined by specific DRG or MS-DRG codes.

See *Pediatric Quality Indicators Appendices*:

- Appendix B – Surgical DRGs
- Appendix C – Surgical MS-DRGs
- Appendix D – Medical DRGs
- Appendix E – Medical MS-DRGs

ICD-9-CM Hemiplegia, paraplegia, or quadriplegia diagnosis codes:

33371	ATHETOID CEREBRAL PALSY	34431	MONPLGA LWR LMB DMNT SDE
3341	HERED SPASTIC PARAPLEGIA	34432	MNPLG LWR LMB NONDMNT SD
3420	FLACCID HEMIPLEGIA	3444	MONOPLEGIA OF UPPER LIMB
34200	FLCCD HMIPLGA UNSPF SIDE	34440	MONPLGA UPR LMB UNSP SDE
34201	FLCCD HMIPLGA DOMNT SIDE	34441	MONPLGA UPR LMB DMNT SDE
34202	FLCCD HMIPLG NONDMNT SDE	34442	MNPLG UPR LMB NONDMNT SD
3421	SPASTIC HEMIPLEGIA	3445	UNSPECIFIED MONOPLEGIA
34210	SPSTC HMIPLGA UNSPF SIDE	34460	CAUDA EQUINA SYNDROME, WITHOUT MENTION OF NEUROGENIC BLADDER
34211	SPSTC HMIPLGA DOMNT SIDE	34461	CAUDA EQUINA SYNDROME, WITH NEUROGENIC BLADDER
34212	SPSTC HMIPLG NONDMNT SDE	3448	OTHER SPECIFIED PARALYTIC SYNDROMES
34280	OT SP HMIPLGA UNSPF SIDE	3443	MONOPLEGIA OF LOWER LIMB
34281	OT SP HMIPLGA DOMNT SIDE	34430	MONPLGA LWR LMB UNSP SDE
34282	OT SP HMIPLG NONDMNT SDE	34481	LOCKED-IN STATE
3429	HEMIPLEGIA, UNSPECIFIED	34489	OTH SPCF PARALYTIC SYND
34290	UNSP HEMIPPLGA UNSPF SIDE	3449	PARALYSIS, UNSPECIFIED
34291	UNSP HEMIPPLGA DOMNT SIDE	43820	LATE EF-HEMPLGA SIDE NOS
34292	UNSP HMIPLGA NONDMNT SDE	43821	LATE EF-HEMPLGA DOM SIDE
3430	INFANTILE CEREBRAL PALSY, DIPLEGIC	43822	LATE EF-HEMIPPLGA NON-DOM
3431	INFANTILE CEREBRAL PALSY,	43830	LATE EF-MPLGA UP LMB NOS

3432	HEMIPLEGIC INFANTILE CEREBRAL PALSY, QUADRIPLEGIC	43831	LATE EF-MPLGA UP LMB DOM
3433	INFANTILE CEREBRAL PALSY, MONOPLLEGIC	43832	LT EF-MPLGA UPLMB NONDOM
3434	INFANTILE CEREBRAL PALSY INFANTILE HEMIPLEGIA	43840	LTE EF-MPLGA LOW LMB NOS
3438	INFANTILE CEREBRAL PALSY OTHER SPECIFIED INFANTILE CEREBRAL PALSY	43841	LTE EF-MPLGA LOW LMB DOM
3439	INFANTILE CEREBRAL PALSY, INFANTILE CEREBRAL PALSY, UNSPECIFIED	43842	LT EF-MPLGA LOWLMB NONDM
3440	QUADRIPLEGIA AND QUADRIPARESIS	43850	LT EF OTH PARAL SIDE NOS
34400	QUADRIPLEGIA, UNSPECIFD	43851	LT EF OTH PARAL DOM SIDE
34401	QUADRPLG C1-C4, COMPLETE	43852	LT EF OTH PARALS NON-DOM
34402	QUADRPLG C1-C4, INCOMPLT	43853	LT EF OTH PARALS-BILAT
34403	QUADRPLG C5-C7, COMPLETE	7687	HYPOXIC-ISCHEMIC ENCEPH
34404	QUADRPLG C5-C7, INCOMPLT	76870	HYPOXC-ISCHEM ENCEPH NOS
34409	OTHER QUADRIPLEGIA	76872	MOD HYPOX-ISCHEM ENCEPH
3441	PARAPLEGIA	76873	SEV HYPOX-ISCHEM ENCEPH
3442	DIPLEGIA OF UPPER LIMBS		

ICD-9-CM Spina bifida or anoxic brain damage diagnosis codes:

74100	SPIN BIF W HYDROCEPH NOS	74190	SPINA BIFIDA
74101	SPIN BIF W HYDRCEPH-CERV	74191	SPINA BIFIDA-CERV
74102	SPIN BIF W HYDRCEPH-DORS	74192	SPINA VIFIDA-DORSAL
74103	SPIN BIF W HYDRCEPH-LUMB	74193	SPINA BIFIDA-LUMBAR

ICD-9-CM Anoxic brain damage diagnosis codes:

3481	ANOXIC BRAIN DAMAGE	7685	SEVERE BIRTH ASPHYXIA
------	---------------------	------	-----------------------

ICD-9-CM Continuous mechanical ventilation procedure code:

9672	CONT INV MEC VEN 96+ HRS
------	--------------------------

Exclude cases:

- with a principal ICD-9-CM diagnosis code for pressure ulcer (see above)
- with any secondary ICD-9-CM diagnosis codes for pressure ulcer (see above) present on admission and any secondary ICD-9-CM diagnosis codes for pressure ulcer stage III or IV (or unstageable, see above) present on admission
- with any-listed ICD-9-CM procedure codes for debridement or pedicle graft (see above) before or on the same day as the major operating room procedure (surgical cases only)
- with any-listed ICD-9-CM procedure codes for debridement or pedicle graft (see above) as the only major operating room procedure (surgical cases only)
- neonates
- with length of stay of less than five (5) days
- transfer from a hospital (different facility)
- transfer from a Skilled Nursing Facility (SNF) or Intermediate Care Facility (ICF)
- transfer from another health care facility
- MDC 9 (skin, subcutaneous tissue, and breast)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year

(YEAR=missing) or principal diagnosis (DX1=missing)

See *Pediatric Quality Indicators Appendices*:

- Appendix I – Definitions of Neonate, Newborn, Normal Newborn, and Outborn
- Appendix J – Admission Codes for Transfers

Low Risk Category:

Surgical and medical discharges, for patients ages 17 years and younger, without any-listed ICD-9-CM diagnosis codes for hemiplegia, paraplegia, or quadriplegia (see above) and without any-listed ICD-9-CM diagnosis codes for spina bifida (see above) and without any-listed ICD-9-CM diagnosis codes for anoxic brain damage (see above) and without any-listed ICD-9-CM procedure codes for continuous mechanical ventilation (see above). Surgical and medical discharges are defined by specific DRG or MS-DRG codes.

See *Pediatric Quality Indicators Appendices*:

- Appendix B – Surgical DRGs
- Appendix C – Surgical MS-DRGs
- Appendix D – Medical DRGs
- Appendix E – Medical MS-DRGs

Exclude cases:

- with a principal ICD-9-CM diagnosis code for pressure ulcer (see above)
- with any secondary ICD-9-CM diagnosis codes for pressure ulcer (see above) present on admission and any secondary ICD-9-CM diagnosis codes for pressure ulcer stage III or IV (or unstageable, see above) present on admission
- with any-listed ICD-9-CM procedure codes for debridement or pedicle graft (see above) before or on the same day as the major operating room procedure (surgical cases only)
- with any-listed ICD-9-CM procedure codes for debridement or pedicle graft (see above) as the only major operating room procedure (surgical cases only)
- neonates
- with length of stay of less than five (5) days
- transfer from a hospital (different facility)
- transfer from a Skilled Nursing Facility (SNF) or Intermediate Care Facility (ICF)
- transfer from another health care facility
- MDC 9 (skin, subcutaneous tissue, and breast)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

See *Pediatric Quality Indicators Appendices*:

- Appendix I – Definitions of Neonate, Newborn, Normal Newborn, and Outborn
- Appendix J – Admission Codes for Transfers



TECHNICAL SPECIFICATIONS: PEDIATRIC QUALITY INDICATORS APPENDICES Version 5.0

Prepared for:

Agency for Healthcare Research and Quality
U.S. Department of Health and Human Services
540 Gaither Road Rockville, MD
20850
<http://www.qualityindicators.ahrq.gov>

Contract No. HHSA290201200003I, Task Order 4

Prepared by

Stanford University
Center for Primary Care and Outcomes Research
117 Encina Commons
Stanford, CA 94305

In collaboration with:

Truven Health Analytics
University of California, Davis

March 2015

Table of Contents

Appendix A – Operating Room Procedure Codes	1
Appendix B – Surgical DRGs	21
Appendix C – Surgical MS-DRGs	28
Appendix D – Medical DRGs	35
Appendix E – Medical MS-DRGs	41
Appendix F – High-Risk Immunocompromised State Diagnosis and Procedure Codes	47
Appendix G – Intermediate-Risk Immunocompromised State Diagnosis Codes	51
Appendix H – Infection Diagnosis Codes	54
Appendix I – Definitions of Neonate, Newborn, Normal Newborn, and Outborn	61
Appendix J – Admission Codes for Transfers	63
Appendix K – Stratification	64
Appendix L – Low Birth Weight Categories	65
Appendix M – Cancer	67

Appendix A – Operating Room Procedure Codes

ICD-9-CM Operating room procedure codes¹

0050	IMPL CRT PACEMAKER SYS	4974	GRACILIS MUSC TRANSPLAN
0051	IMPL CRT DEFIBRILLAT SYS	4975	IMPL OR REV ART ANAL SPH
0052	IMP/REP LEAD LF VEN SYS	4976	REMOV ART ANAL SPHINCTER
0053	IMP/REP CRT PACEMAKR GEN	4979	ANAL SPHINCT REPAIR NEC
0054	IMP/REP CRT DEFIB GENAT	4991	INCISION OF ANAL SEPTUM
0056	INS/REP IMPL SENSOR LEAD	4992	INSERT SUBQ ANAL STIMUL
0057	IMP/REP SUBCUE CARD DEV	4993	ANAL INCISION NEC
0061	PERC ANGIO PRECEREB VESS	4994	REDUCTION ANAL PROLAPSE
0062	PERC ANGIO INTRACRAN VES	4995	CONTROL ANAL HEMORRHAGE
0066	PTCA OR CORONARY ATHER	4999	ANAL OPERATION NEC
0070	REV HIP REPL-ACETAB/FEM	500	HEPATOTOMY
0071	REV HIP REPL-ACETAB COMP	5012	OPEN LIVER BIOPSY
0072	REV HIP REPL-FEM COMP	5013	TRANSJUGULAR LIVER BX
0073	REV HIP REPL-LINER/HEAD	5014	LAPAROSCOPIC LIVER BX
0080	REV KNEE REPLACENT-TOTAL	5019	HEPATIC DX PROC NEC
0081	REV KNEE REPL-TIBIA COMP	5021	MARSUPIALIZAT LIVER LES
0082	REV KNEE REPL-FEMUR COMP	5022	PARTIAL HEPATECTOMY
0083	REV KNEE REPLACE-PATELLA	5023	OPN ABLTN LIVER LES/TISS
0084	REV KNEE REPL-TIBIA LIN	5024	PERC ABLTN LIVER LES/TIS
0085	RESRF HIPTOTAL-ACET/FEM	5025	LAP ABLTN LIVER LES/TISS
0086	RESRF HIPPART-FEM HEAD	5026	ABLTN LIVER LES/TISS NEC
0087	RESRF HIPPART-ACETABLUM	5029	DESTRUC HEPATIC LES NEC
0094	INTRA-OP NEUROPHYS MONTR	503	HEPATIC LOBECTOMY
0110	INTRACRAN PRESSURE MONTR	504	TOTAL HEPATECTOMY
0112	OPEN CEREB MENINGES BX	5051	AUXILIARY LIVER TRANSPL
0114	OPEN BRAIN BIOPSY	5059	LIVER TRANSPLANT NEC
0115	SKULL BIOPSY	5061	CLOSURE LIVER LACERAT
0116	INTRACRANIAL O2 MONITOR	5069	LIVER REPAIR NEC
0117	BRAIN TEMP MONITORING	5102	TROCAR CHOLECYSTOSTOMY
0118	OTHER BRAIN DX PROCEDURE	5103	CHOLECYSTOSTOMY NEC
0119	OTHER SKULL DX PROCEDURE	5104	CHOLECYSTOTOMY NEC
0120	IMP/REPL BRAIN PULSE GEN	5113	OPEN BILIARY TRACT BX
0121	CRANIAL SINUS I & D	5119	BILIARY TR DX PROC NEC
0122	REMOV INTRACRAN STIMULAT	5121	OTH PART CHOLECYSTECTOMY
0123	REOPEN CRANIOTOMY SITE	5122	CHOLECYSTECTOMY
0124	OTHER CRANIOTOMY	5123	LAPAROSCOPIC CHOLECYSTEC
0125	OTHER CRANIECTOMY	5124	LAP PART CHOLECYSTECTOMY
0128	INTRACEREB CTH-BURR HOLE	5131	GB-TO-HEPAT DUCT ANAST
0129	REM BRAIN PULSE GENERATR	5132	GB-TO-INTESTINE ANASTOM
0131	INCISE CEREBRAL MENINGES	5133	GB-TO-PANCREAS ANASTOM
0132	LOBOTOMY & TRACTOTOMY	5134	GB-TO-STOMACH ANASTOMOS
0139	OTHER BRAIN INCISION	5135	GALLBLADDER ANASTOM NEC
0141	THALAMUS OPERATIONS	5136	CHOLEDOCHOENTEROSTOMY
0142	GLOBUS PALLIDUS OPS	5137	HEPATIC DUCT-GI ANASTOM
0151	EX CEREB MENINGEAL LES	5139	BILE DUCT ANASTOMOS NEC
0152	HEMISPHERECTOMY	5141	CDE FOR CALCULUS REMOV
0153	BRAIN LOBECTOMY	5142	CDE FOR OBSTRUCTION NEC
0159	OTHER BRAIN EXCISION	5143	CHOLEDOCHOHEPAT INTUBAT
016	EXCISE SKULL LESION	5149	INCIS OBSTR BILE DUC NEC
0201	LINEAR CRANIECTOMY	5151	COMMON DUCT EXPLORATION
0202	ELEVATE SKULL FX FRAGMNT	5159	BILE DUCT INCISION NEC
0203	SKULL FLAP FORMATION	5161	EXCIS CYST DUCT REMNANT
0204	BONE GRAFT TO SKULL	5162	EXCIS AMPULLA OF VATER
0205	SKULL PLATE INSERTION	5163	COMMON DUCT EXCIS NEC
0206	CRANIAL OSTEOPLASTY NEC	5169	BILE DUCT EXCISION NEC

0207	SKULL PLATE REMOVAL	5171	SIMPLE SUT-COMMON DUCT
0211	SIMPLE SUTURE OF DURA	5172	CHOLEDOCHOPLASTY
0212	BRAIN MENINGE REPAIR NEC	5179	BILE DUCT REPAIR NEC
0213	MENINGE VESSEL LIGATION	5181	SPHINCTER OF ODDI DILAT
0214	CHOROID PLEXECTOMY	5182	PANCREAT SPHINCTEROTOM
022	VENTRICULOSTOMY	5183	PANCREAT SPHINCTEROPLAS
0221	INSERTION OR REPLACEMENT OF EVD	5189	SPHINCT OF ODDI OP NEC
0222	INTRACRANIAL VENTRICULAR SHUNT OR ANASTOMOSIS	5191	REPAIR GB LACERATION
0231	VENTRICL SHUNT-HEAD/NECK	5192	CLOSURE CHOLECYSTOSTOMY
0232	VENTRI SHUNT-CIRCULA SYS	5193	CLOS BILIARY FISTUL NEC
0233	VENTRICL SHUNT-THORAX	5194	REVIS BILE TRACT ANASTOM
0234	VENTRICL SHUNT-ABDOMEN	5195	REMOVE BILE DUCT PROSTH
0235	VENTRI SHUNT-UNINARY SYS	5199	BILIARY TRACT OP NEC
0239	OTHER VENTRICULAR SHUNT	5201	CATH DRAIN-PANCREAT CYST
0242	REPLACE VENTRICLE SHUNT	5209	PANCREATOTOMY NEC
0243	REMOVE VENTRICLE SHUNT	5212	OPEN PANCREATIC BIOPSY
0291	LYSIS CORTICAL ADHESION	5219	PANCREATIC DX PROC NEC
0292	BRAIN REPAIR	522	PANCREATIC DX PROC NEC
0293	IMPLANT BRAIN STIMULATOR	5222	OTHER DESTRU PANCREA LES
0294	INSERT/REPLAC SKULL TONG	523	PANCREAT CYST MARSUPIALI
0299	SKULL & BRAIN OP NEC	524	INT DRAIN PANCREAT CYST
0301	REMOVAL FB SPINAL CANAL	5251	PROXIMAL PANCREATECTOMY
0302	REOPEN LAMINECTOMY SITE	5252	DISTAL PANCREATECTOMY
0309	SPINAL CANAL EXPLOR NEC	5253	RAD SUBTOT PANCREATECTOM
031	INTRASPIN NERVE ROOT DIV	5259	PARTIAL PANCREATECT NEC
0321	PERCUTANEOUS CHORDOTOMY	526	TOTAL PANCREATECTOMY
0329	OTHER CHORDOTOMY	527	RAD PANCREATICODUODENECT
0332	SPINAL CORD/MENINGES BX	5280	PANCREAT TRANSPLANT NOS
0339	OTHER SPINAL DX PROC	5281	REIMPLANT PANCREATIC TIS
034	EXCIS SPINAL CORD LESION	5282	PANCREATIC HOMOTRANSPLAN
0351	SPINE MENINGOCELE REPAIR	5283	PANCREATIC HETEROTRANSPL
0352	MYELOMENINGOCEL REPAIR	5291	TRNSPLNT ISLETS LANG NOS
0353	VERTEBRAL FX REPAIR	5292	CANNULATION PANCREA DUC
0359	SPINAL STRUCT REPAIR NEC	5295	PANCREATIC REPAIR NEC
036	SPINAL CORD ADHESIOLYSIS	5296	PANCREATIC ANASTOMOSIS
0371	SUBARACH-PERITON SHUNT	5299	PANCREATIC OPERATION NEC
0372	SUBARACH-URETERAL SHUNT	5300	UNILAT ING HERN REP NOS
0379	OTH SPINAL THECAL SHUNT	5301	REPAIR DIRECT ING HERNIA
0393	INSERT SPINAL STIMULATOR	5302	REPAIR INDIR ING HERNIA
0394	REMOVE SPINAL STIMULATOR	5303	DIR ING HERNIA REP-GRAFT
0397	REVISE SPINE THECA SHUNT	5304	IND ING HERNIA REP-GRAFT
0398	REMOVE SPINE THECA SHUNT	5305	ING HERNIA REP-GRAFT NOS
0399	SPINE CANAL STRUC OP NEC	5310	BILAT ING HERNIA REP NOS
0401	EXCISION ACOUSTC NEUROMA	5311	BILAT DIR ING HERN REP
0402	TRIGEMINAL NERV DIVISION	5312	BILAT IND ING HERN REP
0403	PERIPH NERVE DIV NEC	5313	BIL DIR/IND ING HRN REP
0404	PERIPH NERVE INCIS NEC	5314	BIL DIR ING HRN REP-GRFT
0405	GASSERIAN GANGLIONECTOMY	5315	BIL IND ING HRN REP-GRFT
0406	PERIPH GANGLIONECT NEC	5316	BIL DIR/IND ING HERN-PRO
0407	PERIPH NERV EXCISION NEC	5317	BIL ING HRN REP-GRFT NOS
0412	OPEN PERIPH NERVE BIOPSY	5321	UNIL FEMOR HRN REP-GRFT
0419	PERIPH NERVE DX PROC NEC	5329	UNIL FEMOR HERN REP NEC
043	PERIPHERAL NERVE SUTURE	5331	BIL FEM HERN REPAIR-GRFT
0441	DECOMPRESS TRIGEM ROOT	5339	BIL FEM HERN REPAIR NEC
0442	CRAN NERV ROOT DECOM NEC	5341	UMBIL HERNIA REPAIR-GRFT
0443	CARPAL TUNNEL RELEASE	5342	LAP UMBIL HERNIA-GRAFT
0444	TARSAL TUNNEL RELEASE	5343	LAP UMBILICAL HERNIA NEC
0449	PER NERVE ADHESIOLYS NEC	5349	UMBIL HERNIA REPAIR NEC
045	PERIPHERAL NERVE GRAFT	5351	INCISIONAL HERNIA REPAIR
046	PERIPH NERVE TRANSPOSIT	5359	ABD WALL HERN REPAIR NEC
0471	HYPOGLOSS-FACIAL ANASTOM	5361	INCIS HERNIA REPAIR-GRFT

0472	ACCESSORY-FACIAL ANASTOM	5362	LAP INCIS HERN REPR-GRFT
0473	ACCESS-HYPOGLOSS ANASTOM	5363	LAP HERN ANT ABD-GFT NEC
0474	PERIPH NERV ANASTOM NEC	5369	ABD HERN REPAIR-GRFT NEC
0475	POSTOP REVIS PER NERV OP	537	ABD REPAIR-DIAPHR HERNIA
0476	LATE REPAIR PER NERV INJ	5371	LAP ABD REP-DIAPHR HERN
0479	OTHER NEUROPLASTY	5372	OPN ABD DIAPHRM HERN NEC
0491	NEURECTASIS	5375	ABD REP-DIAPHR HERN NOS
0492	IMPLANT PERIPH STIMULAT	5380	THOR REP-DIAPH HERN NOS
0493	REMOVE PERIPH STIMULATOR	5381	DIAPHRAGMATIC PPLICATION
0499	PERIPHERAL NERVE OPS NEC	5382	PARASTERN HERNIA REPAIR
050	SYMPATH NERVE DIVISION	5383	LAP THORC APP-DIAPH HERN
0511	SYMPATHETIC NERVE BIOPSY	5384	OPN THORC DIAPH HERN NEC
0519	SYMPATH NRV DX PROC NEC	539	OTHER HERNIA REPAIR
0521	SPHENOPALATIN GANGLIONEC	540	ABDOMINAL WALL INCISION
0522	CERVICAL SYMPATHECTOMY	5411	EXPLORATORY LAPAROTOMY
0523	LUMBAR SYMPATHECTOMY	5412	REOPEN RECENT LAP SITE
0524	PRESACRAL SYMPATHECTOMY	5419	LAPAROTOMY NEC
0525	PERIART SYMPATHECTOMY	5421	LAPAROSCOPY
0529	OTHER SYMPATHECTOMY	5422	ABDOMINAL WALL BIOPSY
0581	SYMPATHETIC NERVE REPAIR	5423	PERITONEAL BIOPSY
0589	SYMPATHETIC NERVE OP NEC	5429	ABD REGION DX PROC NEC
059	OTHER NERVOUS SYSTEM OPS	543	DESTRUCT ABD WALL LESION
0602	REOPEN THYROID FIELD WND	544	DESTRUCT PERITONEAL TISS
0609	INCIS THYROID FIELD NEC	545	DESTRUCT PERITONEAL TISS
0612	OPEN THYROID GLAND BX	5451	LAP PERITON ADHESIOLYSIS
0613	PARATHYROID BIOPSY	5459	OTH PERITON ADHESIOLYSIS
0619	THYR/PARATHY DX PROC NEC	5461	RECLOSE POST OP DISRUPT
062	UNILAT THYROID LOBECTOMY	5462	DELAYED CLOS ABD WOUND
0631	EXCISION THYROID LESION	5463	ABD WALL SUTURE NEC
0639	PART THYROIDECTOMY NEC	5464	PERITONEAL SUTURE
064	COMPLETE THYROIDECTOMY	5471	REPAIR OF GASTROSCHISIS
0650	SUBSTERN THYROIDECT NOS	5472	ABDOMEN WALL REPAIR NEC
0651	PART SUBSTERN THYROIDECT	5473	PERITONEAL REPAIR NEC
0652	TOT SUBSTERN THYROIDECT	5474	OMENTAL REPAIR NEC
066	LINGUAL THYROID EXCISION	5475	MESENTERIC REPAIR NEC
067	THYROGLOSS DUCT EXCISION	5492	REMOVE FB FROM PERITON
0681	TOTAL PARATHYROIDECTOMY	5493	CREATE CUTANPERITON FIST
0689	OTHER PARATHYROIDECTOMY	5494	CREAT PERITONEOVAS SHUNT
0691	THYROID ISTHMUS DIVISION	5495	PERITONEAL INCISION
0692	THYROID VESSEL LIGATION	5501	NEPHROTOMY
0693	THYROID SUTURE	5502	NEPHROSTOMY
0694	THYROID REIMPLANTATION	5503	PERCU NEPHROSTM W/O FRAG
0695	PARATHYROID REIMPLANT	5504	PERCU NEPHROSTMY W FRAG
0698	OTHER THYROID OPERATIONS	5511	PYELOTOMY
0699	OTHER PARATHYROID OPS	5512	PYELOSTOMY
0700	ADRENAL EXPLORATION NOS	5524	OPEN RENAL BIOPSY
0701	UNILAT ADRENAL EXPLORAT	5529	RENAL DIAGNOST PROC NEC
0702	BILAT ADRENAL EXPLORAT	5531	RENAL LES MARSUPIALIZAT
0712	OPEN ADRENAL GLAND BX	5532	OPN ABLTN RENAL LES/TISS
0713	TRANSFRONT PITUITARY BX	5533	PERC ABLTN RENL LES/TISS
0714	TRANSPHEN PITUITARY BX	5534	LAP ABLTN RENAL LES/TISS
0715	PITUITARY BIOPSY NOS	5535	ABLTN RENAL LES/TISS NEC
0716	THYMUS BIOPSY	5539	LOC DESTR RENAL LES NEC
0717	PINEAL BIOPSY	554	PARTIAL NEPHRECTOMY
0719	ENDOCRINE DX PROC NEC	5551	NEPHROURETERECTOMY
0721	ADRENAL LESION EXCISION	5552	SOLITARY KIDNEY NEPHRECT
0722	UNILATERAL ADRENALECTOMY	5553	REJECTED KIDNEY NEPHRECT
0729	PART ADRENALECTOMY NEC	5554	BILATERAL NEPHRECTOMY
073	BILATERAL ADRENALECTOMY	5561	RENAL AUTOTRANSPLANT
0741	ADRENAL INCISION	5569	KIDNEY TRANSPLANT NEC
0742	ADRENAL NERVE DIVISION	557	NEPHROPEXY
0743	ADRENAL VESSEL LIGATION	5581	SUTURE KIDNEY LACERATION

0744	ADRENAL REPAIR	5582	CLOSE NEPHROST & PYELOST
0745	ADRENAL REIMPLANTATION	5583	CLOSE RENAL FISTULA NEC
0749	ADRENAL OPERATION NEC	5584	REDUCE RENAL PEDICL TORS
0751	PINEAL FIELD EXPLORATION	5585	SYMPHYSIOTOMY
0752	PINEAL GLAND INCISION	5586	RENAL ANASTOMOSIS
0753	PARTIAL PINEALECTOMY	5587	CORRECT URETEROPELV JUNC
0754	TOTAL PINEALECTOMY	5589	RENAL REPAIR NEC
0759	PINEAL OPERATION NEC	5591	RENAL DECAPSULATION
0761	EXC PITUIT LES-TRANSFRON	5597	IMPLANT MECHANIC KIDNEY
0762	EXC PITUIT LES-TRANSPHEN	5598	REMOV MECHANICAL KIDNEY
0763	PART EXCIS PITUITARY NOS	5599	RENAL OPERATION NEC
0764	TOT EXC PITUIT-TRANSFRON	560	TU REMOV URETER OBSTRUCT
0765	TOT EXC PITUIT-TRANSPHEN	561	URETERAL MEATOTOMY
0768	TOTAL EXC PITUITARY NEC	562	URETEROTOMY
0769	TOTAL EXC PITUITARY NOS	5634	OPEN URETERAL BIOPSY
0771	PITUITARY FOSSA EXPLORAT	5639	URETERAL DX PROCEDUR NEC
0772	PITUITARY GLAND INCISION	5640	URETERECTOMY NOS
0779	PITUITARY OPERATION NEC	5641	PARTIAL URETERECTOMY
0780	THYMECTOMY NOS	5642	TOTAL URETERECTOMY
0781	PART EXCISION OF THYMUS	5651	FORM CUTAN ILEOURETEROST
0782	TOTAL EXCISION OF THYMUS	5652	REVIS CUTAN ILEOURETEROS
0783	THORAC PART EXISN THYMUS	5661	FORM CUTAN URETEROSTOMY
0784	THORAC TOTAL EXC THYMUS	5662	REVIS CUTAN URETEROS NEC
0791	THYMUS FIELD EXPLORATION	5671	URIN DIVERSION TO BOWEL
0792	INCISION OF THYMUS	5672	REVIS URETEROENTEROSTOMY
0793	REPAIR OF THYMUS	5673	NEPHROCYSTANASTOMOSI NOS
0794	THYMUS TRANSPLANTATION	5674	URETERONEOCYSTOSTOMY
0795	THORAC INCISION THYMUS	5675	TRANSURETEROURETEROSTOMY
0798	OTH THORAC OP THYMUS NOS	5679	URETERAL ANASTOMOSIS NEC
0799	THYMUS OPERATION NEC	5681	INTRALUM URETE ADHESIOLY
0811	EYELID BIOPSY	5682	SUTURE URETERAL LACERAT
0820	REMOVE EYELID LESION NOS	5683	URETEROSTOMY CLOSURE
0821	CHALAZION EXCISION	5684	CLOSE URETER FISTULA NEC
0822	EXCISE MINOR LES LID NEC	5685	URETEROPEXY
0823	EXC MAJ LES LID PRT-THIC	5686	REMOVE URETERAL LIGATURE
0824	EXC MAJ LES LID FUL-THIC	5689	REPAIR OF URETER NEC
0825	DESTRUCTION LID LESION	5692	IMPLANT URETERAL STIMUL
0831	PTOSIS REP-FRONT MUS SUT	5693	REPLACE URETERAL STIMUL
0832	PTOSIS REP-FRONT MUS SLNG	5694	REMOVE URETERAL STIMULAT
0833	PTOSIS REP-LEVAT MUS ADV	5695	LIGATION OF URETER
0834	PTOSIS REP-LEVAT MUS NEC	5699	URETERAL OPERATION NEC
0835	PTOS REP-TARSAL TECHNIQ	5712	CYSTOTOMY & ADHESIOLYSIS
0836	BLEPHAROPTOS REPAIR NEC	5718	OTHER SUPRAPU CYSTOSTOMY
0837	REDUC OVERCORRECT PTOSIS	5719	CYSTOTOMY NEC
0838	CORRECT LID RETRACTION	5721	VESICOSTOMY
0841	THERMOCAUT/ENTROPION REP	5722	REVISE CLO VESICOSTOMY
0842	SUTURE ENTROPION REPAIR	5733	CLOS TRANSURETH BLADD BX
0843	WEDG RESEC ENTROPION REP	5734	OPEN BLADDER BIOPSY
0844	LID RECONS ENTROPION REP	5739	BLADDER DIAGNOS PROC NEC
0849	ENTROPION/ECTROP REP NEC	5741	TU ADHESIOLYSIS BLADDER
0851	CANTHOTOMY	5749	TU DESTRUC BLADD LES NEC
0852	BLEPHARORRHAPHY	5751	EXCISION OF URACHUS
0859	ADJUST LID POSITION NEC	5759	BLADDER LES DESTRUCT NEC
0861	LID RECONST W SKIN GRAFT	576	PARTIAL CYSTECTOMY
0862	LID RECONST W MUC GRAFT	5771	RADICAL CYSTECTOMY
0863	LID RECONST W HAIR GRAFT	5779	TOTAL CYSTECTOMY NEC
0864	LID RECON-TARSOCONJ FLAP	5781	SUTURE BLADDER LACERAT
0869	LID RECONSTR W GRAFT NEC	5782	CYSTOSTOMY CLOSURE
0870	LID RECONSTRUCTION NOS	5783	ENTEROVESICO FIST REPAIR
0871	LID MARG RECON-PART THIC	5784	VESIC FISTULA REPAIR NEC
0872	LID RECONS-PART THIC NEC	5785	CYSTOURETHROPLASTY
0873	LID MARG RECONS FUL THIC	5786	BLADDER EXSTROPHY REPAIR

0874	LID RECONST-FUL THIC NEC	5787	BLADDER RECONSTRUCTION
0891	ELECTROSURG LID EPILAT	5788	BLADDER ANASTOMOSIS NEC
0892	CRYOSURG LID EPILATION	5789	BLADDER REPAIR NEC
0893	EYELID EPILATION NEC	5791	BLADDER SPHINCTEROTOMY
0899	EYELID OPERATION NEC	5793	CONTROL BLADD HEMORRHAGE
090	LACRIMAL GLAND INCISION	5796	IMPLANT BLADDER STIMULAT
0911	LACRIMAL GLAND BIOPSY	5797	REPLACE BLADDER STIMULAT
0912	LACRIMAL SAC BIOPSY	5798	REMOVE BLADDER STIMULAT
0919	LACRIMAL SYS DX PROC NEC	5799	BLADDER OPERATION NEC
0920	EXC LACRIMAL GLAND NOS	580	URETHROTOMY
0921	EXCIS LES LACRIMAL GLAND	581	URETHRAL MEATOTOMY
0922	PART DACRYOADENECT NEC	5841	SUTURE URETHRAL LACERAT
0923	TOTAL DACRYOADENECTOMY	5842	URETHROSTOMY CLOSURE
093	OTHER LACRIMAL GLAND OPS	5843	CLOSE URETH FISTULA NEC
0941	LACRIMAL PUNCTUM PROBE	5844	URETHRAL REANASTOMOSIS
0942	LAC CANALICULI PROBE	5845	HYPO-EPISPADIUS REPAIR
0943	NASOLACRIMAL DUCT PROBE	5846	URETH RECONSTRUCTION NEC
0944	NASOLAC DUCT INTUBAT	5847	URETHRAL MEATOPLASTY
0949	LAC PASSAGE MANIP NEC	5849	URETHRAL REPAIR NEC
0951	LAC PUNCTUM INCISION	585	URETH STRICTURE RELEASE
0952	LAC CANALICULI INCISION	5891	PERIURETHRAL INCISION
0953	LACRIMAL SAC INCISION	5892	PERIURETHRAL EXCISION
0959	LACRIM PASSAGE INCIS NEC	5893	IMPLT ARTF URIN SPHINCT
096	LACRIM SAC/PASSAGE EXCIS	5899	URETH/PERIURETH OP NEC
0971	CORRECT EVERTED PUNCTUM	5900	RETROPERIT DISSECT NOS
0972	PUNCTUM REPAIR NEC	5901	RETROPERIT DISSECT NOS
0973	CANALICULUS REPAIR	5902	PERIREN ADHESIO LYS NEC
0981	DACRYOCYSTORHINOSTOMY	5903	LAP LYS PERIREN/URET ADH
0982	CONJUNCTIVOCYSTORHINOST	5909	PERIREN/URETER INCIS NEC
0983	CONJUNCTIVORHINOS W TUBE	5911	OTH LYS PERIVES ADHESIO
0991	LAC PUNCTUM OBLITERATION	5912	LAP LYS PERIVESURETH ADH
0999	LACRIMAL SYSTEM OP NEC	5919	PERIVESICAL INCISION NEC
100	INCISE/REMOV CONJUNCT FB	5921	PERIREN/URETERAL BIOPSY
101	CONJUNCTIVA INCISION NEC	5929	PERIREN/URET DX PROC NEC
1021	CONJUNCTIVAL BIOPSY	593	URETHROVES JUNCT PLICAT
1029	CONJUNCTIVA DX PROC NEC	594	SUPRAPUBIC SLING OP
1031	EXCISE CONJUNCTIV LESION	595	RETROPUBIC URETH SUSPENS
1032	DESTRUCT CONJUNC LES NEC	596	PARAURETHRAL SUSPENSION
1033	OTH CONJUNC DESTRUCT PROC	5971	LEVATOR MUSC SUSPENSION
1041	SYMBLEPH REP W FREE GRFT	5979	URIN INCONTIN REPAIR NEC
1042	GRAFT CONJUNC CUL-DE-SAC	5991	PERIREN/VESICLE EXCISION
1043	CONJUN CUL-DE-SAC RX NEC	5992	PERIREN/VESICLE OP NEC
1044	CONJUNC FREE GRAFT NEC	600	INCISION OF PROSTATE
1049	CONJUNCTIVOPLASTY NEC	6012	OPEN PROSTATIC BIOPSY
105	CONJUNC/LID ADHESIO LYSIS	6014	OPEN SEMINAL VESICLES BX
106	REPAIR CONJUNCT LACERAT	6015	PERIPROSTATIC BIOPSY
1091	SUBCONJUNCTIVAL INJECT	6018	PROSTATIC DX PROCED NEC
1099	CONJUNCTIVAL OP NEC	6019	SEMIN VES DX PROCED NEC
110	MAGNET REMOVAL CORNEA FB	602	SEMIN VES DX PROCED NEC
111	CORNEAL INCISION	6021	TRANSURETH PROSTATECTOMY
1121	CORNEAL SCRAPE FOR SMEAR	6029	OTH TRANSURETH PROSTATECT
1122	CORNEAL BIOPSY	603	SUPRAPUBIC PROSTATECTOMY
1129	CORNEAL DX PROC NEC	604	RETROPUBIC PROSTATECTOMY
1131	PTERYGIUM TRANSPOSITION	605	RADICAL PROSTATECTOMY
1132	PTERYG EXC W CORNEA GRFT	6061	LOS EXCIS PROSTATIC LES
1139	PTERYGIUM EXCISION NEC	6062	PERINEAL PROSTATECTOMY
1141	MECH REMOV CORNEA EPITH	6069	PROSTATECTOMY NEC
1142	THERMOCAUT CORNEA LESION	6072	SEMINAL VESICLE INCISION
1143	CRYOTHERAP CORNEA LESION	6073	SEMINAL VESICLE EXCISION
1149	DESTRUCT CORNEA LES NEC	6079	SEMINAL VESICLE OP NEC
1151	SUTURE CORNEA LACERATION	6081	PERIPROSTATIC INCISION
1152	REP CORNEA POSTOP DEHISC	6082	PERIPROSTATIC EXCISION

1153	RX CORNEA LAC W CONJ FLP	6093	REPAIR OF PROSTATE
1159	CORNEAL REPAIR NEC	6094	CONTROL PROSTATE HEMORR
1160	CORNEAL TRANSPLANT NOS	6095	TRANS BAL DIL PROS URETH
1161	LAM KERATPLAST W AUTGRFT	6096	TU DESTR PROSTATE BY MT
1162	LAMELLAR KERATOPLAST NEC	6097	OTH TU DESTR PROS - RT
1163	PERF KERATOPL W AUTOGRFT	6099	PROSTATIC OPERATION NEC
1164	PERFORAT KERATOPLAST NEC	612	EXCISION OF HYDROCELE
1169	CORNEAL TRANSPLANT NEC	6142	SCROTAL FISTULA REPAIR
1171	KERATOMILEUSIS	6149	SCROTUM/TUNIC REPAIR NEC
1172	KERATOPHAKIA	6192	EXCISION TUNICA LES NEC
1173	KERATOPROSTHESIS	6199	SCROTUM & TUNICA OP NEC
1174	THERMOKERATOPLASTY	620	INCISION OF TESTES
1175	RADIAL KERATOTOMY	6212	OPEN TESTICULAR BIOPSY
1176	EPIKERATOPHAKIA	6219	TESTES DX PROCEDURE NEC
1179	CORNEA RECONSTRUCT NEC	622	TESTICULAR LES DESTRUCT
1191	CORNEAL TATTOOING	623	UNILATERAL ORCHIECTOMY
1192	REMOVE CORNEAL IMPLANT	6241	REMOVE BOTH TESTES
1199	CORNEAL OPERATION NEC	6242	REMOVE SOLITARY TESTIS
1200	REMOV ANT SEGMNT FB NOS	625	ORCHIOPEXY
1201	MAGNET REMOV ANT SEG FB	6261	SUTURE TESTICULAR LACER
1202	NONMAG REMOV ANT SEG FB	6269	TESTICULAR REPAIR NEC
1211	IRIDOTOMY W TRANSFIXION	627	INSERT TESTICULAR PROSTH
1212	IRIDOTOMY NEC	6299	TESTICULAR OPERATION NEC
1213	PROLAPSED IRIS EXCISION	6309	SPERMAT CORD/VAS DX NEC
1214	IRIDECTOMY NEC	631	EXC SPERMATIC VARICOCELE
1221	DX ASPIRAT-ANT CHAMBER	632	EXCISE EPIDIDYMIS CYST
1222	IRIS BIOPSY	633	EXCISE CORD/EPID LES NEC
1229	ANT SEGMENT DX PROC NEC	634	EPIDIDYMECTOMY
1231	GONIOSYNECHIAE LYSIS	6351	SUTURE CORD & EPID LACER
1232	ANT SYNECHIA LYSIS NEC	6353	TRANSPLANT SPERMAT CORD
1233	POST SYNECHIAE LYSIS	6359	CORD & EPIDID REPAIR NEC
1234	CORNEOVITREAL ADHESIO LYS	6381	SUTURE VAS & EPIDID LAC
1235	COREOPLASTY	6382	POSTOP VAS RECONSTRUCT
1239	IRIDOPLASTY NEC	6383	EPIDIDYMOVASOSTOMY
1240	REMOV ANT SEGMNT LES NOS	6385	REMOV VAS DEFERENS VALVE
1241	NONEXC DESTRUC IRIS LES	6389	VAS & EPIDIDY REPAIR NEC
1242	EXCISION OF IRIS LESION	6392	EPIDIDYMYOTOMY
1243	NONEXC DESTR CIL BOD LES	6393	SPERMATIC CORD INCISION
1244	EXCISE CILIARY BODY LES	6394	SPERM CORD ADHESIO LYSIS
1251	GONIOPUNCTURE	6395	INSERT VALVE IN VAS DEF
1252	GONIOTOMY	6399	CORD/EPID/VAS OPS NEC
1253	GONIOTOMY W GONIOPUNCTUR	6411	PENILE BIOPSY
1254	TRABECULOTOMY AB EXTERNO	642	LOCAL EXCIS PENILE LES
1255	CYCLODIALYSIS	643	AMPUTATION OF PENIS
1259	FACILIT INTRAOC CIRC NEC	6441	SUTURE PENILE LACERATION
1261	TREPHIN SCLERA W IRIDECT	6442	RELEASE OF CHORDEE
1262	THERMCAUT SCLER W IRIDEC	6443	CONSTRUCTION OF PENIS
1263	IRIDENCLEISIS/IRIDOTASIS	6444	RECONSTRUCTION OF PENIS
1264	TRABECULECTOM AB EXTERNO	6445	REPLANTATION OF PENIS
1265	SCLER FISTULIZ W IRIDECT	6449	PENILE REPAIR NEC
1266	POSTOP REVIS SCL FISTUL	645	SEX TRANSFORMAT OP NEC
1267	INSERTION OF AQUEOUS DRAINAGE DEVICE	6492	INCISION OF PENIS
1269	SCLER FISTULIZING OP NEC	6493	DIVISION OF PENILE ADHES
1271	CYCLODIATHERMY	6495	INS NONINFL PENIS PROSTH
1272	CYCLOCRYOTHERAPY	6496	REMOVE INT PENILE PROSTH
1273	CYCLOPHOTOCOAGULATION	6497	INS INFLATE PENIS PROSTH
1274	CIL BODY DIMINUTION NOS	6498	PENILE OPERATION NEC
1279	GLAUCOMA PROCEDURE NEC	6499	MALE GENITAL OP NEC
1281	SUTURE SCLERAL LACER	650	MALE GENITAL OP NEC
1282	SCLERAL FISTULA REPAIR	6501	LAPAROSCOPIC OOPHOROTOMY
1283	REVIS ANT SEG OP WND NEC	6509	OTHER OOPHOROTOMY

1284	DESTRUCT SCLERAL LESION	6511	OVARIAN ASPIRAT BIOPSY
1285	REPAIR STAPHYLOM W GRAFT	6512	OVARIAN BIOPSY NEC
1286	REP SCLER STAPHYLOMA NEC	6513	LAP BIOPSY OF OVARY
1287	GRAFT REINFORCE SCLERA	6514	OTH LAP DX PROC OVARIES
1288	SCLERA REINFORCEMENT NEC	6519	OVARIAN DX PROCEDURE NEC
1289	SCLERAL OPERATION NEC	6521	OVARIAN CYST MARSUPIALIZ
1291	THERAPEUT EVAC ANT CHAMB	6522	OVARIAN WEDGE RESECTION
1292	ANTERIOR CHAMBER INJECT	6523	LAP MARSUP OVARIAN CYST
1293	REMOV EPITHEL DOWNGROWTH	6524	LAP WEDGE RESECT OVARY
1297	IRIS OPERATION NEC	6525	OTH LAP LOC EXC DEST OVA
1298	CILIARY BODY OP NEC	6529	LOCAL DESTR OVA LES NEC
1299	ANTERIOR CHAMBER OP NEC	653	LOCAL DESTR OVA LES NEC
1300	REMOVE FB LENS NOS	6531	LAP UNILAT OOPHORECTOMY
1301	MAGNET REMOVE FB LENS	6539	OTH UNILAT OOPHORECTOMY
1302	NONMAGNET REMOVE FB LENS	654	OTH UNILAT OOPHORECTOMY
1311	TEMP-INF INTRCAP LENS EX	6541	LAP UNI SALPINGO-OOPHOR
1319	INTRACAPSUL LENS EXT NEC	6549	OTH UNI SALPINGO-OOPHOR
132	LINEAR EXTRACAP LENS EXT	6551	OTH REMOVE BOTH OVARIES
133	SIMPL ASPIR LENS EXTRACT	6552	OTH REMOVE REMAIN OVARY
1341	CATARAC PHACOEMULS/ASPIR	6553	LAP REMOVE BOTH OVARIES
1342	POST CATARAC FRAG/ASPIR	6554	LAP REMOVE REMAIN OVARY
1343	CATARACT FRAG/ASPIR NEC	6561	OTH REMOVE OVARIES/TUBES
1351	TEMP-INF XTRACAP LENS EX	6562	OTH REMOVE REM OVA/TUBE
1359	EXTRACAP LENS EXTRAC NEC	6563	LAP REMOVE OVARIES/TUBES
1361	EXTRACAP LENS EXTRAC NEC	6564	LAP REMOVE REM OVA/TUBE
1362	EXTRACAP LENS EXTRAC NEC	6571	OTH SIMPLE SUTURE OVARY
1363	EXTRACAP LENS EXTRAC NEC	6572	OTH REIMPLANT OF OVARY
1364	AFTER-CATAR DISCISSION	6573	OTH SALPINGO-OOPHOROPLAS
1365	AFTER-CATARACT EXCISION	6574	LAP SIMPLE SUTURE OVARY
1366	AFTER CATAR FRAGMNTATION	6575	LAP REIMPLANT OF OVARY
1369	CATARACT EXTRACTION NEC	6576	LAP SALPINGO-OOPHOROPLAS
1370	INSERT PSEUDOPHAKOS NOS	6579	REPAIR OF OVARY NEC
1371	INSERT LENS AT CATAR EXT	658	REPAIR OF OVARY NEC
1372	SECONDARY INSERT LENS	6581	LAP ADHESIOLYS OVA/TUBE
138	IMPLANTED LENS REMOVAL	6589	ADHESIOLYSIS OVARY/TUBE
139	OTHER OPERATIONS ON LENS	6591	ASPIRATION OF OVARY
1390	OPERATION ON LENS NEC	6592	TRANSPLANTATION OF OVARY
1391	IMPL INTRAOC TEDESC PROS	6593	MANUAL RUPT OVARIAN CYST
1400	REMOV POST SEGMNT FB NOS	6594	OVARIAN DENERVATION
1401	MAGNET REMOV POST SEG FB	6595	OVARIAN TORSION RELEASE
1402	NONMAG REMOV POST SEG FB	6599	OVARIAN OPERATION NEC
1411	DIAGNOST VITREOUS ASPIR	660	OVARIAN OPERATION NEC
1419	DX PROC POST SEG NEC	6601	SALPINGOTOMY
1421	CHORIORET LES DIATHERMY	6602	SALPINGOSTOMY
1422	CHORIORETIN LES CRYOTHER	6611	FALLOPIAN TUBE BIOPSY
1426	CHORIORET LES RADIOOTHER	6619	FALLOP TUBE DX PROC NEC
1427	CHORIORET LES RAD IMPLAN	6621	BILAT ENDOSC CRUSH TUBE
1429	CHORIORET LES DESTR NEC	6622	BILAT ENDOSC DIVIS TUBE
1431	RETINAL TEAR DIATHERMY	6629	BILAT ENDOS OCC TUBE NEC
1432	RETINAL TEAR CRYOTHERAPY	6631	BILAT TUBAL CRUSHING NEC
1439	RETINAL TEAR REPAIR NEC	6632	BILAT TUBAL DIVISION NEC
1441	SCLERAL BUCKLE W IMPLANT	6639	BILAT TUBAL DESTRUCT NEC
1449	SCLERAL BUCKLING NEC	664	TOTAL UNILAT SALPINGECT
1451	DETACH RETINA-DIATHERMY	6651	REMOVE BOTH FALLOP TUBES
1452	DETACH RETINA-CRYOTHERAP	6652	REMOVE SOLITARY FAL TUBE
1453	DETACH RETINA XENON COAG	6661	DESTROY FALLOP TUBE LES
1454	DETACH RETINA LASER COAG	6662	REMOV TUBE & ECTOP PREG
1455	DETACH RET PHOTOCOAG NOS	6663	BILAT PART SALPINGEC NOS
1459	REPAIR RETINA DETACH NEC	6669	PARTIAL SALPINGECTOM NEC
146	REMOV PROS MAT POST SEG	6671	SIMPL SUTURE FALLOP TUBE
1471	ANTERIOR REMOV VITREOUS	6672	SALPINGO-OOPHOROSTOMY
1472	VITREOUS REMOVAL NEC	6673	SALPINGO-SALPINGOSTOMY

1473	ANTERIOR MECHAN VITRECT	6674	SALPINGO-UTEROSTOMY
1474	MECH VITRECTOMY NEC	6679	FALLOP TUBE REPAIR NEC
1475	VITREOUS SUBSTITUT INJEC	6692	UNILAT FALLOP TUBE DESTR
1479	VITREOUS OPERATION NEC	6693	IMPL FALLOP TUBE PROSTH
149	OTHER POST SEGMENT OPS	6694	REMOV FALLOP TUBE PROSTH
1501	EXTRAOC MUSC-TEND BIOPSY	6695	BLOW THERAPEUT INTO TUBE
1509	EXTRAOC MUSC DX PROC NEC	6696	FALLOPIAN TUBE DILATION
1511	ONE EXTRAOC MUS RECESS	6697	BURY FIMBRIAE IN UTERUS
1512	1 EXTRAOC MUSCL ADVANCE	6699	FALLOPIAN TUBE OP NEC
1513	1 EXTRAOC MUSCL RESECT	6711	ENDOCERVICAL BIOPSY
1519	XTRAOC MUS OP/DETACH NEC	6712	CERVICAL BIOPSY NEC
1521	LENGTHEN 1 EXTRAOC MUSC	6719	CERVICAL DX PROCEDUR NEC
1522	SHORTEN 1 EXTRAOC MUSC	672	CONIZATION OF CERVIX
1529	OP ON 1 EXTRAOC MUSC NEC	6731	CERVICAL CYST MARSUPIAL
153	TEMP DETACH >1 XTROC MUS	6732	CERVICAL LES CAUTERIZAT
154	OTH OP ON >L EXTRAOC MUS	6733	CERVICAL LES CRYOTHERAPY
155	EXTRAOCUL MUS TRANSPOSIT	6739	CERVICAL LES DESTRUC NEC
156	REVIS EXTRAOC MUSC SURG	674	AMPUTATION OF CERVIX
157	EXTRAOC MUSC INJ REPAIR	675	AMPUTATION OF CERVIX
159	OTH EXTRAOC MUS-TEND OP	6751	TRANSAB CERCLAGE CERVIX
1601	ORBITOTOMY W BONE FLAP	6759	OTH REP INT CERVICAL OS
1602	ORBITOTOMY W IMPLANT	6761	SUTURE CERVICAL LACERAT
1609	ORBITOTOMY NEC	6762	CERVICAL FISTULA REPAIR
161	REMOVE PENETRAT FB EYE	6769	CERVICAL REPAIR NEC
1622	DIAGNOSTIC ASP OF ORBIT	680	HYSTEROTOMY
1623	EYEBALL & ORBIT BIOPSY	6813	OPEN UTERINE BIOPSY
1629	EYEBAL/ORBIT DX PROC NEC	6814	OPEN UTERINE LIGAMENT BX
1631	EYE EVISC W SYNCH IMPLAN	6815	CLOS UTERINE LIGAMENT BX
1639	EYEBALL EVISCERATION NEC	6816	CLOSED UTERINE BIOPSY
1641	EYE ENUC/IMPLAN/MUSC ATT	6819	UTERUS/ADNEX DX PROC NEC
1642	EYE ENUC W IMPLANT NEC	6821	ENDOMET SYNECHIAE DIVIS
1649	EYEBALL ENUCLEATION NEC	6822	INCISION UTERINE SEPTUM
1651	RADICAL ORBITOMAXILLECT	6823	ENDOMETRIAL ABLATION
1652	ORBIT EXENT W BONE REMOV	6824	UTERINE ARTERY EMBOLIZATION [UAE] WITH COILS
1659	ORBITAL EXENTERATION NEC	6825	UTERINE ARTERY EMBOLIZATION [UAE] WITHOUT COILS
1661	2NDRY OCULAR IMP INSERT	6829	UTERINE LES DESTRUCT NEC
1662	REVIS/REINSERT OCUL IMP	683	UTERINE LES DESTRUCT NEC
1663	REVIS ENUC SOCKET W GRFT	6831	LAP SCERVIC HYSTERECTOMY
1664	ENUC SOCKET REVIS NEC	6839	OTH SUBTOT ABD HYSTERECT
1665	2NDRY EXENT CAVITY GRAFT	684	TOTAL ABD HYSTERECTOMY
1666	REVIS EXENTER CAVITY NEC	6841	LAP TOTAL ABDOMINAL HYST
1669	2ND OP POST EYE REM NEC	6849	TOTAL ABD HYST NEC/NOS
1671	REMOVE OCULAR IMPLANT	685	TOTAL ABD HYSTERECTOMY
1672	REMOVE ORBITAL IMPLANT	6851	LAP AST VAG HYSTERECTOMY
1681	REPAIR OF ORBITAL WOUND	6859	OTHER VAG HYSTERECTOMY
1682	REPAIR EYEBALL RUPTURE	686	RADICAL ABD HYSTERECTOMY
1689	EYE/ORBIT INJ REPAIR NEC	6861	LAP RADICAL ABDOMNL HYST
1692	EXCISION ORBITAL LESION	6869	RADICAL ABD HYST NEC/NOS
1693	EXCISION EYE LESION NOS	687	RADICAL VAG HYSTERECTOMY
1698	OPERATION ON ORBIT NEC	6871	LAP RADICAL VAGINAL HYST
1699	OPERATION ON EYEBALL NEC	6879	RADICAL VAG HYST NEC/NOS
1711	LAP DIR ING HERN-GRAFT	688	PELVIC EVISCERATION
1712	LAP INDIR ING HERN-GRAFT	689	HYSTERECTOMY NEC/NOS
1713	LAP ING HERN-GRAFT NOS	6901	D & C FOR PREG TERMINAT
1721	LAP BIL DIR ING HRN-GRFT	6902	D & C POST DELIVERY
1722	LAP BI INDIR ING HRN-GRF	6909	D & C NEC
1723	LAP BI DR/IND ING HRN-GR	6911	D & C NEC
1724	LAP BIL ING HERN-GRF NOS	6919	DESTRUC UTER SUPPORT NEC
1731	LAP MUL SEG RES LG INTES	6921	INTERPOSIT OP UTERIN LIG
1732	LAPAROSCOPIC CECECTOMY	6922	UTERINE SUSPENSION NEC

1733	LAP RIGHT HEMICOLECTOMY	6923	VAG REPAIR INVERS UTERUS
1734	LAP RES TRANSVERSE COLON	6929	UTERUS/ADNEXA REPAIR NEC
1735	LAP LEFT HEMICOLECTOMY	693	PARACERV UTERINE DENERV
1736	LAP SIGMOIDECTOMY	6941	SUTURE UTERINE LACERAT
1739	LAP PT EX LRG INTEST NEC	6942	CLOSURE UTERINE FISTULA
1751	IMPLANT CCM,TOTAL SYSTEM	6949	UTERINE REPAIR NEC
1752	IMPLANT CCM PULSE GENRTR	6951	ASPIRAT CURET-PREG TERM
1753	PERCUTANEOUS ATHERECTOMY OF EXTRACRANIAL VESSEL(S)	6952	ASPIRAT CURET-POST DELIV
1754	PERCUTANEOUS ATHERECTOMY OF INTRACRANIAL VESSEL(S)	6995	INCISION OF CERVIX
1755	TRANSLUMINAL CORONARY ATHERECTOMY	6997	REMOVE PENETRAT CERV FB
1756	ATHERECTOMY OF OTHER NON- CORONARY VESSEL(S)	6998	UTERINE SUPPORT OP NEC
1761	LITT LESN BRAIN,GUIDANCE	6999	UTERINE OPERATION NEC
1762	LITT LES HD/NCK,GUIDANCE	7012	CULDOTOMY
1763	LITT LESN LIVER,GUIDANCE	7013	INTRALUM VAG ADHESIOLYS
1769	LITT LESN, GUIDE OTH/NOS	7014	VAGINOTOMY NEC
1821	PREAURICULAR SINUS EXCIS	7023	CUL-DE-SAC BIOPSY
1831	RAD EXCIS EXT EAR LES	7024	VAGINAL BIOPSY
1839	EXCIS EXTERNAL EAR NEC	7029	VAGIN/CUL-DE-SAC DX NEC
185	CORRECTION PROMINENT EAR	7031	HYMENECTOMY
186	EXT AUDIT CANAL RECONSTR	7032	EXCIS CUL-DE-SAC LESION
1871	CONSTRUCTION EAR AURICLE	7033	EXCISION VAGINAL LESION
1872	REATTACH AMPUTATED EAR	704	VAGINAL OBLITERATION
1879	PLASTIC REP EXT EAR NEC	7050	CYSTOCEL/RECTOCEL REPAIR
189	OTHER EXT EAR OPERATIONS	7051	CYSTOCELE REPAIR
190	STAPES MOBILIZATION	7052	RECTOCELE REPAIR
1911	STAPEDECT W REPLAC INCUS	7053	CYSTO & RECTO W GRF/PROS
1919	STAPEDECTOMY NEC	7054	REP CYSTOCEL W GRFT/PROS
1921	REV STAPDEC W INCUS REPL	7055	REP RECTOCELE W GRF/PROS
1929	STAPEDECTOMY REVIS NEC	7061	VAGINAL CONSTRUCTION
193	OSSICULAR CHAIN OP NEC	7062	VAGINAL RECONSTRUCTION
194	MYRINGOPLASTY	7063	VAGINAL CONST W GRF/PROS
1952	TYPE 2 TYMPANOPLASTY	7064	VAG RECONST W GRFT/PROS
1953	TYPE 3 TYMPANOPLASTY	7071	SUTURE VAGINA LACERATION
1954	TYPE 4 TYMPANOPLASTY	7072	REPAIR COLOVAGIN FISTULA
1955	TYPE 5 TYMPANOPLASTY	7073	REPAIR RECTOVAG FISTULA
196	TYMPANOPLASTY REVISION	7074	REP VAGINOENT FISTUL NEC
199	MIDDLE EAR REPAIR NEC	7075	REPAIR VAG FISTULA NEC
2001	MYRINGOTOMY W INTUBATION	7076	HYMENORRHAPHY
2021	MASTOID INCISION	7077	VAGINAL SUSPENS & FIXAT
2022	PETRUS PYRAM AIR CEL INC	7078	VAG SUSP/FIX W GRFT/PROS
2023	MIDDLE EAR INCISION	7079	VAGINAL REPAIR NEC
2032	MID & INNER EAR BIOPSY	708	VAGINAL VAULT OBLITERAT
2039	MID/IN EAR DX PROC NEC	7091	VAGINAL OPERATION NEC
2041	SIMPLE MASTOIDECTOMY	7092	CUL-DE-SAC OPERATION NEC
2042	RADICAL MASTOIDECTOMY	7093	CUL-DE-SAC GRF/PROS NEC
2049	MASTOIDECTOMY NEC	7101	VULVAR ADHESIOLYSIS
2051	EXCISE MIDDLE EAR LESION	7109	INCIS VULVA/PERINEUM NEC
2059	MIDDLE EAR EXCISION NEC	7111	VULVAR BIOPSY
2061	INNER EAR FENESTRATION	7119	VULVAR DIAGNOS PROC NEC
2062	REVIS INNER EAR FENESTRA	7122	INCISE BARTHOLINS GLAND
2071	ENDOLYMPHATIC SHUNT	7123	BARTHOLIN GLAND MARSUP
2072	INNER EAR INJECTION	7124	DESTRUC BARTHOLIN GLAND
2079	INC/EXC/DESTR IN EAR NEC	7129	BARTHOLINS GLAND OP NEC
2091	TYMPANOSYMPATHECTOMY	713	LOCAL VULVAR EXCIS NEC
2092	MASTOIDECTOMY REVISION	714	OPERATIONS ON CLITORIS
2093	REPAIR OVAL/ROUND WINDOW	715	RADICAL VULVECTOMY
2095	ELECMAG HEAR DEV IMPLANT	7161	UNILATERAL VULVECTOMY
2096	IMPLT COCHLEAR PROST NOS	7162	BILATERAL VULVECTOMY

2097	IMP/REP SCHAN COCH PROS	7171	SUTURE VULVAR LACERATION
2098	IMP/REP MCHAN COCHL PROS	7172	REPAIR VULVAR FISTULA
2099	MID-INNER EAR OPS NEC	7179	VULVAR/PERIN REPAIR NEC
2104	ETHMOID ART LIGAT-EPIST	718	OTHER VULVAR OPERATIONS
2105	MAX ART LIG FOR EPISTAX	719	OTHER FEMALE GENITAL OPS
2106	EXT CAROT ART LIG-EPIST	7394	PUBIOTOMY TO ASSIST DEL
2107	NASAL SEPT GRFT-EPISTAX	7399	OPS ASSISTING DELIV NEC
2109	EPISTAXIS CONTROL NEC	740	CLASSICAL C-SECTION
214	RESECTION OF NOSE	741	LOW CERVICAL C-SECTION
215	SUBMUC NASAL SEPT RESECT	742	EXTRAPERITONEAL C-SECT
2161	DIATHER/CRYO TURBINECTOM	743	REM EXTRATUB ECTOP PREG
2162	TURBINATE FRACTURE	744	CESAREAN SECTION NEC
2169	TURBINECTOMY NEC	7491	HYSTEROTOMY TO TERMIN PG
2172	OPEN REDUCTION NASAL FX	7499	CESAREAN SECTION NOS
2182	NASAL FISTULA CLOSURE	7536	CORRECTION FETAL DEFECT
2183	TOT NASAL RECONSTRUCTION	7550	REPAIR OB LAC UTERUS NOS
2184	REVISION RHINOPLASTY	7551	REPAIR OB LACERAT CERVIX
2185	AUGMENTATION RHINOPLASTY	7552	REPAIR OB LAC CORP UTERI
2186	LIMITED RHINOPLASTY	7561	REPAIR OB LAC BLAD/URETH
2187	RHINOPLASTY NEC	7593	SURG CORR INVERT UTERUS
2188	SEPTOPLASTY NEC	7599	OBSTETRIC OPERATION NEC
2189	NASAL REPAIR NEC	7601	FACIAL BONE SEQUESTRECT
2199	NASAL OPERATION NEC	7609	FACIAL BONE INCISION NEC
2212	OPEN BIOPSY NASAL SINUS	7611	FACIAL BONE BIOPSY
2231	RADICAL MAXILLARY ANTROT	7619	FACIAL BONE DX PROC NEC
2239	EXT MAXILLARY ANTROT NEC	762	DESTRUCT FACIAL BONE LES
2241	FRONTAL SINUSOTOMY	7631	PARTIAL MANDIBULECTOMY
2242	FRONTAL SINUSECTOMY	7639	PART FACIAL OSTECTOM NEC
2250	SINUSOTOMY NOS	7641	TOT MANDIBULEC W RECONST
2251	ETHMOIDOTOMY	7642	TOTAL MANDIBULECTOMY NEC
2252	SPHENOIDOTOMY	7643	MANDIBULAR RECONST NEC
2253	MULTIPLE SINUS INCISION	7644	TOT FACE OSTECT W RECONS
2260	SINUSECTOMY NOS	7645	TOT FACE BONE OSTECT NEC
2261	C-LUC EXC MAX SINUS LES	7646	FACIAL BONE RECONSTR NEC
2262	EXC MAX SINUS LESION NEC	765	TEMPOROMAND ARTHROPLASTY
2263	ETHMOIDECTOMY	7661	CL OSTEOPLASTY MAND RAMI
2264	SPHENOIDECTOMY	7662	OPEN OSTEOPLAS MAND RAMI
2271	NASAL SINUS FISTULA CLOS	7663	OSTEOPLASTY MANDIBLE BDY
2279	NASAL SINUS REPAIR NEC	7664	MAND ORTHOGNATHIC OP NEC
229	OTHER NASAL SINUS OPS	7665	SEG OSTEOPLASTY MAXILLA
242	GINGIVOPLASTY	7666	TOT OSTEOPLASTY MAXILLA
244	EXC OF DENTAL LES OF JAW	7667	REDUCTION GENIOPLASTY
245	ALVEOLOPLASTY	7668	AUGMENTATION GENIOPLASTY
2502	OPEN BIOPSY OF TONGUE	7669	FACIAL BONE REPAIR NEC
251	DESTRUCTION TONGUE LES	7670	REDUCTION FACIAL FX NOS
252	PARTIAL GLOSSECTOMY	7672	OPN REDUCT MALAR/ZYGO FX
253	COMPLETE GLOSSECTOMY	7674	OPEN REDUCT MAXILLARY FX
254	RADICAL GLOSSECTOMY	7676	OPEN REDUCT MANDIBLE FX
2559	REPAIR OF TONGUE NEC	7677	OPEN REDUCT ALVEOLAR FX
2594	OTHER GLOSSOTOMY	7679	OPEN REDUCT FACE FX NEC
2599	TONGUE OPERATION NEC	7691	BONE GRAFT TO FACE BONE
2612	OPEN BX SALIV GLAND/DUCT	7692	SYN IMPLANT TO FACE BONE
2621	SALIVARY CYST MARSUPIAL	7694	OPEN REDUCT TM DISLOCAT
2629	SALIV LESION EXCIS NEC	7697	REMOVE INT FIX FACE BONE
2630	SIALOADENECTOMY NOS	7699	FACIAL BONE/JNT OP NEC
2631	PARTIAL SIALOADENECTOMY	7700	SEQUESTRECTOMY NOS
2632	COMPLETE SIALOADENECTOMY	7701	CHEST CAGE SEQUESTREC
2641	SUTURE OF SALIV GLND LAC	7702	HUMERUS SEQUESTRECTOMY
2642	SALIVARY FISTULA CLOSURE	7703	RADIUS & ULNA SEQUESTREC
2649	SALIVARY REPAIR NEC	7704	METACARP/CARP SEQUESTREC
2699	SALIVARY OPERATION NEC	7705	FEMORAL SEQUESTRECTOMY
270	DRAIN FACE & MOUTH FLOOR	7706	PATELLAR SEQUESTRECTOMY

271	INCISION OF PALATE	7707	TIBIA/FIBULA SEQUESTREC
2721	BONY PALATE BIOPSY	7708	METATAR/TAR SEQUESTREC
2722	UVULA AND SOFT PALATE BX	7709	SEQUESTRECTOMY NEC
2731	LOC EXC BONY PALATE LES	7710	OTHER BONE INCISION NOS
2732	WIDE EXC BONY PALATE LES	7711	OTHER CHEST CAGE INCIS
2742	WIDE EXCISION OF LIP LES	7712	OTHER HUMERUS INCISION
2743	EXCISION OF LIP LES NEC	7713	OTHER RADIUS/ULNA INCIS
2749	EXCISION OF MOUTH NEC	7714	OTH METACARP/CARP INCIS
2753	CLOSURE OF MOUTH FISTULA	7715	OTHER FEMORAL INCISION
2754	REPAIR OF CLEFT LIP	7716	OTHER PATELLAR INCISION
2755	FULL-THICK GRFT TO MOUTH	7717	OTHER TIBIA/FIBULA INCIS
2756	SKIN GRAFT TO MOUTH NEC	7718	OTH METATARS/TARS INCIS
2757	PEDICLE ATTACH TO MOUTH	7719	BONE INCIS W/O DIV NEC
2759	MOUTH REPAIR NEC	7720	WEDGE OSTEOTOMY NOS
2761	SUTURE OF PALATE LACERAT	7721	CHEST CAGE WEDG OSTEOTOM
2762	CLEFT PALATE CORRECTION	7722	HUMERUS WEDGE OSTEOTOMY
2763	REVIS CLEFT PALAT REPAIR	7723	RADIUS/ULNA WEDG OSTEOTO
2769	OTH PLASTIC REPAIR PALAT	7724	METACAR/CAR WEDG OSTEOTO
2771	INCISION OF UVULA	7725	FEMORAL WEDGE OSTEOTOMY
2772	EXCISION OF UVULA	7726	PATELLAR WEDGE OSTEOTOMY
2773	REPAIR OF UVULA	7727	TIBIA/FIBUL WEDG OSTEOT
2779	OTHER UVULA OPERATIONS	7728	METATAR/TAR WEDG OSTEOT
2792	MOUTH INCISION NOS	7729	WEDGE OSTEOTOMY NEC
2799	ORAL CAVITY OPS NEC	7730	OTHER BONE DIVISION NOS
280	PERITONSILLAR I & D	7731	CHEST CAGE BONE DIV NEC
2811	TONSIL&ADENOID BIOPSY	7732	HUMERUS DIVISION NEC
2819	TONSIL&ADENOID DX OP NEC	7733	RADIUS/ULNA DIVISION NEC
282	TONSILLECTOMY	7734	METACAR/CAR DIVISION NEC
283	TONSILLECTOMY/ADENOIDEC	7735	FEMORAL DIVISION NEC
284	EXCISION OF TONSIL TAG	7736	PATELLAR DIVISION NEC
285	EXCISION LINGUAL TONSIL	7737	TIBIA/FIBULA DIV NEC
286	ADENOIDECTOMY	7738	METATAR/TAR DIVISION NEC
287	HEMORR CONTRL POST T & A	7739	BONE DIVISION NEC
2891	INCIS TO REMOV TONSIL FB	7740	BONE BIOPSY NOS
2892	EXCIS TONSIL/ADENOID LES	7741	CHEST CAGE BONE BIOPSY
2899	TONSIL/ADENOID OPS NEC	7742	HUMERUS BIOPSY
290	PHARYNGOTOMY	7743	RADIUS & ULNA BIOPSY
292	EXC BRANCHIAL CLEFT CYST	7744	METACARPAL/CARPAL BIOPSY
293	EXC BRANCHIAL CLEFT CYST	7745	FEMORAL BIOPSY
2931	CRICOPHARYNGEAL MYOTOMY	7746	PATELLAR BIOPSY
2932	PHARYNGEAL DIVERTICULEC	7747	TIBIA & FIBULA BIOPSY
2933	PHARYNGECTOMY	7748	METATARSAL/TARSAL BIOPSY
2939	EXCIS/DESTR LES PHAR NEC	7749	BONE BIOPSY NEC
294	PLASTIC OP ON PHARYNX	7751	BUNIONECT/SFT/OSTEOTOMY
2951	SUTURE OF PHARYNGEAL LAC	7752	BUNIONECT/SFT/ARTHRODES
2952	CLOS BRANCH CLEFT FISTUL	7753	OTH BUNIONECT W SFT CORR
2953	CLOS PHARYNX FISTULA NEC	7754	EXC CORRECT BUNIONETTE
2954	LYSIS PHARYNGEAL ADHES	7756	REPAIR OF HAMMER TOE
2959	PHARYNGEAL REPAIR NEC	7757	REPAIR OF CLAW TOE
2992	DIVIS GLOSSOPHARYNG NERV	7758	OTH EXC, FUS, REPAIR TOE
2999	PHARYNGEAL OPERATION NEC	7759	BUNIONECTOMY NEC
3001	LARYNX CYST MARSUPIALIZ	7760	LOC EXC BONE LESION NOS
3009	DESTRUCT LARYNX LES NEC	7761	EXC CHEST CAGE BONE LES
301	HEMILARYNGECTOMY	7762	LOC EXC BONE LES HUMERUS
3021	EPIGLOTTIDECTOMY	7763	LOC EXC LES RADIUS/ULNA
3022	VOCAL CORDECTOMY	7764	LOC EXC LES METACAR/CAR
3029	OTHER PART LARYNGECTOMY	7765	LOC EXC BONE LES FEMUR
303	COMPLETE LARYNGECTOMY	7766	LOC EXC BONE LES PATELLA
304	RADICAL LARYNGECTOMY	7767	LOC EXC LES TIBIA/FIBULA
3121	MEDIASTINAL TRACHEOSTOMY	7768	LOC EXC LES METATAR/TAR
3129	OTHER PERM TRACHEOSTOMY	7769	LOC EXC BONE LESION NEC
313	INCIS LARYNX TRACHEA NEC	7770	EXCISE BONE FOR GRFT NOS

3145	OPN BX LARYNX OR TRACHEA	7771	EX CHEST CAGE BONE-GFT
315	LOCAL DESTRUC TRACH LES	7772	EXCISE HUMERUS FOR GRAFT
3161	SUTURE OF LARYNGEAL LAC	7773	EXCIS RADIUS/ULNA-GRAFT
3162	LARYNGEAL FISTULA CLOS	7774	EXCIS METACAR/CAR-GRAFT
3163	LARYNGOSTOMY REVISION	7775	EXCISE FEMUR FOR GRAFT
3164	LARYNGEAL FX REPAIR	7776	EXCISE PATELLA FOR GRAFT
3169	OTHER LARYNGEAL REPAIR	7777	EXCISE TIB/FIB FOR GRAFT
3171	SUTURE OF TRACHEAL LACER	7778	EXCIS METATAR/TAR-GRAFT
3172	CLOSURE OF TRACHEOSTOMY	7779	EXCISE BONE FOR GFT NEC
3173	TRACHEA FISTULA CLOS NEC	7780	OTH PART OSTECTOMY NOS
3174	REVISION OF TRACHEOSTOMY	7781	OTH CHEST CAGE OSTECTOMY
3175	TRACHEAL RECONSTRUCTION	7782	PARTIAL HUMERECTOMY NEC
3179	OTHER TRACHEAL REPAIR	7783	PART OSTECT-RADIUS/ULNA
3191	LARYNGEAL NERV DIVISION	7784	PART OSTECT-METACAR/CAR
3192	LYSIS TRACH/LARYNX ADHES	7785	PART OSTECTOMY-FEMUR
3198	OTH LARYNGEAL OPERATION	7786	PARTIAL PATELLECTOMY
3199	OTHER TRACHEAL OPERATION	7787	PART OSTECT-TIBIA/FIBULA
320	OTHER TRACHEAL OPERATION	7788	PART OSTECT-METATAR/TAR
3209	OTHER DESTRUC BRONC LES	7789	PARTIAL OSTECTOMY NEC
321	OTHER BRONCHIAL EXCISION	7790	TOTAL OSTECTOMY NOS
3220	THORAC EXC LUNG LESION	7791	TOT CHEST CAGE OSTECTOMY
3221	EMPHYSEMA BLEB PPLICATION	7792	TOTAL OSTECTOMY-HUMERUS
3222	LUNG VOL REDUCTION SURG	7793	TOT OSTECT-RADIUS/ULNA
3223	OPEN ABLTN LUNG LES/TISS	7794	TOT OSTECT-METACAR/CARP
3224	PERC ABLTN LUNG LES/TISS	7795	TOT OSTECTOMY-FEMUR
3225	THOR ABLTN LUNG LES/TISS	7796	TOTAL PATELLECTOMY
3226	ABLTN LUNG TISS NEC/NOS	7797	TOT OSTECT-TIBIA/FIBULA
3227	BRNC THRMPLSTYABLT MSCL	7798	TOT OSTECT-METATARS/TARS
3229	DESTROY LOC LUNG LES NEC	7799	TOTAL OSTECTOMY NEC
323	SEGMENTAL LUNG RESECTION	7800	BONE GRAFT NOS
3230	THORAC SEG LUNG RESECT	7801	BONE GRAFT TO CHEST CAGE
3239	OTH SEG LUNG RESECT NOS	7802	BONE GRAFT TO HUMERUS
324	LOBECTOMY OF LUNG	7803	BONE GRAFT-RADIUS/ULNA
3241	THORAC LOBECTOMY LUNG	7804	BONE GRFT TO METACAR/CAR
3249	LOBECTOMY OF LUNG NEC	7805	BONE GRAFT TO FEMUR
325	COMPLETE PNEUMONECTOMY	7806	BONE GRAFT TO PATELLA
3250	THORACOSPC PNEUMONECTOMY	7807	BONE GRAFT-TIBIA/FIBULA
3259	OTHER PNEUMONECTOMY NOS	7808	BONE GRAFT-METATAR/TAR
326	RAD DISSEC THORAC STRUCT	7809	BONE GRAFT NEC
329	OTHER EXCISION OF LUNG	7810	APPLIC EXT FIX DEV NOS
330	INCISION OF BRONCHUS	7811	APPL EXT FIX-CHEST CAGE
331	INCISION OF LUNG	7812	APPLIC EXT FIX-HUMERUS
3320	THORACOSCOPC LUNG BIOPSY	7813	APPL EXT FIX-RADIUS/ULNA
3325	OPEN BRONCHIAL BIOPSY	7814	APPL EXT FIX-METACAR/CAR
3327	CLOS ENDOSCOPIC LUNG BX	7815	APPLIC EXT FIX DEV-FEMUR
3328	OPEN LUNG BIOPSY	7816	APPL EXT FIX DEV-PATELLA
3329	BRONCH/LUNG DX PROC NEC	7817	APPL EXT FIX-TIB/FIBULA
3334	THORACOPLASTY	7818	APPL EXT FIX-METATAR/TAR
3339	SURG COLLAPS OF LUNG NEC	7819	APPLIC EXT FIX DEV NEC
3341	BRONCHIAL LACERAT SUTURE	7820	LIMB SHORTEN PROC NOS
3342	BRONCHIAL FISTULA CLOS	7822	LIMB SHORT PROC-HUMERUS
3343	LUNG LACERATION CLOSURE	7823	LIMB SHORTEN-RADIUS/ULNA
3348	BRONCHIAL REPAIR NEC	7824	LIMB SHORTEN-METACAR/CAR
3349	LUNG REPAIR NEC	7825	LIMB SHORT PROC-FEMUR
335	LUNG REPAIR NEC	7827	LIMB SHORTEN-TIB/FIBULA
3350	LUNG TRANSPLANT NOS	7828	LIMB SHORTEN-METATAR/TAR
3351	UNILAT LUNG TRANSPLANT	7829	LIMB SHORTEN PROC NEC
3352	BILAT LUNG TRANSPLANT	7830	LIMB LENGTHEN PROC NOS
336	COMB HEART/LUNG TRANSPLA	7831	LIMB LENGTHEN PROC NOS
3392	BRONCHIAL LIGATION	7832	LIMB LENGTH PROC-HUMERUS
3393	PUNCTURE OF LUNG	7833	LIMB LENGTH-RADIUS/ULNA
3398	BRONCHIAL OPERATION NEC	7834	LIMB LENGTH-METACAR/CAR

3399	LUNG OPERATION NEC	7835	LIMB LENGTH PROC-FEMUR
3402	EXPLORATORY THORACOTOMY	7837	LIMB LENGTHEN-TIB/FIBULA
3403	REOPEN THORACOTOMY SITE	7838	LIMB LENGTHEN-METATAR/TAR
3406	THORAC DRAIN PLEURL CAV	7839	LIMB LENGTHEN PROC NEC
341	INCISION OF MEDIASTINUM	7840	OTH BONE REPAIR/PLAST OP
3420	THORACOSCOPIC PLEURAL BX	7841	OTH CHEST CAGE REP/PLAST
3421	TRANSPLEURA THORACOSCOPY	7842	OTH HUMERUS REPAIR/PLAST
3422	MEDIASTINOSCOPY	7843	OTH RAD/ULN REPAIR/PLAST
3426	OPEN MEDIASTINAL BIOPSY	7844	OTH METAC/CARP REP/PLAST
3427	BIOPSY OF DIAPHRAGM	7845	OTH FEMUR REPAIR/PLASTIC
3428	DX PROCEDURE THORAX NEC	7846	OTH PATELLA REPAIR/PLAST
3429	DX PROC MEDIASTINUM NEC	7847	OTH TIB/FIB REPAIR/PLAST
343	DESTRUCT MEDIASTIN LES	7848	OTH META/TAR REPA/PLAST
344	DESTRUCT CHEST WALL LES	7849	OTH BONE REPA/PLAST NEC
3451	DECORTICATION OF LUNG	7850	INT FIX W/O FX REDUC NOS
3452	THORACOSCOPC DECORT LUNG	7851	INT FIXATION-CHEST CAGE
3459	OTHER PLEURAL EXCISION	7852	INT FIXATION-HUMERUS
346	SCARIFICATION OF PLEURA	7853	INT FIXATION-RADIUS/ULNA
3473	CLOS THORACIC FISTUL NEC	7854	INT FIXATION-METACAR/CAR
3474	PECTUS DEFORMITY REPAIR	7855	INTERNAL FIXATION-FEMUR
3479	OTHER CHEST WALL REPAIR	7856	INTERNAL FIX-PATELLA
3481	EXCISE DIAPHRAGM LESION	7857	INT FIXATION-TIBIA/FIBUL
3482	SUTURE DIAPHRAGM LACERAT	7858	INT FIXATION-METATAR/TAR
3483	CLOSE DIAPHRAGM FISTULA	7859	INT FIX-NO FX REDUCT NEC
3484	OTHER DIAPHRAGM REPAIR	7860	REMOVE IMP DEVICE NOS
3485	IMPLANT DIAPHRA PACEMAKE	7861	REMOV IMP DEV-CHEST CAGE
3489	DIAPHRAGM OPERATION NEC	7862	REMOVE IMPL DEV-HUMERUS
3493	REPAIR OF PLEURA	7863	REMOV IMP DEV-RADIUS/ULN
3499	THORACIC OPERATION NEC	7864	REMOV IMP DEV-METAC/CARP
3500	CLOSED VALVOTOMY NOS	7865	REMOVE IMP DEVICE-FEMUR
3501	CLOSED AORTIC VALVOTOMY	7866	REMOV IMP DEVICE-PATELLA
3502	CLOSED MITRAL VALVOTOMY	7867	REMOV IMP DEV-TIB/FIBULA
3503	CLOSED PULMON VALVOTOMY	7868	REMOVE IMP DEV-METAT/TAR
3504	CLOSED TRICUSP VALVOTOMY	7869	REMOVE IMPL DEVICE NEC
3505	ENDOVASCULAR REPLACEMENT OF AORTIC VALVE	7870	OSTEOCLASIS NOS
3506	TRANSAPICAL REPLACEMENT OF AORTIC VALVE	7871	OSTEOCLASIS-CHEST CAGE
3507	ENDOVASCULAR REPLACEMENT OF PULMONARY VALVE	7872	OSTEOCLASIS-HUMERUS
3508	TRANSAPICAL REPLACEMENT OF PULMONARY VALVE	7873	OSTEOCLASIS-RADIUS/ULNA
3509	ENDOVASCULAR REPLACEMENT OF UNSPECIFIED HEART VALVE	7874	OSTEOCLASIS-METACAR/CAR
3510	OPEN VALVULOPLASTY NOS	7875	OSTEOCLASIS-FEMUR
3511	OPN AORTIC VALVULOPLASTY	7876	OSTEOCLASIS-PATELLA
3512	OPN MITRAL VALVULOPLASTY	7877	OSTEOCLASIS-TIBIA/FIBULA
3513	OPN PULMON VALVULOPLASTY	7878	OSTEOCLASIS-METATAR/TAR
3514	OPN TRICUS VALVULOPLASTY	7879	OSTEOCLASIS NEC
3520	REPLACE HEART VALVE NOS	7880	OTHER BONE DX PROC NOS
3521	REPLACE AORT VALV-TISSUE	7881	OTH DX PROCED-CHEST CAGE
3522	REPLACE AORTIC VALVE NEC	7882	OTH DX PROCED-HUMERUS
3523	REPLACE MITR VALV-TISSUE	7883	OTH DX PROC-RADIUS/ULNA
3524	REPLACE MITRAL VALVE NEC	7884	OTH DX PROC-METACAR/CAR
3525	REPLACE PULM VALV-TISSUE	7885	OTH DX PROCED-FEMUR
3526	REPLACE PULMON VALVE NEC	7886	OTH DX PROCED-PATELLA
3527	REPLACE TRIC VALV-TISSUE	7887	OTH DX PROC-TIBIA/FIBULA
3528	REPLACE TRICUSP VALV NEC	7888	OTH DX PROC-METATAR/TAR
3531	PAPILLARY MUSCLE OPS	7889	OTHER BONE DX PROC NEC
3532	CHORDAE TENDINEAE OPS	7890	INSERT BONE STIMUL NOS
3533	ANNULOPLASTY	7891	INSERT BONE STIMUL-CHEST
3534	INFUNDIBULECTOMY	7892	INSERT BONE STIM-HUMERUS

3535	TRABECUL CARNEAE CORD OP	7893	INSERT BONE STIM-RAD/ULNA
3539	TISS ADJ TO VALV OPS NEC	7894	INSERT BONE STIM-META/CAR
3542	CREATE SEPTAL DEFECT	7895	INSERT BONE STIM-FEMUR
3550	PROSTH REP HRT SEPTA NOS	7896	INSERT BONE STIM-PATELLA
3551	PROS REP ATRIAL DEF-OPN	7897	INSERT BONE STIM-TIB/FIB
3552	PROS REPAIR ATRIA DEF-CL	7898	INSERT BONE STIM-META/TAR
3553	PROST REPAIR VENTRIC DEF	7899	INSERT BONE STIMUL NEC
3554	PROS REP ENDOCAR CUSHION	7910	CL FX REDUC-INT FIX NOS
3555	PROS REP VENTRC DEF-CLOS	7911	CLOS RED-INT FIX HUMERUS
3560	GRFT REPAIR HRT SEPT NOS	7912	CL RED-INT FIX RAD/ULNA
3561	GRAFT REPAIR ATRIAL DEF	7913	CL RED-INT FIX METAC/CAR
3562	GRAFT REPAIR VENTRIC DEF	7914	CLOSE RED-INT FIX FINGER
3563	GRFT REP ENDOCAR CUSHION	7915	CLOSED RED-INT FIX FEMUR
3570	HEART SEPTA REPAIR NOS	7916	CL RED-INT FIX TIB/FIBU
3571	ATRIA SEPTA DEF REP NEC	7917	CL RED-INT FIX METAT/TAR
3572	VENTR SEPTA DEF REP NEC	7918	CLOSE RED-INT FIX TOE FX
3573	ENDOCAR CUSHION REP NEC	7919	CL FX REDUC-INT FIX NEC
3581	TOT REPAIR TETRAL FALLOT	7920	OPEN FX REDUCTION NOS
3582	TOTAL REPAIR OF TAPVC	7921	OPEN REDUC-HUMERUS FX
3583	TOT REP TRUNCUS ARTERIOS	7922	OPEN REDUC-RADIUS/ULN FX
3584	TOT COR TRANSPOS GRT VES	7923	OPEN REDUC-METAC/CAR FX
3591	INTERAT VEN RETRN TRANSP	7924	OPEN REDUCTION-FINGER FX
3592	CONDUIT RT VENT-PUL ART	7925	OPEN REDUCTION-FEMUR FX
3593	CONDUIT LEFT VENTR-AORTA	7926	OPEN REDUC-TIBIA/FIB FX
3594	CONDUIT ARTIUM-PULM ART	7927	OPEN REDUC-METAT/TARS FX
3595	HEART REPAIR REVISION	7928	OPEN REDUCTION-TOE FX
3596	PERC HEART VALVULOPLASTY	7929	OPEN FX REDUCTION NEC
3597	PERC MTRL VLV REPR W IMP	7930	OPN FX RED W INT FIX NOS
3598	OTHER HEART SEPTA OPS	7931	OPEN RED-INT FIX HUMERUS
3599	OTHER HEART VALVE OPS	7932	OP RED-INT FIX RAD/ULNA
3600	OTHER HEART VALVE OPS	7933	OP RED-INT FIX METAC/CAR
3601	PTCA-1 VES/ATH W/O AGENT	7934	OPEN RED-INT FIX FINGER
3602	PTCA-1 VES/ATH W AGENT	7935	OPEN REDUC-INT FIX FEMUR
3603	OPEN CORONRY ANGIOPLASTY	7936	OP RED-INT FIX TIB/FIBUL
3605	PTCA-MULTIPLE VESSEL/ATH	7937	OP RED-INT FIX METAT/TAR
3609	REM OF COR ART OBSTR NEC	7938	OPEN REDUCT-INT FIX TOE
3610	AORTOCORONARY BYPASS NOS	7939	OPN FX RED W INT FIX NEC
3611	AORTOCOR BYPAS-1 COR ART	7940	CLS REDUC-SEP EPIPHY NOS
3612	AORTOCOR BYPAS-2 COR ART	7941	CLOSE RED-HUMERUS EPIPHY
3613	AORTOCOR BYPAS-3 COR ART	7942	CLS RED-RADIUS/UL EPIPHY
3614	AORTCOR BYPAS-4+ COR ART	7945	CLOSE REDUC-FEMUR EPIPHY
3615	1 INT MAM-COR ART BYPASS	7946	CLS RED-TIBIA/FIB EPIPHY
3616	2 INT MAM-COR ART BYPASS	7949	CLS REDUC-SEP EPIPHY NEC
3617	ABD-CORON ARTERY BYPASS	7950	OPEN RED-SEP EPIPHY NOS
3619	HRT REVAS BYPS ANAS NEC	7951	OPN RED-SEP EPIPHY-HUMER
362	ARTERIAL IMPLANT REVASC	7952	OP RED-RADIUS/ULN EPIPHY
363	ARTERIAL IMPLANT REVASC	7955	OPN RED-SEP EPIPHY-FEMUR
3631	OPEN CHEST TRANS REVASC	7956	OP RED-TIBIA/FIB EPIPHYS
3632	OTH TRANSMYO REVASCULAR	7959	OPEN RED-SEP EPIPHY NEC
3633	ENDO TRANSMYO REVASCULAR	7960	OPEN FX SITE DEBRIDE NOS
3634	PERC TRANSMYO REVASCULAR	7961	DEBRID OPEN FX-HUMERUS
3639	OTH HEART REVASCULAR	7962	DEBRID OPN FX-RADIUS/ULN
3691	CORON VESS ANEURYSM REP	7963	DEBRID OPN FX-METAC/CAR
3699	HEART VESSEL OP NEC	7964	DEBRID OPN FX-FINGER
3710	INCISION OF HEART NOS	7965	DEBRID OPN FX-FEMUR
3711	CARDIOTOMY	7966	DEBRID OPN FX-TIBIA/FIB
3712	PERICARDIOTOMY	7967	DEBRID OPN FX-METAT/TAR
3724	PERICARDIAL BIOPSY	7968	DEBRID OPN FX-TOE
3731	PERICARDIECTOMY	7969	OPEN FX SITE DEBRIDE NEC
3732	HEART ANEURYSM EXCISION	7980	OPEN REDUC-DISLOCAT NOS
3733	EXC/DEST HRT LESION OPEN	7981	OPN REDUC DISLOC-SHOULDR
3734	EXC/DEST HRT LES OTHER	7982	OPEN REDUC-ELBOW DISLOC

3735	PARTIAL VENTRICULECTOMY	7983	OPEN REDUC-WRIST DISLOC
3737	EXC/DEST HRT LES THRSPC	7984	OPN REDUC DISLOC-HAND
374	HEART & PERICARD REPAIR	7985	OPEN REDUC-HIP DISLOCAT
3741	IMPL CARDIAC SUPPORT DEV	7986	OPEN REDUC-KNEE DISLOCAT
3749	HEART/PERICARD REPR NEC	7987	OPEN REDUC-ANKLE DISLOC
375	HEART & PERICARD REPAIR	7988	OPN REDUC DISLOC-FT/TOE
3751	HEART TRANSPLANTATION	7989	OPEN REDUC-DISLOCAT NEC
3752	IMPLANT TOT REP HRT SYS	7990	UNSPEC OP BONE INJ NOS
3753	REPL/REP THORAC UNIT HRT	7991	HUMERUS INJURY OP NOS
3754	REPL/REP OTH TOT HRT SYS	7992	RADIUS/ULNA INJ OP NOS
3755	REM INT BIVENT HRT SYS	7993	METACARP/CARP INJ OP NOS
3760	IMP BIVN EXT HRT AST SYS	7994	FINGER INJURY OP NOS
3761	PULSATION BALLOON IMPLAN	7995	FEMUR INJURY OP NOS
3762	IMPLANT HRT ASST SYS NEC	7996	TIBIA/FIBULA INJ OP NOS
3763	REPLACE HRT ASSIST SYST	7997	METATARS/TARS INJ OP NOS
3764	REMOVE HEART ASSIST SYS	7998	TOE INJURY OPERATION NOS
3765	IMP EXT PUL HRT ASST SYS	7999	UNSPEC OP-BONE INJ NEC
3766	IMP IMP PUL HRT ASST SYS	8000	ARTHROT & PROS REMOV NOS
3767	IMP CARDIOMYOSTIMUL SYS	8001	ARTHROT/PROS REMOV-SHLDR
3768	PERCUTAN HRT ASSIST SYST	8002	ARTHROT/PROS REMOV-ELBOW
3774	INT OR REPL LEAD EPICAR	8003	ARTHROT/PROS REMOV-WRIST
3775	REVISION OF LEAD	8004	ARTHROT/PROS REMOV-HAND
3776	REPL TV ATRI-VENT LEAD	8005	ARTHROT/PROS REMOV-HIP
3777	REMOVAL OF LEAD W/O REPL	8006	ARTHROT/PROS REMOV-KNEE
3779	REVIS OR RELOCATE POCKET	8007	ARTHROT/PROS REMOV-ANKLE
3780	INT OR REPL PERM PACEMKR	8008	ARTHROT/PROS REMOV-FOOT
3785	REPL PACEM W 1-CHAM, NON	8009	ARTHROT & PROS REMOV NEC
3786	REPL PACEM 1-CHAM, RATE	8010	OTHER ARTHROTOMY NOS
3787	REPL PACEM W DUAL-CHAM	8011	OTH ARTHROTOMY-SHOULDER
3789	REVISE OR REMOVE PACEMAK	8012	OTH ARTHROTOMY-ELBOW
3791	OPN CHEST CARDIAC MASSAG	8013	OTH ARTHROTOMY-WRIST
3794	IMPLT/REPL CARDDEFIB TOT	8014	OTH ARTHROTOMY-HAND/FNGR
3795	IMPLT CARDIODEFIB LEADS	8015	OTH ARTHROTOMY-HIP
3796	IMPLT CARDIODEFIB GENATR	8016	OTH ARTHROTOMY-KNEE
3797	REPL CARDIODEFIB LEADS	8017	OTH ARTHROTOMY-ANKLE
3798	REPL CARDIODEFIB GENRATR	8018	OTH ARTHROTOMY-FOOT/TOE
3799	OTHER HEART/PERICARD OPS	8019	OTHER ARTHROTOMY NEC
3800	INCISION OF VESSEL NOS	8020	ARTHROSCOPY NOS
3801	INTRACRAN VESSEL INCIS	8021	SHOULDER ARTHROSCOPY
3802	HEAD/NECK VES INCIS NEC	8022	ELBOW ARTHROSCOPY
3803	UPPER LIMB VESSEL INCIS	8023	WRIST ARTHROSCOPY
3804	INCISION OF AORTA	8024	HAND & FINGER ARTHROSCOP
3805	THORACIC VESSEL INC NEC	8025	HIP ARTHROSCOPY
3806	ABDOMEN ARTERY INCISION	8026	KNEE ARTHROSCOPY
3807	ABDOMINAL VEIN INCISION	8027	ANKLE ARTHROSCOPY
3808	LOWER LIMB ARTERY INCIS	8028	FOOT & TOE ARTHROSCOPY
3809	LOWER LIMB VEIN INCISION	8029	ARTHROSCOPY NEC
3810	ENDARTERECTOMY NOS	8040	JT STRUCTUR DIVISION NOS
3811	INTRACRAN ENDARTERECTOMY	8041	SHOULDER STRUCT DIVISION
3812	HEAD & NECK ENDARTER NEC	8042	ELBOW STRUCTURE DIVISION
3813	UPPER LIMB ENDARTERECTOM	8043	WRIST STRUCTURE DIVISION
3814	ENDARTERECTOMY OF AORTA	8044	HAND JOINT STRUCT DIVIS
3815	THORACIC ENDARTERECTOMY	8045	HIP STRUCTURE DIVISION
3816	ABDOMINAL ENDARTERECTOMY	8046	KNEE STRUCTURE DIVISION
3818	LOWER LIMB ENDARTERECT	8047	ANKLE STRUCTURE DIVISION
3821	BLOOD VESSEL BIOPSY	8048	FOOT JOINT STRUCT DIVIS
3826	INSERT IMPLANT PRESSURE SENS WO LEAD	8049	JT STRUCTUR DIVISION NEC
3829	BLOOD VESSEL DX PROC NEC	805	JT STRUCTUR DIVISION NEC
3830	VESSEL RESECT/ANAST NOS	8050	EXC/DEST INTVRT DISC NOS
3831	INTRACRAN VES RESEC-ANAS	8051	EXCISION INTERVERT DISC
3832	HEAD/NECK VES RESEC-ANAS	8053	REP ANULUS FIBROSUS-GRFT

3833	ARM VESSEL RESECT/ANAST	8054	REP ANULS FIBROS NEC/NOS
3834	AORTA RESECTION & ANAST	8059	OTH EXC/DEST INTVRT DISC
3835	THOR VESSEL RESECT/ANAST	806	EXCIS KNEE SEMILUN CARTL
3836	ABD VESSEL RESECT/ANAST	8070	SYNOVECTOMY-SITE NOS
3837	ABD VEIN RESECT & ANAST	8071	SHOULDER SYNOVECTOMY
3838	LEG ARTERY RESECT/ANAST	8072	ELBOW SYNOVECTOMY
3839	LEG VEIN RESECT/ANASTOM	8073	WRIST SYNOVECTOMY
3840	VESSEL RESECT/REPLAC NOS	8074	HAND SYNOVECTOMY
3841	INTRACRAN VES RESEC-REPL	8075	HIP SYNOVECTOMY
3842	HEAD/NECK VES RESEC-REPL	8076	KNEE SYNOVECTOMY
3843	ARM VES RESECT W REPLACE	8077	ANKLE SYNOVECTOMY
3844	RESECT ABDOM AORTA W REPL	8078	FOOT SYNOVECTOMY
3845	RESECT THORAC VES W REPL	8079	SYNOVECTOMY-SITE NEC
3846	ABD ARTERY RESEC W REPLA	8080	DESTRUCT JOINT LES NOS
3847	ABD VEIN RESECT W REPLAC	8081	DESTRUC-SHOULDER LES NEC
3848	LEG ARTERY RESEC W REPLA	8082	DESTRUC-ELBOW LESION NEC
3849	LEG VEIN RESECT W REPLAC	8083	DESTRUC-WRIST LESION NEC
3850	VARICOSE V LIG-STRIP NOS	8084	DESTRUC-HAND JT LES NEC
3851	INTCRAN VAR V LIG-STRIP	8085	DESTRUCT-HIP LESION NEC
3852	HEAD/NECK VAR V LIG-STR	8086	DESTRUCT-KNEE LESION NEC
3853	ARM VARICOSE V LIG-STRIP	8087	DESTRUC-ANKLE LESION NEC
3855	THORAC VAR V LIG-STRIP	8088	DESTRUC-FOOT JT LES NEC
3857	ABD VARICOS V LIGA-STRIP	8089	DESTRUCT JOINT LES NEC
3859	LEG VARICOS V LIGA-STRIP	8090	EXCISION OF JOINT NOS
3860	EXCISION OF VESSEL NOS	8091	EXCISION OF SHOULDER NEC
3861	INTRACRAN VESSEL EXCIS	8092	EXCISION OF ELBOW NEC
3862	HEAD/NECK VESSEL EXCIS	8093	EXCISION OF WRIST NEC
3863	ARM VESSEL EXCISION	8094	EXCISION HAND JOINT NEC
3864	EXCISION OF AORTA	8095	EXCISION OF HIP NEC
3865	THORACIC VESSEL EXCISION	8096	EXCISION OF KNEE NEC
3866	ABDOMINAL ARTERY EXCIS	8097	EXCISION OF ANKLE NEC
3867	ABDOMINAL VEIN EXCISION	8098	EXCISION FOOT JOINT NEC
3868	LEG ARTERY EXCISION	8099	EXCISION OF JOINT NEC
3869	LEG VEIN EXCISION	8100	SPINAL FUSION NOS
3880	SURG VESSEL OCCLUS NEC	8101	ATLAS-AXIS FUSION
3881	OCCLUS INTRACRAN VES NEC	8102	OTHER CERVICAL FUS ANT
3882	OCCLUS HEAD/NECK VES NEC	8103	OTHER CERVICAL FUS POST
3883	OCCLUDE ARM VESSEL NEC	8104	DORSAL/DORSOLUM FUS ANT
3884	OCCLUDE AORTA NEC	8105	DORSAL/DORSOLUM FUS POST
3885	OCCLUDE THORACIC VES NEC	8106	LUMBAR/LUMBOSAC FUS ANT
3886	OCCLUDE ABD ARTERY NEC	8107	LUMBAR/LUMBOSAC FUS LAT
3887	OCCLUDE ABD VEIN NEC	8108	LUMBAR/LUMBOSAC FUS POST
3888	OCCLUDE LEG ARTERY NEC	8109	LUMBAR/LUMBOSAC FUS POST
3889	OCCLUDE LEG VEIN NEC	8111	ANKLE FUSION
390	SYSTEMIC-PULM ART SHUNT	8112	TRIPLE ARTHRODESIS
391	INTRA-ABD VENOUS SHUNT	8113	SUBTALAR FUSION
3921	CAVAL-PULMON ART ANASTOM	8114	MIDTARSAL FUSION
3922	AORTA-SUBCLV-CAROT BYPAS	8115	TARSOMETATARSAL FUSION
3923	INTRATHORACIC SHUNT NEC	8116	METATARSOPHALANGEAL FUS
3924	AORTA-RENAL BYPASS	8117	OTHER FUSION OF FOOT
3925	AORTA-ILIAC-FEMOR BYPASS	8118	OTHER FUSION OF FOOT
3926	INTRA-ABDOMIN SHUNT NEC	8120	ARTHRODESIS NOS
3927	DIALYSIS ARTERIOVENOSTOM	8121	ARTHRODESIS OF HIP
3928	EXTRACRAN-INTRACR BYPASS	8122	ARTHRODESIS OF KNEE
3929	VASC SHUNT & BYPASS NEC	8123	ARTHRODESIS OF SHOULDER
3930	SUTURE OF VESSEL NOS	8124	ARTHRODESIS OF ELBOW
3931	SUTURE OF ARTERY	8125	CARPORADIAL FUSION
3932	SUTURE OF VEIN	8126	METACARPOCARPAL FUSION
3941	POSTOP VASC OP HEM CONTR	8127	METACARPOPHALANGEAL FUS
3942	REVIS REN DIALYSIS SHUNT	8128	INTERPHALANGEAL FUSION
3943	REMOV REN DIALYSIS SHUNT	8129	ARTHRODESIS NEC
3949	VASC PROC REVISION NEC	8130	SPINAL REFUSION NOS

3950	ANGIO/ATH NON-CORO VES	8131	REFUSION OF ATLAS-AXIS
3951	CLIPPING OF ANEURYSM	8132	REFUSION OF OTH CERV ANT
3952	ANEURYSM REPAIR NEC	8133	REFUS OF OTH CERV POST
3953	ARTERIOVEN FISTULA REP	8134	REFUSION OF DORSAL ANT
3954	RE-ENTRY OPERATION	8135	REFUSION OF DORSAL POST
3955	REIMPLAN ABERR RENAL VES	8136	REFUSION OF LUMBAR ANT
3956	REPAIR VESS W TIS PATCH	8137	REFUSION OF LUMBAR LAT
3957	REP VESS W SYNTH PATCH	8138	REFUSION OF LUMBAR POST
3958	REPAIR VESS W PATCH NOS	8139	REFUSION OF SPINE NEC
3959	REPAIR OF VESSEL NEC	8140	REPAIR OF HIP, NEC
397	PER CARDIOPULMON BYPASS	8141	REPAIR OF HIP, NEC
3971	ENDO IMPL GRFT ABD AORTA	8142	FIVE-IN-ONE KNEE REPAIR
3972	ENDOVASC REPAIR HEAD VES	8143	TRIAD KNEE REPAIR
3973	ENDO IMP GRFT THOR AORTA	8144	PATELLAR STABILIZATION
3974	ENDO REM OBS HD/NECK VES	8145	CRUCIATE LIG REPAIR NEC
3975	ENDO EMB HD/NK,BARE COIL	8146	COLLATERL LIG REPAIR NEC
3976	ENDO EM HD/NK,BIOAC COIL	8147	OTHER REPAIR OF KNEE
3977	TEMPORARY (PARTIAL) THERAPEUTIC ENDOVASCULAR OCCLUSION OF VESSEL	8148	OTHER REPAIR OF KNEE
3978	ENDOVASCULAR IMPLANTATION OF BRANCHING OR FENESTRATED GRAFT(S) IN AORTA	8149	OTHER REPAIR OF ANKLE
3979	ENDO REPAIR OTHER VESSEL	8151	TOTAL HIP REPLACEMENT
398	CARTD BODY/SINUS/VASC OP	8152	PARTIAL HIP REPLACEMENT
3981	IMP CRTD SINUS STMTOTL	8153	REVISE HIP REPLACEMENT
3982	IMP/REP CRTD SINUS LEAD	8154	TOTAL KNEE REPLACEMENT
3983	IMP/REP CRTD SINUS GNRTR	8155	REVISE KNEE REPLACEMENT
3984	REV CRTD SINUS STM LEADS	8156	TOTAL ANKLE REPLACEMENT
3985	REV CRTD SINUS PULSE GEN	8157	REPL JOINT OF FOOT, TOE
3986	REM CRTD SINUS STM TOTL	8159	REV JT REPL LOW EXT NEC
3987	REM CRTD SINUS STM LEAD	8161	360 SPINAL FUSION
3988	REM CRTD SINUS PULSE GEN	8162	FUS/REFUS 2-3 VERTEBRAE
3989	OTH CARTD BODY/SINUS OP	8163	FUS/REFUS 4-8 VERTEBRAE
3991	FREEING OF VESSEL	8164	FUS/REFUS 9 VERTEBRAE
3992	VEIN INJECT-SCLEROS AGNT	8165	VERTEBROPLASTY
3993	INSERT VES-TO-VES CANNUL	8166	KYPHOPLASTY
3994	REPLAC VES-TO-VES CANNUL	8169	OTH HIP REPAIR JAN80--SEP89
3998	HEMORRHAGE CONTROL NOS	8171	ARTHROPLAS METACARP WIT
3999	VESSEL OPERATION NEC	8172	ARTHROPLASTY METACAR W/O
400	INCIS LYMPHATIC STRUCTUR	8173	TOTAL WRIST REPLACEMENT
4011	LYMPHATIC STRUCT BIOPSY	8174	ARTHROPLASTY CARPAL WIT
4019	LYMPHATIC DIAG PROC NEC	8175	ARTHROPLASTY CARPAL W/O
4021	EXCIS DEEP CERVICAL NODE	8179	OTH REPAIR HAN/FIN/WRIS
4022	EXCISE INT MAMMARY NODE	8180	TOTAL SHOULDER REPLACE
4023	EXCISE AXILLARY NODE	8181	PARTIAL SHOULDER REPLACE
4024	EXCISE INGUINAL NODE	8182	REP RECUR SHLDER DISLOC
4029	SIMP EXC LYMPH STRUC NEC	8183	SHOULDER ARTHROPLAST NEC
403	REGIONAL LYMPH NODE EXC	8184	TOTAL ELBOW REPLACEMENT
4040	RAD NECK DISSECTION NOS	8185	ELBOW ARTHROPLASTY NEC
4041	UNILAT RAD NECK DISSECT	8186	ELBOW ARTHROPLASTY NEC
4042	BILAT RAD NECK DISSECT	8187	ELBOW ARTHROPLASTY NEC
4050	RAD NODE DISSECTION NOS	8188	RVRS TOTL SHLDR REPLACMT
4051	RAD DISSEC AXILLARY NODE	8193	SUTUR CAPSUL/LIGAMEN ARM
4052	RAD DISSEC PERIAORT NODE	8194	SUTURE CAPSUL/LIG ANK/FT
4053	RAD DISSECT ILIAC NODES	8195	SUTUR CAPSUL/LIG LEG NEC
4054	RADICAL GROIN DISSECTION	8196	OTHER REPAIR OF JOINT
4059	RAD NODE DISSECTION NEC	8197	REV JT REPL UPPER EXTREM
4061	THORAC DUCT CANNULATION	8198	OTHER JOINT DX PROCEDURE
4062	THORACIC DUCT FISTULIZAT	8199	JOINT STRUCTURE OP NEC
4063	CLOSE THORACIC DUCT FIST	8201	EXPLOR TEND SHEATH-HAND
4064	LIGATE THORACIC DUCT	8202	MYOTOMY OF HAND

4069	THORACIC DUCT OP NEC	8203	BURSOTOMY OF HAND
409	LYMPH STRUCTURE OP NEC	8209	INC SOFT TISSUE HAND NEC
412	SPLENOTOMY	8211	TENOTOMY OF HAND
4133	OPEN SPLEEN BIOPSY	8212	FASCIOTOMY OF HAND
4141	SPLENIC CYST MARSUPIAL	8219	DIV SOFT TISSUE HAND NEC
4142	EXC SPLENIC LESION/TISS	8221	EXC LES TEND SHEATH HAND
4143	PARTIAL SPLENECTOMY	8222	EXCISION HAND MUSCLE LES
415	TOTAL SPLENECTOMY	8229	EXC LES SFT TISS HND NEC
4193	EXC OF ACCESSORY SPLEEN	8231	BURSECTOMY OF HAND
4194	SPLEEN TRANSPLANTATION	8232	EXCIS HAND TEND FOR GRFT
4195	REPAIR OF SPLEEN	8233	HAND TENONECTOMY NEC
4199	SPLEEN OPERATION NEC	8234	EXC HND MUS/FAS FOR GRFT
4201	ESOPHAGEAL WEB INCISION	8235	HAND FASCIECTOMY NEC
4209	ESOPHAGEAL INCISION NEC	8236	OTHER MYECTOMY OF HAND
4210	ESOPHAGOSTOMY NOS	8239	HAND SOFT TISSUE EXC NEC
4211	CERVICAL ESOPHAGOSTOMY	8241	SUTURE TENDN SHEATH HAND
4212	ESOPH POUCH EXTERIORIZAT	8242	DELAY SUT FLEX TEND HAND
4219	EXT FISTULIZAT ESOPH NEC	8243	DELAY SUT HAND TEND NEC
4221	ESOPHAGOSCOPY BY INCIS	8244	SUTUR FLEX TEND HAND NEC
4225	OPEN BIOPSY OF ESOPHAGUS	8245	SUTURE HAND TENDON NEC
4231	LOC EXCIS ESOPH DIVERTIC	8246	SUTURE HAND MUSCLE/FASC
4232	LOCAL EXCIS ESOPHAG NEC	8251	HAND TENDON ADVANCEMENT
4239	DESTRUCT ESOPHAG LES NEC	8252	HAND TENDON RECEPTION
4240	ESOPHAGECTOMY NOS	8253	HAND TENDON REATTACHMENT
4241	PARTIAL ESOPHAGECTOMY	8254	HAND MUSCLE REATTACHMENT
4242	TOTAL ESOPHAGECTOMY	8255	CHNG HND MUS/TEN LNG NEC
4251	THORAC ESOPHAGUESOPHAGOS	8256	TRANSPLANT HAND TEND NEC
4252	THORAC ESOPHAGOGASTROST	8257	TRANSPOSIT HAND TEND NEC
4253	THORAC SM BOWEL INTERPOS	8258	TRANSPLANT HAND MUSC NEC
4254	THORAC ESOPHAGOENTER NEC	8259	TRANSPOSIT HAND MUSC NEC
4255	THORAC LG BOWEL INTERPOS	8261	POLLICIZATION OPERATION
4256	THORAC ESOPHAGOCOLOS NEC	8269	THUMB RECONSTRUCTION NEC
4258	THORAC INTERPOSITION NEC	8271	HAND TEND PULLEY RECONST
4259	THORAC ESOPHAG ANAST NEC	8272	PLAST OP HND-MUS/FAS GRF
4261	STERN ESOPHAGUESOPHAGOST	8279	PLAST OP HAND W GRFT NEC
4262	STERN ESOPHAGOGASTROSTOM	8281	TRANSFER OF FINGER
4263	STERN SM BOWEL INTERPOS	8282	REPAIR OF CLEFT HAND
4264	STERN ESOPHAGOENTER NEC	8283	REPAIR OF MACRODACTYLY
4265	STERN LG BOWEL INTERPOS	8284	REPAIR OF Mallet FINGER
4266	STERN ESOPHAGOCOLOS NEC	8285	OTHER TENODESIS OF HAND
4268	STERN INTERPOSITION NEC	8286	OTHER TENOPLASTY OF HAND
4269	STERN ESOPHAG ANAST NEC	8289	HAND PLASTIC OP NEC
427	ESOPHAGOMYOTOMY	8291	LYSIS OF HAND ADHESIONS
4282	SUTURE ESOPHAGEAL LACER	8299	HAND MUS/TEN/FAS/OPS NEC
4283	ESOPHAGOSTOMY CLOSURE	8301	TENDON SHEATH EXPLORAT
4284	ESOPH FISTULA REPAIR NEC	8302	MYOTOMY
4285	ESOPHAG STRICTURE REPAIR	8303	BURSOTOMY
4286	PROD SUBQ TUNNEL NO ANAS	8309	SOFT TISSUE INCISION NEC
4287	ESOPHAGEAL GRAFT NEC	8311	ACHILLOTENOTOMY
4289	ESOPHAGEAL REPAIR NEC	8312	ADDUCTOR TENOTOMY OF HIP
4291	LIGATION ESOPH VARIX	8313	OTHER TENOTOMY
430	GASTROTOMY	8314	FASCIOTOMY
431	GASTROTOMY	8319	SOFT TISSUE DIVISION NEC
432	OTHER GASTROSTOMY	8321	SOFT TISSUE BIOPSY
433	PYLOROMYOTOMY	8329	SOFT TISSUE DX PROC NEC
4342	LOCAL GASTR EXCISION NEC	8331	EXCIS LES TENDON SHEATH
4349	LOCAL GASTR DESTRUCT NEC	8332	EXCIS LESION OF MUSCLE
435	PROXIMAL GASTRECTOMY	8339	EXC LES SOFT TISSUE NEC
436	DISTAL GASTRECTOMY	8341	TENDON EXCISION FOR GRFT
437	PART GASTREC W JEJ ANAST	8342	OTHER TENONECTOMY
4381	PART GAST W JEJ TRANSPOS	8343	MUSC/FASC EXCIS FOR GRFT
4382	LAPAROSCOPIC VERTICAL (SLEEVE)	8344	OTHER FASCIECTOMY

	GASTERECTOMY		
4389	PARTIAL GASTRECTOMY NEC	8345	OTHER MYECTOMY
4391	TOT GAST W INTES INTERPO	8349	OTHER SOFT TISSUE EXCIS
4399	TOTAL GASTRECTOMY NEC	835	BURSECTOMY
4400	VAGOTOMY NOS	8361	TENDON SHEATH SUTURE
4401	TRUNCAL VAGOTOMY	8362	DELAYED TENDON SUTURE
4402	HIGHLY SELECT VAGOTOMY	8363	ROTATOR CUFF REPAIR
4403	SELECTIVE VAGOTOMY NEC	8364	OTHER SUTURE OF TENDON
4411	TRANSABDOMIN GASTROSCOPY	8365	OTHER MUSCLE/FASC SUTURE
4415	OPEN GASTRIC BIOPSY	8371	TENDON ADVANCEMENT
442	GASTRIC DIAGNOS PROC NEC	8372	TENDON RECESSION
4421	DILATE PYLORUS, INCISION	8373	TENDON REATTACHMENT
4429	OTHER PYLOROPLASTY	8374	MUSCLE REATTACHMENT
4431	HIGH GASTRIC BYPASS	8375	TENDON TRNSFR/TRANSPLANT
4432	PERCU GASTROJEJUNOSTOMY	8376	OTHER TENDON TRANSPOSIT
4438	LAP GASTROENTEROSTOMY	8377	MUSCLE TRNSFR/TRANSPLANT
4439	GASTROENTEROSTOMY NEC	8379	OTHER MUSCLE TRANSPOSIT
4440	SUTURE PEPTIC ULCER NOS	8381	TENDON GRAFT
4441	SUT GASTRIC ULCER SITE	8382	MUSCLE OR FASCIA GRAFT
4442	SUTURE DUODEN ULCER SITE	8383	TENDON PULLEY RECONSTRUC
445	REVISION GASTRIC ANASTOM	8384	CLUBFOOT RELEASE NEC
4461	SUTURE GASTRIC LACERAT	8385	MUSC/TEND LNG CHANGE NEC
4463	CLOSE GASTRIC FISTUL NEC	8386	QUADRICEPSPLASTY
4464	GASTROPEXY	8387	OTHER PLASTIC OPS MUSCLE
4465	ESOPHAGOGASTROPLASTY	8388	OTHER PLASTIC OPS TENDON
4466	CREAT ESOPHAGASTR SPHINCT	8389	OTHER PLASTIC OPS FASCIA
4467	LAP CREAT ESOPH SPHINCT	8391	ADHESIOLYSIS MUS/TEN/FAS
4468	LAPAROSCOP GASTROPLASTY	8392	INSERT SKEL MUSC STIMULA
4469	GASTRIC REPAIR NEC	8393	REMOV SKEL MUSC STIMULAT
4491	LIGATE GASTRIC VARICES	8399	MUS/TEN/FAS/BUR OP NEC
4492	INTRAOP GASTRIC MANIPUL	8400	UPPER LIMB AMPUTAT NOS
4495	LAP GASTRIC RESTRIC PROC	8401	FINGER AMPUTATION
4496	LAP REV GAST RESTRI PROC	8402	THUMB AMPUTATION
4497	LAP REM GAST RESTRICT DEV	8403	AMPUTATION THROUGH HAND
4498	ADJUST GAST RESTRICT DEV	8404	DISARTICULATION OF WRIST
4499	GASTRIC OPERATION NEC	8405	AMPUTATION THRU FOREARM
4500	INTESTINAL INCISION NOS	8406	DISARTICULATION OF ELBOW
4501	DUODENAL INCISION	8407	AMPUTATION THRU HUMERUS
4502	SMALL BOWEL INCISION NEC	8408	SHOULDER DISARTICULATION
4503	LARGE BOWEL INCISION	8409	FOREQUARTER AMPUTATION
4511	TRANSAB SM BOWEL ENDOSC	8410	LOWER LIMB AMPUTAT NOS
4515	OPEN SMALL BOWEL BIOPSY	8411	TOE AMPUTATION
4521	TRANSAB LG BOWEL ENDOSC	8412	AMPUTATION THROUGH FOOT
4526	OPEN LARGE BOWEL BIOPSY	8413	DISARTICULATION OF ANKLE
4531	OTH EXCISE DUODENUM LES	8414	AMPUTAT THROUGH MALLEOLI
4532	DESTRUCT DUODEN LES NEC	8415	BELOW KNEE AMPUTAT NEC
4533	LOCAL EXCIS SM BOWEL NEC	8416	DISARTICULATION OF KNEE
4534	DESTR SM BOWEL LES NEC	8417	ABOVE KNEE AMPUTATION
4541	EXCISE LG INTESTINE LES	8418	DISARTICULATION OF HIP
4549	DESTRUC LG BOWEL LES NEC	8419	HINDQUARTER AMPUTATION
4550	INTEST SEG ISOLAT NOS	8421	THUMB REATTACHMENT
4551	SM BOWEL SEGMENT ISOLAT	8422	FINGER REATTACHMENT
4552	LG BOWEL SEGMENT ISOLAT	8423	FOREARM/WRIST/HAND REATT
4561	MULT SEG SM BOWEL EXCIS	8424	UPPER ARM REATTACHMENT
4562	PART SM BOWEL RESECT NEC	8425	TOE REATTACHMENT
4563	TOTAL REMOVAL SM BOWEL	8426	FOOT REATTACHMENT
4571	MULT SEG LG BOWEL EXCIS	8427	LOWER LEG/ANKLE REATTACH
4572	CECECTOMY	8428	THIGH REATTACHMENT
4573	RIGHT HEMICOLECTOMY	8429	REATTACHMENT NEC
4574	TRANSVERSE COLON RESECT	843	AMPUTATION STUMP REVIS
4575	LEFT HEMICOLECTOMY	8440	IMPLNT/FIT PROS LIMB NOS
4576	SIGMOIDECTOMY	8444	IMPLANT ARM PROSTHESIS

4579	PART LG BOWEL EXCIS NEC	8448	IMPLANT LEG PROSTHESIS
458	TOT INTRA-ABD COLECTOMY	8458	IMP INTRSPINE DECOMP DEV
4581	LAP TOT INTR-AB COLECTMY	8459	INSERT OTHR SPIN DEVICE
4582	OP TOT INTR-ABD COLECTMY	8460	INSERT DISC PROS NOS
4583	TOT ABD COLECTMY NEC/NOS	8461	INS PART DISC PROS CERV
4590	INTESTINAL ANASTOM NOS	8462	INS TOT DISC PROST CERV
4591	SM-TO-SM BOWEL ANASTOM	8463	INS SPIN DISC PROS THOR
4592	SM BOWEL-RECT STUMP ANAS	8464	INS PART DISC PROS LUMB
4593	SMALL-TO-LARGE BOWEL NEC	8465	INS TOTL DISC PROS LUMB
4594	LG-TO-LG BOWEL ANASTOM	8466	REVISE DISC PROST CERV
4595	ANAL ANASTOMOSIS	8467	REVISE DISC PROST THORA
4601	SM BOWEL EXTERIORIZATION	8468	REVISE DISC PROSTH LUMB
4602	RESECT EXT SEG SM BOWEL	8469	REVISE DISC PROSTH NOS
4603	LG BOWEL EXTERIORIZATION	8480	INS/REPL INTERSPINE DEV
4604	RESECT EXT SEG LG BOWEL	8481	REV INTERSPINE DEVICE
4610	COLOSTOMY NOS	8482	INS/REPL PDCL STABIL DEV
4611	TEMPORARY COLOSTOMY	8483	REV PEDCL DYN STABIL DEV
4612	TEMPORARY COLOSTOMY	8484	INS/REPL FACET REPLC DEV
4613	PERMANENT COLOSTOMY	8485	REV FACET REPLACE DEVICE
4620	ILEOSTOMY NOS	8491	AMPUTATION NOS
4621	TEMPORARY ILEOSTOMY	8492	SEPARAT EQUAL JOIN TWIN
4622	CONTINENT ILEOSTOMY	8493	SEPARAT UNEQUL JOIN TWIN
4623	PERMANENT ILEOSTOMY NEC	8494	INS STRN FIX W RGD PLATE
4640	INTEST STOMA REVIS NOS	8499	MUSCULOSKELETAL OP NEC
4641	SM BOWEL STOMA REVISION	8512	OPEN BREAST BIOPSY
4642	PERICOLOST HERNIA REPAIR	8520	BREAST TISSU DESTRUC NOS
4643	LG BOWEL STOMA REVIS NEC	8521	LOCAL EXCIS BREAST LES
4650	INTEST STOMA CLOSURE NOS	8522	QUADRANT RESECT BREAST
4651	SM BOWEL STOMA CLOSURE	8523	SUBTOTAL MASTECTOMY
4652	LG BOWEL STOMA CLOSURE	8524	EXC ECTOPIC BREAST TISSU
4660	INTESTINAL FIXATION NOS	8525	EXCISION OF NIPPLE
4661	SM BOWEL-ABD WALL FIXAT	8531	UNILAT REDUCT MAMMOPLAST
4662	SMALL BOWEL FIXATION NEC	8532	BILAT REDUCT MAMMOPLASTY
4663	LG BOWEL-ABD WALL FIXAT	8533	UNIL SUBQ MAMMECT-IMPLNT
4664	LARGE BOWEL FIXATION NEC	8534	UNILAT SUBQ MAMMECT NEC
4671	DUODENAL LACERAT SUTURE	8535	BIL SUBQ MAMMECT-IMPLANT
4672	DUODENAL FISTULA CLOSURE	8536	BILAT SUBQ MAMMECTOM NEC
4673	SMALL BOWEL SUTURE NEC	8541	UNILAT SIMPLE MASTECTOMY
4674	CLOSE SM BOWEL FIST NEC	8542	BILAT SIMPLE MASTECTOMY
4675	SUTURE LG BOWEL LACERAT	8543	UNILAT EXTEN SIMP MASTEC
4676	CLOSE LG BOWEL FISTULA	8544	BILAT EXTEND SIMP MASTEC
4679	REPAIR OF INTESTINE NEC	8545	UNILAT RADICAL MASTECTOM
4680	INTRA-AB BOWEL MANIP NOS	8546	BILAT RADICAL MASTECTOMY
4681	INTRA-ABD SM BOWEL MANIP	8547	UNIL EXT RAD MASTECTOMY
4682	INTRA-ABD LG BOWEL MANIP	8548	BIL EXTEN RAD MASTECTOMY
4691	MYOTOMY OF SIGMOID COLON	8550	AUGMENT MAMMOPLASTY NOS
4692	MYOTOMY OF COLON NEC	8553	UNILAT BREAST IMPLANT
4693	REVISE SM BOWEL ANASTOM	8554	BILATERAL BREAST IMPLANT
4694	REVISE LG BOWEL ANASTOM	8555	FAT GRAFT TO BREAST
4697	TRANSPLANT OF INTESTINE	856	MASTOPEXY
4699	INTESTINAL OP NEC	857	TOTAL BREAST RECONSTRUCT
470	INTESTINAL OP NEC	8570	TOTL RECONSTC BREAST NOS
4701	LAP APPENDECTOMY	8571	LATISS DORSI MYOCUT FLAP
4709	OTHER APPENDECTOMY	8572	TRAM FLAP, PEDICLED
471	OTHER APPENDECTOMY	8573	TRAM FLAP, FREE
4711	LAP INCID APPENDECTOMY	8574	DIEP FLAP, FREE
4719	OTHER INCID APPENDECTOMY	8575	SIEA FLAP, FREE
472	DRAIN APPENDICEAL ABSC	8576	GAP FLAP, FREE
4791	APPENDICOSTOMY	8579	TOTL RECONST BREAST NEC
4792	CLOSE APPENDICEAL FISTUL	8582	BREAST SPLIT-THICK GRAFT
4799	APPENDICEAL OPS NEC	8583	BREAST FULL-THICK GRAFT
480	PROCTOTOMY	8584	BREAST PEDICLE GRAFT

481	PROCTOSTOMY	8585	BREAST MUSCLE FLAP GRAFT
4821	TRANSAB PROCTOSIGMOIDOSC	8586	TRANSPOSITION OF NIPPLE
4825	OPEN RECTAL BIOPSY	8587	NIPPLE REPAIR NEC
4835	LOCAL EXCIS RECTAL LES	8589	MAMMOPLASTY NEC
4840	PULL-THRU RES RECTUM NOS	8593	BREAST IMPLANT REVISION
4841	SOAVE SUBMUC RECT RESECT	8594	BREAST IMPLANT REMOVAL
4842	LAP PULL-THRU RES RECTUM	8595	INSER BREAST TISSU EXPAN
4843	OPN PULL-THRU RES RECTUM	8596	REMOV BREAST TISSU EXPAN
4849	PULL-THRU RECT RESEC NEC	8599	BREAST OPERATION NEC
485	ABD-PERINEAL RECT RESECT	8606	INSERT INFUSION PUMP
4850	ABDPERNEAL RES RECTM NOS	8621	EXCISION OF PILONID CYST
4851	LAP ABDPERNEAL RESC REC	8622	EXC WOUND DEBRIDEMENT
4852	OPN ABDPERNEAL RESC REC	8625	DERMABRASION
4859	ABDPERNEAL RESC RECT NEC	864	RADICAL EXCIS SKIN LES
4861	TRANSASAC RECTOSIGMOIDECT	8660	FREE SKIN GRAFT NOS
4862	ANT RECT RESECT W COLOST	8661	FULL-THICK HAND SKIN GRF
4863	ANTERIOR RECT RESECT NEC	8662	HAND SKIN GRAFT NEC
4864	POSTERIOR RECT RESECTION	8663	FULL-THICK SKIN GRFT NEC
4865	DUHAMEL RECTAL RESECTION	8665	HETEROGRAFT TO SKIN
4866	DUHAMEL RECTAL RESECTION	8666	HOMOGRAFT TO SKIN
4869	RECTAL RESECTION NEC	8667	DERMAL REGENER GRAFT
4871	SUTURE OF RECTAL LACER	8669	FREE SKIN GRAFT NEC
4872	CLOSURE OF PROCTOSTOMY	8670	PEDICLE GRAFT/FLAP NOS
4873	CLOSE RECTAL FIST NEC	8671	CUT & PREP PEDICLE GRAFT
4874	RECTORECTOSTOMY	8672	PEDICLE GRAFT ADVANCEMEN
4875	ABDOMINAL PROCTOPEXY	8673	ATTACH PEDICLE TO HAND
4876	PROCTOPEXY NEC	8674	ATTACH PEDICLE GRAFT NEC
4879	REPAIR OF RECTUM NEC	8675	REVISION OF PEDICLE GRFT
4881	PERIRECTAL INCISION	8681	REPAIR FACIAL WEAKNESS
4882	PERIRECTAL EXCISION	8682	FACIAL RHYTIDECTOMY
4891	INCIS RECTAL STRICTURE	8683	SIZE REDUCT PLASTIC OP
4892	ANORECTAL MYOMECTOMY	8684	RELAXATION OF SCAR
4893	REPAIR PERIRECT FISTULA	8685	SYNDACTYLY CORRECTION
4899	RECTAL PERIRECT OP NEC	8686	ONYCHOPLASTY
4901	INCIS PERIANAL ABSCESS	8687	FAT GRFT SKIN/SUBQ TISS
4902	PERIANAL INCISION NEC	8689	SKIN REPAIR & PLASTY NEC
4904	PERIANAL EXCISION NEC	8690	EXT FAT FOR GRFT/BANKING
4911	ANAL FISTULOTOMY	8691	SKIN EXCISION FOR GRAFT
4912	ANAL FISTULECTOMY	8693	INSERT TISSUE EXPANDER
493	ANAL/PERIAN DX PROC NEC	8694	INS/REPL SINGLE PUL GEN
4939	OTHER DESTRUC ANUS LES	8695	INS/REPL DUAL PULSE GEN
4944	HEMORRHOID CRYOTHERAPY	8696	INSERT/REPL OTH NEUROST
4945	HEMORRHOID LIGATION	8697	INS/REP 1 PUL GEN
4946	HEMORRHOIDECTOMY	8698	INS/REP 2 PUL GEN
4949	HEMORRHOID PROCEDURE NEC	8753	INTRAOPER CHOLANGIOGRAM
4951	LEFT LAT SPHINCTEROTOMY	9227	RADIOACTIVE ELEM IMPLANT
4952	POST SPHINCTEROTOMY	9504	ANESTHETIZED EYE EXAM
4959	ANAL SPHINCTEROTOMY NEC	8753	INTRAOPER CHOLANGIOGRAM
496	EXCISION OF ANUS	9227	RADIOACTIVE ELEM IMPLANT
4971	SUTURE ANAL LACERATION	9504	ANESTHETIZED EYE EXAM
4972	ANAL CERCLAGE		
4973	CLOSURE OF ANAL FISTULA		

Appendix B – Surgical DRGs

Surgical DRG codes:

001	CRANIOTOMY, AGE GREATER THAN 17 EXCEPT FOR TRAUMA	306	PROSTATECTOMY WITH CC
002	CRANIOTOMY FOR TRAUMA, AGE GREATER THAN 17	307	PROSTATECTOMY WITHOUT CC
003	CRANIOTOMY, AGE 0-17	308	MINOR BLADDER PROCEDURES WITH CC
004	SPINAL PROCEDURES	309	MINOR BLADDER PROCEDURES WITHOUT CC
005	EXTRACRANIAL VASCULAR PROCEDURES	310	TRANSURETHRAL PROCEDURES WITH CC
006	CARPAL TUNNEL RELEASE	311	TRANSURETHRAL PROCEDURES WITHOUT CC
007	PERIPHERAL AND CRANIAL NERVE AND OTHER NERVOUS SYSTEM PROCEDURES WITH CC	312	URETHRAL PROCEDURES, AGE GREATER THAN 17 WITH CC
008	PERIPHERAL AND CRANIAL NERVE AND OTHER NERVOUS SYSTEM PROCEDURES WITHOUT CC	313	URETHRAL PROCEDURES, AGE GREATER THAN 17 WITHOUT CC
036	RETINAL PROCEDURES	314	URETHRAL PROCEDURES, AGE 0-17
037	ORBITAL PROCEDURES	315	OTHER KIDNEY AND URINARY TRACT OR PROCEDURES
038	PRIMARY IRIS PROCEDURES	334	MAJOR MALE PELVIC PROCEDURES WITH CC
039	LENS PROCEDURES WITH OR WITHOUT VITRECTOMY	335	MAJOR MALE PELVIC PROCEDURES WITHOUT CC
040	EXTRAOCULAR PROCEDURES EXCEPT ORBIT, AGE GREATER THAN 17	336	TRANSURETHRAL PROSTATECTOMY WITH CC
041	EXTRAOCULAR PROCEDURES EXCEPT ORBIT, AGE 0-17	337	TRANSURETHRAL PROSTATECTOMY WITHOUT CC
042	INTRAOCULAR PROCEDURES EXCEPT RETINA, IRIS AND LENS	338	TESTES PROCEDURES FOR MALIGNANCY
049	MAJOR HEAD AND NECK PROCEDURES	339	TESTES PROCEDURES FOR NONMALIGNANCY, AGE GREATER THAN 17
050	SIALOADENECTOMY	340	TESTES PROCEDURES FOR NONMALIGNANCY, AGE 0-17
051	SALIVARY GLAND PROCEDURES EXCEPT SIALOADENECTOMY	341	PENIS PROCEDURES
052	CLEFT LIP AND PALATE REPAIR	342	CIRCUMCISION, AGE GREATER THAN 17
053	SINUS AND MASTOID PROCEDURES, AGE GREATER THAN 17	343	CIRCUMCISION, AGE 0-17
054	SINUS AND MASTOID PROCEDURES, AGE 0-17	344	OTHER MALE REPRODUCTIVE SYSTEM OR PROCEDURES FOR MALIGNANCY
055	MISCELLANEOUS EAR, NOSE, MOUTH AND THROAT PROCEDURES	345	OTHER MALE REPRODUCTIVE SYSTEM OR PROCEDURES EXCEPT FOR MALIGNANCY
056	RHINOPLASTY	353	PELVIC EVISCERATION, RADICAL HYSTERECTOMY AND RADICAL VULVECTOMY
057	TONSILLECTOMY AND ADENOIDECTOMY PROCEDURES EXCEPT TONSILLECTOMY AND/OR ADENOIDECTOMY ONLY, AGE GREATER THAN 17	354	UTERINE AND ADNEXA PROCEDURES FOR NONOVARIAN/ADNEXAL MALIGNANCY WITH CC
058	TONSILLECTOMY AND ADENOIDECTOMY PROCEDURES EXCEPT TONSILLECTOMY AND/OR ADENOIDECTOMY ONLY, AGE 0-17	355	UTERINE AND ADNEXA PROCEDURES FOR NONOVARIAN/ADNEXA PROCEDURES WITHOUT CC
059	TONSILLECTOMY AND/OR	356	FEMALE REPRODUCTIVE SYSTEM

	ADENOIDECTOMY ONLY, AGE GREATER THAN 17		RECONSTRUCTIVE PROCEDURES
060	TONSILLECTOMY AND/OR ADENOIDECTOMY ONLY, AGE 0 - 17	357	UTERINE AND ADNEXA PROCEDURES FOR OVARIAN OR ADNEXAL MALIGNANCY
061	MYRINGOTOMY WITH TUBE INSERTION, AGE GREATER THAN 17	358	UTERINE AND ADNEXA PROCEDURES FOR NONMALIGNANCY WITH CC
062	MYRINGOTOMY WITH TUBE INSERTION, AGE 0-17	359	UTERINE AND ADNEXA PROCEDURES FOR NONMALIGNANCY WITHOUT CC
063	OTHER EAR, NOSE, MOUTH AND THROAT OR PROCEDURES	360	VAGINA, CERVIX AND VULVA PROCEDURES
075	MAJOR CHEST PROCEDURES	361	LAPAROSCOPY AND INCISIONAL TUBAL INTERRUPTION
076	OTHER RESPIRATORY SYSTEM OR PROCEDURES WITH CC	362	ENDOSCOPIC TUBAL INTERRUPTION
077	OTHER RESPIRATORY SYSTEM OR PROCEDURES WITHOUT CC	363	D AND C, CONIZATION AND RADIOIMPLANT FOR MALIGNANCY
103	HEART TRANSPLANT	364	D AND C, CONIZATION EXCEPT FOR MALIGNANCY
104	CARDIAC VALVE AND OTHER MAJOR CARDIOTHORACIC PROCEDURES WITH CARDIAC CATHETERIZATION	365	OTHER FEMALE REPRODUCTIVE SYSTEM OR PROCEDURES
105	CARDIAC VALVE AND OTHER MAJOR CARDIOTHORACIC PROCEDURES WITHOUT CARDIAC CATHETERIZATION	370	CESAREAN SECTION WITH CC
106	CORONARY BYPASS WITH PTCA	371	CESAREAN SECTION WITHOUT CC
107	CORONARY BYPASS WITH CARDIAC CATHETERIZATION	374	VAGINAL DELIVERY WITH STERILIZATION AND/OR D AND C
108	OTHER CARDIOTHORACIC PROCEDURES	375	VAGINAL DELIVERY WITH OR PROCEDURE EXCEPT STERILIZATION AND/OR D AND C
109	CORONARY BYPASS WITHOUT CARDIAC CATHETERIZATION	377	POSTPARTUM AND POSTABORTION DIAGNOSES WITH OR PROCEDURE
110	MAJOR CARDIOVASCULAR PROCEDURES WITH CC	381	ABORTION WITH D AND C ASPIRATION
111	MAJOR CARDIOVASCULAR PROCEDURES WITHOUT CC	392	CURETTAGE OR HYSTERECTOMY
112	PERCUTANEOUS CARDIOVASCULAR PROCEDURES	393	SPLENECTOMY, AGE GREATER THAN 17
113	AMPUTATION FOR CIRCULATORY SYSTEM DISORDERS EXCEPT UPPER LIMB AND TOE	394	SPLENECTOMY, AGE 0-17
114	UPPER LIMB AND TOES AMPUTATION FOR CIRCULATORY SITE	400	OTHER OR PROCEDURES OF THE BLOOD AND BLOOD-FORMING ORGANS
115	PERMANENT CARDIAC PACEMAKER IMPLANT WITH ACUTE MYOCARDIAL INFARCTION, HEART FAILURE OR SHOCK OR ACID LEAD OR GENERATOR PROCEDURE	401	LYMPHOMA AND LEUKEMIA WITH MAJOR OR PROCEDURES
116	OTHER PERMANENT CARDIAC PACEMAKER IMPLANT OR PTCA WITH CORONARY ARTERIAL STENT	402	LYMPHOMA AND NONACUTE LEUKEMIA WITH OTHER OR PROCEDURE WITHOUT CC
117	CARDIAC PACEMAKER REVISION EXCEPT DEVICE REPLACEMENT	406	MYELOPROLIFERATIVE DISORDERS OR POORLY DIFFERENTIATED NEOPLASMS WITH MAJOR OR PROCEDURES WITH CC
118	CARDIAC PACEMAKER DEVICE REPLACEMENT	407	MYELOPROLIFERATIVE DISORDERS OR POORLY DIFFERENTIATED NEOPLASMS WITH MAJOR OR PROCEDURES WITHOUT CC
119	VEIN LIGATION AND STRIPPING	408	MYELOPROLIFERATIVE DISORDERS OR POORLY DIFFERENTIATED NEOPLASMS WITH OTHER OR PROCEDURES

120	OTHER CIRCULATORY SYSTEM OR PROCEDURES	415	OR PROCEDURE FOR INFECTIOUS AND PARASITIC DISEASES
146	RECTAL RESECTION WITH CC	424	OR PROCEDURES WITH PRINCIPAL DIAGNOSIS OF MENTAL ILLNESS
147	RECTAL RESECTION WITHOUT CC	439	SKIN GRAFTS FOR INJURIES
148	MAJOR SMALL AND LARGE BOWEL PROCEDURES WITH CC	440	WOUND DEBRIDEMENTS FOR INJURIES
149	MAJOR SMALL AND LARGE BOWEL PROCEDURES WITHOUT CC	441	HAND PROCEDURES FOR INJURIES
150	PERITONEAL ADHESIOLYSIS WITH CC	442	OTHER OR PROCEDURES FOR INJURIES WITH CC
151	PERITONEAL ADHESIOLYSIS WITHOUT CC	443	OTHER OR PROCEDURES FOR INJURIES WITHOUT CC
152	MINOR SMALL AND LARGE BOWEL PROCEDURES WITH CC	458	NO LONGER VALID
153	MINOR SMALL AND LARGE BOWEL PROCEDURES WITHOUT CC	459	NO LONGER VALID
154	STOMACH, ESOPHAGEAL AND DUODENAL PROCEDURES, AGE GREATER THAN 17 WITH CC	461	OR PROCEDURES WITH DIAGNOSES OF OTHER CONTACT WITH HEALTH SERVICES
155	STOMACH, ESOPHAGEAL AND DUODENAL PROCEDURES, AGE GREATER THAN 17 WITHOUT CC	468	EXTENSIVE OR PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS
156	STOMACH, ESOPHAGEAL AND DUODENAL PROCEDURES, AGE 0-17	471	BILATERAL OR MULTIPLE MAJOR JOINT PROCEDURES OF LOWER EXTREMITY
157	ANAL AND STOMAL PROCEDURES WITH CC	472	NO LONGER VALID
158	ANAL AND STOMAL PROCEDURES WITHOUT CC	476	PROSTATIC OR PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS
159	HERMIA PROCEDURES EXCEPT INGUINAL AND FEMORAL , AGE GREATER THAN 17 WITH CC	477	NONEXTENSIVE OR PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS
160	HERNIA PROCEDURES EXCEPT INGUINAL AND FEMORAL, AGE GREATER THAN 17 WITHOUT CC	478	OTHER VASCULAR PROCEDURES WITH CC
161	INGUINAL AND FEMORAL HERNIA PROCEDURES, AGE GREATER THAN 17 WITH CC	479	OTHER VASCULAR PROCEDURES WITHOUT CC
162	INGUINAL AND FEMORAL HERNIA PROCEDURES, AGE GREATER THAN 17 WITHOUT CC	480	LIVER TRANSPLANT
163	HERNIA PROCEDURES, AGE 0-17	481	BONE MARROW TRANSPLANT
164	APPENDECTOMY WITH COMPLICATED PRINCIPAL DIAGNOSIS WITH CC	482	TRACHEOSTOMY FOR FACE, MOUTH AND NECK DIAGNOSES
165	APPENDECTOMY WITH COMPLICATED PRINCIPAL DIAGNOSIS WITHOUT CC	483	TRACHEOSTOMY EXCEPT FOR FACE, MOUTH AND NECK DIAGNOSES
166	APPENDECTOMY WITHOUT COMPLICATED PRINCIPAL IAGNOSIS WITH CC	484	CRANIOTOMY FOR MULTIPLE SIGNIFICANT TRAUMA
167	APPENDECTOMY WITHOUT COMPLICATED PRINCIPAL DIAGNOSIS WITHOUT CC	485	LIMB REATTACHMENT, HIP AND FEMUR PROCEDURES FOR MULTIPLE SIGNIFICANT TRAUMA
168	MOUTH PROCEDURES WITH CC	486	OTHER OR PROCEDURES FOR MULTIPLE SIGNIFICANT TRAUMA
169	MOUTH PROCEDURES WITHOUT CC	488	HIV WITH EXTENSIVE OR PROCEDURE
170	OTHER DIGESTIVE SYSTEM OR PROCEDURES WITH CC	491	MAJOR JOINT AND LIMB REATTACHMENT PROCEDURES OF UPPER EXTREMITY
171	OTHER DIGESTIVE SYSTEM OR PROCEDURES WITHOUT CC	493	LAPAROSCOPIC CHOLECYSTECTOMY WITHOUT COMMON DUCT
191	PANCREAS, LIVER AND SHUNT PROCEDURES WITH CC	494	EXPLORATION WITH CC LAPAROSCOPIC CHOLECYSTECTOMY WITHOUT COMMON DUCT

192	PANCREAS, LIVER AND SHUNT PROCEDURES WITHOUT CC	495	EXPLORATION WITHOUT CC LUNG TRANSPLANT
193	BILIARY TRACT PROCEDURES EXCEPT ONLY CHOLECYSTECTOMY WITH OR WITHOUT COMMON DUCT EXPLORATION WITH CC	496	COMBINED ANTERIOR/POSTERIOR SPINAL FUSION
194	BILIARY TRACT PROCEDURES EXCEPT ONLY CHOLECYSTECTOMY WITH OR WITHOUT COMMON DUCT EXPLORATION WITHOUT CC	497	SPINAL FUSION WITH CC
195	CHOLECYSTECTOMY WITH COMMON DUCT EXPLORATION WITH CC	498	SPINAL FUSION WITHOUT CC
196	CHOLECYSTECTOMY WITH COMMON DUCT EXPLORATION WITHOUT CC	499	BACK AND NECK PROCEDURES EXCEPT SPINAL FUSION WITH CC
197	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE WITHOUT COMMON DUCT EXPLORATION WITH CC	500	BACK AND NECK PROCEDURES EXCEPT SPINAL FUSION WITHOUT CC
198	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE WITHOUT COMMON DUCT EXPLORATION WITHOUT CC	501	KNEE PROCEDURES WITH PRINCIPAL DIAGNOSIS OF INFECTION, WITH CC
199	HEPATOBIILIARY DIAGNOSTIC PROCEDURE FOR MALIGNANCY	502	KNEE PROCEDURES WITH PRINCIPAL DIAGNOSIS OF INFECTION, WITHOUT CC
200	HEPATOBIILIARY DIAGNOSTIC PROCEDURE FOR NONMALIGNANCY	503	KNEE PROCEDURES WITHOUT PRINCIPAL DIAGNOSIS OF INFECTION
201	OTHER HEPATOBIILIARY OR PANCREAS OR PROCEDURES	504	EXTENSIVE 3RD DEGREE BURNS W SKIN GRAFT
209	MAJOR JOINT AND LIMB REATTACHMENT PROCEDURES OF LOWER EXTREMITY	506	FULL THICKNESS BURN W SKIN GRAFT OR INHAL INJ W CC OR SIG TRAUMA
210	HIP AND FEMUR PROCEDURES EXCEPT MAJOR JOINT PROCEDURES, AGE GREATER THAN 17 WITH CC	507	FULL THICKNESS BURN W SKIN GRFT OR INHAL INJ W/O CC OR SIG TRAUMA
211	HIP AND FEMUR PROCEDURES EXCEPT MAJOR JOINT PROCEDURES, AGE GREATER THAN 17 WITHOUT CC	512	SIMULTANEOUS PANCREAS/KIDNEY TRANSPLANT
212	HIP AND FEMUR PROCEDURES EXCEPT MAJOR JOINT PROCEDURE, AGE 0-17	513	PANCREAS TRANSPLANT
213	AMPUTATION FOR MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE DISORDERS	514	CARDIAC DEFIBRILLATOR IMPLANT W CARDIAC CATH
214	NO LONGER VALID	515	CARDIAC DEFIBRILLATOR IMPLANT WITHOUT CARDIAC CATH
215	NO LONGER VALID	516	PERCUTANEOUS CARDIOVASC PROC W AMI
216	BIOPSIES OF MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE	517	PERC CARDIO PROC W NON-DRUG ELUTING STENT WITHOUT AMI
217	WOUND DEBRIDEMENT AND SKIN GRAFT EXCEPT HAND FOR MUSCULOSKELETAL AND CONNECTIVE TISSUE DISORDERS	518	PERC CARDIO PROC WITHOUT CORONARY ARTERY STENT OR AMI
218	LOWER EXTREMITY AND HUMERUS PROCEDURE EXCEPT HIP, FOOT AND FEMUR, AGE GREATER THAN 17 WITH CC	519	CERVICAL SPINAL FUSION W CC
219	LOWER EXTREMITY AND HUMERUS PROCEDURES EXCEPT HIP, FOOT AND FEMUR, AGE GREATER THAN 17 WITHOUT CC	520	CERVICAL SPINAL FUSION WITHOUT CC
220	LOWER EXTREMITY AND HUMERUS PROCEDURES EXCEPT HIP, FOOT AND FEMUR, AGE 0-17	525	HEART ASSIST SYSTEM IMPLANT

221	NO LONGER VALID	526	PERCUTNEOUS CARDIOVASCULAR PROC W DRUG ELUTING STENT W AMI
222	NO LONGER VALID	527	PERCUTNEOUS CARDIOVASCULAR PROC W DRUG ELUTING STENT WITHOUT AMI
223	MAJOR SHOULDER/ELBOW PROCEDURES OR OTHER UPPER EXTREMITY PROCEDURES WITH CC	528	INTRACRANIAL VASCULAR PROC W PDX HEMORRHAGE
224	SHOULDER, ELBOW OR FOREARM PROCEDURES EXCEPT MAJOR JOINT PROCEDURES WITHOUT CC	529	VENTRICULAR SHUNT PROCEDURES W CC
225	FOOT PROCEDURES	530	VENTRICULAR SHUNT PROCEDURES W/O CC
226	SOFT TISSUE PROCEDURES WITH CC	531	SPINAL PROCEDURES W CC
227	SOFT TISSUE PROCEDURES WITHOUT CC	532	SPINAL PROCEDURES W/O CC
228	MAJOR THUMB OR JOINT PROCEDURES OR OTHER HAND OR WRIST PROCEDURES WITH CC	533	EXTRACRANIAL PROCEDURES W CC
229	HAND OR WRIST PROCEDURES EXCEPT MAJOR JOINT PROCEDURES WITHOUT CC	534	EXTRACRANIAL PROCEDURES W/O CC
230	LOCAL EXCISION AND REMOVAL OF INTERNAL FIXATION DEVICES OF HIP AND FEMUR	535	CARDIAC DEFIB IMPLANT W CARDIAC CATH W AMI/HF/SHOCK
231	LOCAL EXCISION AND REMOVAL OF INTERNAL FIXATION DEVICES EXCEPT HIP AND FEMUR	536	CARDIAC DEFIB IMPLANT W CARDIAC CATH W/O AMI/HF/SHOCK
232	ARTHROSCOPY	537	LOCAL EXCIS & REMOV OF INT FIX DEV EXCEPT HIP & FEMUR W CC
233	OTHER MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE OR PROCEDURES WITH CC	538	LOCAL EXCIS & REMOV OF INT FIX DEV EXCEPT HIP & FEMUR W/O CC
234	OTHER MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE OR PROCEDURES WITHOUT CC	539	LYMPHOMA & LEUKEMIA W MAJOR OR PROCEDURE W CC
257	TOTAL MASTECTOMY FOR MALIGNANCY WITH CC	540	LYMPHOMA & LEUKEMIA W MAJOR OR PROCEDURE W/O CC
258	TOTAL MASTECTOMY FOR MALIGNANCY WITHOUT CC	541	TRACH W MV 96+HRS OR PDX EXC FACE, MTH, FACE & NECK DX W/MAJ OR
259	SUBTOTAL MASTECTOMY FOR MALIGNANCY WITH CC	542	TRACH W MV 96+HRS OR PDX EXC FACE, MTH, FACE & NECK DX W/O MJ OR
260	SUBTOTAL MASTECTOMY FOR MALIGNANCY WITHOUT CC	543	CRANIOTOMY WITH IMPLANTATION OF CHEMOTHERAPEUTIC AGENT OR ACUTE COMPLEX CENTRAL NERVOUS SYSTEM PRINCIPAL DIAGNOSIS
261	BREAST PROCEDURE FOR NONMALIGNANCY EXCEPT BIOPSY AND LOCAL EXCISION	544	MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY
262	BREAST BIOPSY AND LOCAL EXCISION FOR NONMALIGNANCY	545	REVISION OF HIP OR KNEE REPLACEMENT
263	SKIN GRAFT AND/OR DEBRIDEMENT FOR SKIN ULCER OR CELLULITIS WITH CC	546	SPINAL FUSION EXC CERV WITH CURVATURE OF THE SPINE OR MALIG
264	SKIN GRAFT AND OR DEBRIDEMENT FOR SKIN ULCER OR CELLULITIS WITHOUT CC	547	CORONARY BYPASS W CARDIAC CATH W MAJOR CV DX
265	SKIN GRAFT AND OR DEBRIDEMENT EXCEPT FOR SKIN ULCER OR CELLULITIS WITH CC	548	CORONARY BYPASS W CARDIAC CATH W/O MAJOR CV DX
266	SKIN GRAFT AND/OR DEBRIDEMENT EXCEPT FOR SKIN ULCER OR	549	CORONARY BYPASS W/O CARDIAC CATH W MAJOR CV DX

267	CELLULITIS WITHOUT CC PERIANAL AND PILONIDAL PROCEDURES	550	CORONARY BYPASS W/O CARDIAC CATH W/O MAJOR CV DX
268	SKIN, SUBCUTANEOUS TISSUE AND BREAST PLASTIC PROCEDURES	551	PERMANENT CARDIAC PACEMAKER IMPL W MAJ CV DX OR AICD LEAD OR GNRTR
269	OTHER SKIN, SUBCUTANEOUS TISSUE AND BREAST PROCEDURES WITH CC	552	OTHER PERMANENT CARDIAC PACEMAKER IMPLANT W/O MAJOR CV DX
270	OTHER SKIN, SUBCUTANEOUS TISSUE AND BREAST PROCEDURES WITHOUT CC	553	OTHER VASCULAR PROCEDURES W CC W MAJOR CV DX
285	AMPUTATION OF LOWER LIMB FOR ENDOCRINE, NUTRITIONAL AND METABOLIC DISORDERS	554	OTHER VASCULAR PROCEDURES W CC W/O MAJOR CV DX
286	ADRENAL AND PITUITARY PROCEDURES	555	PERCUTANEOUS CARDIOVASCULAR PROC W MAJOR CV DX
287	SKIN GRAFTS AND WOUND DEBRIDEMENTS FOR ENDOCRINE, NUTRITIONAL AND METABOLIC DISORDERS	556	PERCUTANEOUS CARDIOVASC PROC W NON-DRUG-ELUTING STENT W/O MAJ CV DX
288	OR PROCEDURES FOR OBESITY	557	PERCUTANEOUS CARDIOVASCULAR PROC W DRUG-ELUTING STENT W MAJOR CV DX
289	PARATHYROID PROCEDURES	558	PERCUTANEOUS CARDIOVASCULAR PROC W DRUG-ELUTING STENT W/O MAJ CV DX
290	THYROID PROCEDURES	567	STOMACH, ESOPHAGEAL & DUODENAL PROC AGE > 17 W CC W MAJOR GI DX
291	THYROIDECTOMY PROCEDURES	568	STOMACH, ESOPHAGEAL & DUODENAL PROC AGE > 17 W CC W/O MAJOR GI DX
292	OTHER ENDOCRINE, NUTRITIONAL AND METABOLIC OR PROCEDURES WITH CC	569	MAJOR SMALL & LARGE BOWEL PROCEDURES W CC W MAJOR GI DX
293	OTHER ENDOCRINE, NUTRITIONAL AND METABOLIC OR PROCEDURES WITHOUT CC	570	MAJOR SMALL & LARGE BOWEL PROCEDURES W CC W/O MAJOR GI DX
302	KIDNEY TRANSPLANT	573	MAJOR BLADDER PROCEDURES
303	KIDNEY, URETER AND MAJOR BLADDER PROCEDURES FOR NEOPLASM	577	CAROTID ARTERY STENT PROCEDURE
304	KIDNEY, URETER AND MAJOR BLADDER PROCEDURES FOR NONNEOPLASMS WITH CC	578	INFECTIOUS & PARASITIC DISEASES W OR PROCEDURE
305	KIDNEY, URETER AND MAJOR BLADDER PROCEDURES FOR NONNEOPLASMS WITHOUT CC	579	POSTOPERATIVE OR POST-TRAUMATIC INFECTIONS W OR PROCEDURE

Appendix C – Surgical MS-DRGs

Surgical MS-DRG codes:

001	HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM W MCC	476	AMPUTATION FOR MUSCULOSKELETAL SYS & CONN TISSUE DIS W/O CC/MCC
002	HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM W/O MCC	477	BIOPSIES OF MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE W MCC
003	ECMO OR TRACH W MV 96+ HRS OR PDX EXC FACE, MOUTH & NECK W MAJ O.R.	478	BIOPSIES OF MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE W CC
004	TRACH W MV 96+ HRS OR PDX EXC FACE, MOUTH & NECK W/O MAJ O.R.	479	BIOPSIES OF MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE W/O CC/MCC
005	LIVER TRANSPLANT W MCC OR INTESTINAL TRANSPLANT	480	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT W MCC
006	LIVER TRANSPLANT W/O MCC	481	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT W CC
007	LUNG TRANSPLANT	482	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT W/O CC/MCC
008	SIMULTANEOUS PANCREAS/KIDNEY TRANSPLANT	483	MAJOR JOINT & LIMB REATTACHMENT PROC OF UPPER EXTREMITY W CC/MCC
009	BONE MARROW TRANSPLANT	484	MAJOR JOINT & LIMB REATTACHMENT PROC OF UPPER EXTREMITY W/O CC/MCC
010	PANCREAS TRANSPLANT	485	KNEE PROCEDURES W PDX OF INFECTION W MCC
011	TRACHEOSTOMY FOR FACE, MOUTH & NECK DIAGNOSES W MCC	486	KNEE PROCEDURES W PDX OF INFECTION W CC
012	TRACHEOSTOMY FOR FACE, MOUTH & NECK DIAGNOSES W CC	487	KNEE PROCEDURES W PDX OF INFECTION W/O CC/MCC
013	TRACHEOSTOMY FOR FACE, MOUTH & NECK DIAGNOSES W/O CC/MCC	488	KNEE PROCEDURES W/O PDX OF INFECTION W CC/MCC
014	ALLOGENEIC BONE MARROW TRANSPLANT	489	KNEE PROCEDURES W/O PDX OF INFECTION W/O CC/MCC
015	AUTOLOGOUS BONE MARROW TRANSPLANT	490	BACK & NECK PROC EXC SPINAL FUSION W CC/MCC OR DISC DEVICE/NEUROSTIM
016	AUTOLOGOUS BONE MARROW TRANSPLANT W CC/MCC	491	BACK & NECK PROC EXC SPINAL FUSION W/O CC/MCC
017	AUTOLOGOUS BONE MARROW TRANSPLANT W/O CC/MCC	492	LOWER EXTREM & HUMER PROC EXCEPT HIP, FOOT, FEMUR W MCC
020	INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE W MCC	493	LOWER EXTREM & HUMER PROC EXCEPT HIP, FOOT, FEMUR W CC
021	INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE W CC	494	LOWER EXTREM & HUMER PROC EXCEPT HIP, FOOT, FEMUR W/O CC/MCC
022	INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE W/O CC/MCC	495	LOCAL EXCISION & REMOVAL INT FIX DEVICES EXC HIP & FEMUR W MCC
023	CRANIO W MAJOR DEV IMPL/ACUTE COMPLEX CNS PDX W MCC OR CHEMO IMPLANT	496	LOCAL EXCISION & REMOVAL INT FIX DEVICES EXC HIP & FEMUR W CC
024	CRANIO W MAJOR DEV IMPL/ACUTE COMPLEX CNS PDX W/O MCC	497	LOCAL EXCISION & REMOVAL INT FIX DEVICES EXC HIP & FEMUR W/O CC/MCC
025	CRANIOTOMY & ENDOVASCULAR INTRACRANIAL PROCEDURES W MCC	498	LOCAL EXCISION & REMOVAL INT FIX DEVICES OF HIP & FEMUR W CC/MCC
026	CRANIOTOMY & ENDOVASCULAR INTRACRANIAL PROCEDURES W CC	499	LOCAL EXCISION & REMOVAL INT FIX DEVICES OF HIP & FEMUR W/O CC/MCC
027	CRANIOTOMY & ENDOVASCULAR INTRACRANIAL PROCEDURES W/O	500	SOFT TISSUE PROCEDURES W MCC

	CC/MCC		
028	SPINAL PROCEDURES W MCC	501	SOFT TISSUE PROCEDURES W CC
029	SPINAL PROCEDURES W CC OR SPINAL NEUROSTIMULATORS	502	SOFT TISSUE PROCEDURES W/O CC/MCC
030	SPINAL PROCEDURES W/O CC/MCC	503	FOOT PROCEDURES W MCC
031	VENTRICULAR SHUNT PROCEDURES W MCC	504	FOOT PROCEDURES W CC
032	VENTRICULAR SHUNT PROCEDURES W CC	505	FOOT PROCEDURES W/O CC/MCC
033	VENTRICULAR SHUNT PROCEDURES W/O CC/MCC	506	MAJOR THUMB OR JOINT PROCEDURES
034	CAROTID ARTERY STENT PROCEDURE W MCC	507	MAJOR SHOULDER OR ELBOW JOINT PROCEDURES W CC/MCC
035	CAROTID ARTERY STENT PROCEDURE W CC	508	MAJOR SHOULDER OR ELBOW JOINT PROCEDURES W/O CC/MCC
036	CAROTID ARTERY STENT PROCEDURE W/O CC/MCC	509	ARTHROSCOPY
037	EXTRACRANIAL PROCEDURES W MCC	510	SHOULDER, ELBOW OR FOREARM PROC, EXC MAJOR JOINT PROC W MCC
038	EXTRACRANIAL PROCEDURES W CC	511	SHOULDER, ELBOW OR FOREARM PROC, EXC MAJOR JOINT PROC W CC
039	EXTRACRANIAL PROCEDURES W/O CC/MCC	512	SHOULDER, ELBOW OR FOREARM PROC, EXC MAJOR JOINT PROC W/O CC/MCC
040	PERIPH/CRANIAL NERVE & OTHER NERV SYST PROC W MCC	513	HAND OR WRIST PROC, EXCEPT MAJOR THUMB OR JOINT PROC W CC/MCC
041	PERIPH/CRANIAL NERVE & OTHER NERV SYST PROC W CC OR PERIPH NEUROSTIM	514	HAND OR WRIST PROC, EXCEPT MAJOR THUMB OR JOINT PROC W/O CC/MCC
042	PERIPH/CRANIAL NERVE & OTHER NERV SYST PROC W/O CC/MCC	515	OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC W MCC
113	ORBITAL PROCEDURES W CC/MCC	516	OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC W CC
114	ORBITAL PROCEDURES W/O CC/MCC	517	OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC W/O CC/MCC
115	EXTRAOCULAR PROCEDURES EXCEPT ORBIT	518	BACK & NECK PROCEDURE EXCLUDING SPINAL FUSION W MCC OR DISC DEVICE/NEUROSTIMULATOR
116	INTRAOCULAR PROCEDURES W CC/MCC	519	BACK & NECK PROCEDURE EXCLUDING SPINAL FUSION W CC
117	INTRAOCULAR PROCEDURES W/O CC/MCC	520	BACK & NECK PROCEDURE EXCLUDING SPINAL FUSION W/O CC/MCC
129	MAJOR HEAD & NECK PROCEDURES W CC/MCC OR MAJOR DEVICE	570	SKIN DEBRIDEMENT W MCC
130	MAJOR HEAD & NECK PROCEDURES W/O CC/MCC	571	SKIN DEBRIDEMENT W CC
131	CRANIAL/FACIAL PROCEDURES W CC/MCC	572	SKIN DEBRIDEMENT W/O CC/MCC
132	CRANIAL/FACIAL PROCEDURES W/O CC/MCC	573	SKIN GRAFT FOR SKN ULCER OR CELLULITIS W MCC
133	OTHER EAR, NOSE, MOUTH & THROAT O.R. PROCEDURES W CC/MCC	574	SKIN GRAFT FOR SKN ULCER OR CELLULITIS W CC
134	OTHER EAR, NOSE, MOUTH & THROAT O.R. PROCEDURES W/O CC/MCC	575	SKIN GRAFT FOR SKN ULCER OR CELLULITIS W/O CC/MCC
135	SINUS & MASTOID PROCEDURES W CC/MCC	576	SKIN GRAFT EXC FOR SKIN ULCER OR CELLULITIS W MCC
136	SINUS & MASTOID PROCEDURES W/O CC/MCC	577	SKIN GRAFT EXC FOR SKIN ULCER OR CELLULITIS W CC
137	MOUTH PROCEDURES W CC/MCC	578	SKIN GRAFT EXC FOR SKIN ULCER OR CELLULITIS W/O CC/MCC
138	MOUTH PROCEDURES W/O CC/MCC	579	OTHER SKIN, SUBCUT TISS & BREAST PROC W MCC

139	SALIVARY GLAND PROCEDURES	580	OTHER SKIN, SUBCUT TISS & BREAST PROC W CC
163	MAJOR CHEST PROCEDURES W MCC	581	OTHER SKIN, SUBCUT TISS & BREAST PROC W/O CC/MCC
164	MAJOR CHEST PROCEDURES W CC	582	MASTECTOMY FOR MALIGNANCY W CC/MCC
165	MAJOR CHEST PROCEDURES W/O CC/MCC	583	MASTECTOMY FOR MALIGNANCY W/O CC/MCC
166	OTHER RESP SYSTEM O.R. PROCEDURES W MCC	584	BREAST BIOPSY, LOCAL EXCISION & OTHER BREAST PROCEDURES W CC/MCC
167	OTHER RESP SYSTEM O.R. PROCEDURES W CC	585	BREAST BIOPSY, LOCAL EXCISION & OTHER BREAST PROCEDURES W/O CC/MCC
168	OTHER RESP SYSTEM O.R. PROCEDURES W/O CC/MCC	614	ADRENAL & PITUITARY PROCEDURES W CC/MCC
215	OTHER HEART ASSIST SYSTEM IMPLANT	615	ADRENAL & PITUITARY PROCEDURES W/O CC/MCC
216	CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W CARD CATH W MCC	616	AMPUTAT OF LOWER LIMB FOR ENDOCRINE,NUTRIT,& METABOL DIS W MCC
217	CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W CARD CATH W CC	617	AMPUTAT OF LOWER LIMB FOR ENDOCRINE,NUTRIT,& METABOL DIS W CC
218	CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W CARD CATH W/O CC/MCC	618	AMPUTAT OF LOWER LIMB FOR ENDOCRINE,NUTRIT,& METABOL DIS W/O CC/MCC
219	CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W/O CARD CATH W MCC	619	O.R. PROCEDURES FOR OBESITY W MCC
220	CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W/O CARD CATH W CC	620	O.R. PROCEDURES FOR OBESITY W CC
221	CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W/O CARD CATH W/O CC/MCC	621	O.R. PROCEDURES FOR OBESITY W/O CC/MCC
222	CARDIAC DEFIB IMPLANT W CARDIAC CATH W AMI/HF/SHOCK W MCC	622	SKIN GRAFTS & WOUND DEBRID FOR ENDOC, NUTRIT & METAB DIS W MCC
223	CARDIAC DEFIB IMPLANT W CARDIAC CATH W AMI/HF/SHOCK W/O MCC	623	SKIN GRAFTS & WOUND DEBRID FOR ENDOC, NUTRIT & METAB DIS W CC
224	CARDIAC DEFIB IMPLANT W CARDIAC CATH W/O AMI/HF/SHOCK W MCC	624	SKIN GRAFTS & WOUND DEBRID FOR ENDOC, NUTRIT & METAB DIS W/O CC/MCC
225	CARDIAC DEFIB IMPLANT W CARDIAC CATH W/O AMI/HF/SHOCK W/O MCC	625	THYROID, PARATHYROID & THYROGLOSSAL PROCEDURES W MCC
226	CARDIAC DEFIBRILLATOR IMPLANT W/O CARDIAC CATH W MCC	626	THYROID, PARATHYROID & THYROGLOSSAL PROCEDURES W CC
227	CARDIAC DEFIBRILLATOR IMPLANT W/O CARDIAC CATH W/O MCC	627	THYROID, PARATHYROID & THYROGLOSSAL PROCEDURES W/O CC/MCC
228	OTHER CARDIOTHORACIC PROCEDURES W MCC	628	OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC W MCC
229	OTHER CARDIOTHORACIC PROCEDURES W CC	629	OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC W CC
230	OTHER CARDIOTHORACIC PROCEDURES W/O CC/MCC	630	OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC W/O CC/MCC
231	CORONARY BYPASS W PTCA W MCC	652	KIDNEY TRANSPLANT
232	CORONARY BYPASS W PTCA W/O MCC	653	MAJOR BLADDER PROCEDURES W MCC
233	CORONARY BYPASS W CARDIAC CATH W MCC	654	MAJOR BLADDER PROCEDURES W CC
234	CORONARY BYPASS W CARDIAC CATH W/O MCC	655	MAJOR BLADDER PROCEDURES W/O CC/MCC

235	CORONARY BYPASS W/O CARDIAC CATH W MCC	656	KIDNEY & URETER PROCEDURES FOR NEOPLASM W MCC
236	CORONARY BYPASS W/O CARDIAC CATH W/O MCC	657	KIDNEY & URETER PROCEDURES FOR NEOPLASM W CC
237	MAJOR CARDIOVASC PROCEDURES W MCC OR THORACIC AORTIC ANEURYSM REPAIR	658	KIDNEY & URETER PROCEDURES FOR NEOPLASM W/O CC/MCC
238	MAJOR CARDIOVASC PROCEDURES W/O MCC	659	KIDNEY & URETER PROCEDURES FOR NON-NEOPLASM W MCC
239	AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE W MCC	660	KIDNEY & URETER PROCEDURES FOR NON-NEOPLASM W CC
240	AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE W CC	661	KIDNEY & URETER PROCEDURES FOR NON-NEOPLASM W/O CC/MCC
241	AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE W/O CC/MCC	662	MINOR BLADDER PROCEDURES W MCC
242	PERMANENT CARDIAC PACEMAKER IMPLANT W MCC	663	MINOR BLADDER PROCEDURES W CC
243	PERMANENT CARDIAC PACEMAKER IMPLANT W CC	664	MINOR BLADDER PROCEDURES W/O CC/MCC
244	PERMANENT CARDIAC PACEMAKER IMPLANT W/O CC/MCC	665	PROSTATECTOMY W MCC
245	AICD LEAD & GENERATOR PROCEDURES	666	PROSTATECTOMY W CC
246	PERC CARDIOVASC PROC W DRUG-ELUTING STENT W MCC OR 4+ VESSELS/STENTS	667	PROSTATECTOMY W/O CC/MCC
247	PERC CARDIOVASC PROC W DRUG-ELUTING STENT W/O MCC	668	TRANSURETHRAL PROCEDURES W MCC
248	PERC CARDIOVASC PROC W NON-DRUG-ELUTING STENT W MCC OR 4+ VES/STENTS	669	TRANSURETHRAL PROCEDURES W CC
249	PERC CARDIOVASC PROC W NON-DRUG-ELUTING STENT W/O MCC	670	TRANSURETHRAL PROCEDURES W/O CC/MCC
250	PERC CARDIOVASC PROC W/O CORONARY ARTERY STENT OR AMI W MCC	671	URETHRAL PROCEDURES W CC/MCC
251	PERC CARDIOVASC PROC W/O CORONARY ARTERY STENT OR AMI W/O MCC	672	URETHRAL PROCEDURES W/O CC/MCC
252	OTHER VASCULAR PROCEDURES W MCC	673	OTHER KIDNEY & URINARY TRACT PROCEDURES W MCC
253	OTHER VASCULAR PROCEDURES W CC	674	OTHER KIDNEY & URINARY TRACT PROCEDURES W CC
254	OTHER VASCULAR PROCEDURES W/O CC/MCC	675	OTHER KIDNEY & URINARY TRACT PROCEDURES W/O CC/MCC
255	UPPER LIMB & TOE AMPUTATION FOR CIRC SYSTEM DISORDERS W MCC	707	MAJOR MALE PELVIC PROCEDURES W CC/MCC
256	UPPER LIMB & TOE AMPUTATION FOR CIRC SYSTEM DISORDERS W CC	708	MAJOR MALE PELVIC PROCEDURES W/O CC/MCC
257	UPPER LIMB & TOE AMPUTATION FOR CIRC SYSTEM DISORDERS W/O CC/MCC	709	PENIS PROCEDURES W CC/MCC
258	CARDIAC PACEMAKER DEVICE REPLACEMENT W MCC	710	PENIS PROCEDURES W/O CC/MCC
259	CARDIAC PACEMAKER DEVICE REPLACEMENT W/O MCC	711	TESTES PROCEDURES W CC/MCC
260	CARDIAC PACEMAKER REVISION EXCEPT DEVICE REPLACEMENT W MCC	712	TESTES PROCEDURES W/O CC/MCC
261	CARDIAC PACEMAKER REVISION EXCEPT DEVICE REPLACEMENT W CC	713	TRANSURETHRAL PROSTATECTOMY W CC/MCC

262	CARDIAC PACEMAKER REVISION EXCEPT DEVICE REPLACEMENT W/O CC/MCC	714	TRANSURETHRAL PROSTATECTOMY W/O CC/MCC
263	VEIN LIGATION & STRIPPING	715	OTHER MALE REPRODUCTIVE SYSTEM O.R. PROC FOR MALIGNANCY W CC/MCC
264	OTHER CIRCULATORY SYSTEM O.R. PROCEDURES	716	OTHER MALE REPRODUCTIVE SYSTEM O.R. PROC FOR MALIGNANCY W/O CC/MCC
265	AICD LEAD PROCEDURES	717	OTHER MALE REPRODUCTIVE SYSTEM O.R. PROC EXC MALIGNANCY W CC/MCC
266	ENDOVASCULAR CARDIAC VALVE REPLACEMENT W MCC	718	OTHER MALE REPRODUCTIVE SYSTEM O.R. PROC EXC MALIGNANCY W/O CC/MCC
267	ENDOVASCULAR CARDIAC VALVE REPLACEMENT W/O MCC	734	PELVIC EVISCERATION, RAD HYSTERECTOMY & RAD VULVECTOMY W CC/MCC
326	STOMACH, ESOPHAGEAL & DUODENAL PROC W MCC	735	PELVIC EVISCERATION, RAD HYSTERECTOMY & RAD VULVECTOMY W/O CC/MCC
327	STOMACH, ESOPHAGEAL & DUODENAL PROC W CC	736	UTERINE & ADNEXA PROC FOR OVARIAN OR ADNEXAL MALIGNANCY W MCC
328	STOMACH, ESOPHAGEAL & DUODENAL PROC W/O CC/MCC	737	UTERINE & ADNEXA PROC FOR OVARIAN OR ADNEXAL MALIGNANCY W CC
329	MAJOR SMALL & LARGE BOWEL PROCEDURES W MCC	738	UTERINE & ADNEXA PROC FOR OVARIAN OR ADNEXAL MALIGNANCY W/O CC/MCC
330	MAJOR SMALL & LARGE BOWEL PROCEDURES W CC	739	UTERINE,ADNEXA PROC FOR NON- OVARIAN/ADNEXAL MALIG W MCC
331	MAJOR SMALL & LARGE BOWEL PROCEDURES W/O CC/MCC	740	UTERINE,ADNEXA PROC FOR NON- OVARIAN/ADNEXAL MALIG W CC
332	RECTAL RESECTION W MCC	741	UTERINE,ADNEXA PROC FOR NON- OVARIAN/ADNEXAL MALIG W/O CC/MCC
333	RECTAL RESECTION W CC	742	UTERINE & ADNEXA PROC FOR NON- MALIGNANCY W CC/MCC
334	RECTAL RESECTION W/O CC/MCC	743	UTERINE & ADNEXA PROC FOR NON- MALIGNANCY W/O CC/MCC
335	PERITONEAL ADHESIOLYSIS W MCC	744	D&C, CONIZATION, LAPAROSCOPY & TUBAL INTERRUPTION W CC/MCC
336	PERITONEAL ADHESIOLYSIS W CC	745	D&C, CONIZATION, LAPAROSCOPY & TUBAL INTERRUPTION W/O CC/MCC
337	PERITONEAL ADHESIOLYSIS W/O CC/MCC	746	VAGINA, CERVIX & VULVA PROCEDURES W CC/MCC
338	APPENDECTOMY W COMPLICATED PRINCIPAL DIAG W MCC	747	VAGINA, CERVIX & VULVA PROCEDURES W/O CC/MCC
339	APPENDECTOMY W COMPLICATED PRINCIPAL DIAG W CC	748	FEMALE REPRODUCTIVE SYSTEM RECONSTRUCTIVE PROCEDURES
340	APPENDECTOMY W COMPLICATED PRINCIPAL DIAG W/O CC/MCC	749	OTHER FEMALE REPRODUCTIVE SYSTEM O.R. PROCEDURES W CC/MCC
341	APPENDECTOMY W/O COMPLICATED PRINCIPAL DIAG W MCC	750	OTHER FEMALE REPRODUCTIVE SYSTEM O.R. PROCEDURES W/O CC/MCC
342	APPENDECTOMY W/O COMPLICATED PRINCIPAL DIAG W CC	765	CESAREAN SECTION W CC/MCC
343	APPENDECTOMY W/O COMPLICATED PRINCIPAL DIAG W/O CC/MCC	766	CESAREAN SECTION W/O CC/MCC
344	MINOR SMALL & LARGE BOWEL PROCEDURES W MCC	767	VAGINAL DELIVERY W STERILIZATION &/OR D&C
345	MINOR SMALL & LARGE BOWEL PROCEDURES W CC	768	VAGINAL DELIVERY W O.R. PROC EXCEPT STERIL &/OR D&C

346	MINOR SMALL & LARGE BOWEL PROCEDURES W/O CC/MCC	769	POSTPARTUM & POST ABORTION DIAGNOSES W O.R. PROCEDURE
347	ANAL & STOMAL PROCEDURES W MCC	770	ABORTION W D&C, ASPIRATION CURETTAGE OR HYSTEROTOMY
348	ANAL & STOMAL PROCEDURES W CC	799	SPLENECTOMY W MCC
349	ANAL & STOMAL PROCEDURES W/O CC/MCC	800	SPLENECTOMY W CC
350	INGUINAL & FEMORAL HERNIA PROCEDURES W MCC	801	SPLENECTOMY W/O CC/MCC
351	INGUINAL & FEMORAL HERNIA PROCEDURES W CC	802	OTHER O.R. PROC OF THE BLOOD & BLOOD FORMING ORGANS W MCC
352	INGUINAL & FEMORAL HERNIA PROCEDURES W/O CC/MCC	803	OTHER O.R. PROC OF THE BLOOD & BLOOD FORMING ORGANS W CC
353	HERNIA PROCEDURES EXCEPT INGUINAL & FEMORAL W MCC	804	OTHER O.R. PROC OF THE BLOOD & BLOOD FORMING ORGANS W/O CC/MCC
354	HERNIA PROCEDURES EXCEPT INGUINAL & FEMORAL W CC	820	LYMPHOMA & LEUKEMIA W MAJOR O.R. PROCEDURE W MCC
355	HERNIA PROCEDURES EXCEPT INGUINAL & FEMORAL W/O CC/MCC	821	LYMPHOMA & LEUKEMIA W MAJOR O.R. PROCEDURE W CC
356	OTHER DIGESTIVE SYSTEM O.R. PROCEDURES W MCC	822	LYMPHOMA & LEUKEMIA W MAJOR O.R. PROCEDURE W/O CC/MCC
357	OTHER DIGESTIVE SYSTEM O.R. PROCEDURES W CC	823	LYMPHOMA & NON-ACUTE LEUKEMIA W OTHER O.R. PROC W MCC
358	OTHER DIGESTIVE SYSTEM O.R. PROCEDURES W/O CC/MCC	824	LYMPHOMA & NON-ACUTE LEUKEMIA W OTHER O.R. PROC W CC
405	PANCREAS, LIVER & SHUNT PROCEDURES W MCC	825	LYMPHOMA & NON-ACUTE LEUKEMIA W OTHER O.R. PROC W/O CC/MCC
406	PANCREAS, LIVER & SHUNT PROCEDURES W CC	826	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W MAJ O.R. PROC W MCC
407	PANCREAS, LIVER & SHUNT PROCEDURES W/O CC/MCC	827	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W MAJ O.R. PROC W CC
408	BILIARY TRACT PROC EXCEPT ONLY CHOLECYST W OR W/O C.D.E. W MCC	828	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W MAJ O.R. PROC W/O CC/MCC
409	BILIARY TRACT PROC EXCEPT ONLY CHOLECYST W OR W/O C.D.E. W CC	829	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W OTHER O.R. PROC W CC/MCC
410	BILIARY TRACT PROC EXCEPT ONLY CHOLECYST W OR W/O C.D.E. W/O CC/MCC	830	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W OTHER O.R. PROC W/O CC/MCC
411	CHOLECYSTECTOMY W C.D.E. W MCC	853	INFECTIOUS & PARASITIC DISEASES W O.R. PROCEDURE W MCC
412	CHOLECYSTECTOMY W C.D.E. W CC	854	INFECTIOUS & PARASITIC DISEASES W O.R. PROCEDURE W CC
413	CHOLECYSTECTOMY W C.D.E. W/O CC/MCC	855	INFECTIOUS & PARASITIC DISEASES W O.R. PROCEDURE W/O CC/MCC
414	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E. W MCC	856	POSTOPERATIVE OR POST-TRAUMATIC INFECTIONS W O.R. PROC W MCC
415	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E. W CC	857	POSTOPERATIVE OR POST-TRAUMATIC INFECTIONS W O.R. PROC W CC
416	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E. W/O CC/MCC	858	POSTOPERATIVE OR POST-TRAUMATIC INFECTIONS W O.R. PROC W/O CC/MCC
417	LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E. W MCC	876	O.R. PROCEDURE W PRINCIPAL DIAGNOSES OF MENTAL ILLNESS
418	LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E. W CC	901	WOUND DEBRIDEMENTS FOR INJURIES W MCC
419	LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E. W/O CC/MCC	902	WOUND DEBRIDEMENTS FOR INJURIES W CC
420	HEPATOBIILIARY DIAGNOSTIC PROCEDURES W MCC	903	WOUND DEBRIDEMENTS FOR INJURIES W/O CC/MCC
421	HEPATOBIILIARY DIAGNOSTIC	904	SKIN GRAFTS FOR INJURIES W CC/MCC

	PROCEDURES W CC		
422	HEPATOBIILIARY DIAGNOSTIC	905	SKIN GRAFTS FOR INJURIES W/O
	PROCEDURES W/O CC/MCC		CC/MCC
423	OTHER HEPATOBIILIARY OR PANCREAS	906	HAND PROCEDURES FOR INJURIES
	O.R. PROCEDURES W MCC		
424	OTHER HEPATOBIILIARY OR PANCREAS	907	OTHER O.R. PROCEDURES FOR
	O.R. PROCEDURES W CC		INJURIES W MCC
425	OTHER HEPATOBIILIARY OR PANCREAS	908	OTHER O.R. PROCEDURES FOR
	O.R. PROCEDURES W/O CC/MCC		INJURIES W CC
453	COMBINED ANTERIOR/POSTERIOR	909	OTHER O.R. PROCEDURES FOR
	SPINAL FUSION W MCC		INJURIES W/O CC/MCC
454	COMBINED ANTERIOR/POSTERIOR	927	EXTENSIVE BURNS OR FULL
	SPINAL FUSION W CC		THICKNESS BURNS W MV 96+ HRS W
			SKIN GRAFT
455	COMBINED ANTERIOR/POSTERIOR	928	FULL THICKNESS BURN W SKIN GRAFT
	SPINAL FUSION W/O CC/MCC		OR INHAL INJ W CC/MCC
456	SPINAL FUS EXC CERV W SPINAL	929	FULL THICKNESS BURN W SKIN GRAFT
	CURV/MALIG/INFEC OR 9+ FUS W MCC		OR INHAL INJ W/O CC/MCC
457	SPINAL FUS EXC CERV W SPINAL	939	O.R. PROC W DIAGNOSES OF OTHER
	CURV/MALIG/INFEC OR 9+ FUS W CC		CONTACT W HEALTH SERVICES W MCC
458	SPINAL FUS EXC CERV W SPINAL	940	O.R. PROC W DIAGNOSES OF OTHER
	CURV/MALIG/INFEC OR 9+ FUS W/O		CONTACT W HEALTH SERVICES W CC
	CC/MCC		
459	SPINAL FUSION EXCEPT CERVICAL W	941	O.R. PROC W DIAGNOSES OF OTHER
	MCC		CONTACT W HEALTH SERVICES W/O
			CC/MCC
460	SPINAL FUSION EXCEPT CERVICAL W/O	955	CRANIOTOMY FOR MULTIPLE
	MCC		SIGNIFICANT TRAUMA
461	BILATERAL OR MULTIPLE MAJOR JOINT	956	LIMB REATTACHMENT, HIP & FEMUR
	PROCS OF LOWER EXTREMITY W MCC		PROC FOR MULTIPLE SIGNIFICANT
			TRAUMA
462	BILATERAL OR MULTIPLE MAJOR JOINT	957	OTHER O.R. PROCEDURES FOR
	PROCS OF LOWER EXTREMITY W/O		MULTIPLE SIGNIFICANT TRAUMA W
	MCC		MCC
463	WND DEBRID & SKN GRFT EXC HAND,	958	OTHER O.R. PROCEDURES FOR
	FOR MUSCULO-CONN TISS DIS W MCC		MULTIPLE SIGNIFICANT TRAUMA W CC
464	WND DEBRID & SKN GRFT EXC HAND,	959	OTHER O.R. PROCEDURES FOR
	FOR MUSCULO-CONN TISS DIS W CC		MULTIPLE SIGNIFICANT TRAUMA W/O
			CC/MCC
465	WND DEBRID & SKN GRFT EXC HAND,	969	HIV W EXTENSIVE O.R. PROCEDURE W
	FOR MUSCULO-CONN TISS DIS W/O		MCC
	CC/MCC		
466	REVISION OF HIP OR KNEE	970	HIV W EXTENSIVE O.R. PROCEDURE
	REPLACEMENT W MCC		W/O MCC
467	REVISION OF HIP OR KNEE	981	EXTENSIVE O.R. PROCEDURE
	REPLACEMENT W CC		UNRELATED TO PRINCIPAL DIAGNOSIS
			W MCC
468	REVISION OF HIP OR KNEE	982	EXTENSIVE O.R. PROCEDURE
	REPLACEMENT W/O CC/MCC		UNRELATED TO PRINCIPAL DIAGNOSIS
			W CC
469	MAJOR JOINT REPLACEMENT OR	983	EXTENSIVE O.R. PROCEDURE
	REATTACHMENT OF LOWER		UNRELATED TO PRINCIPAL DIAGNOSIS
	EXTREMITY W MCC		W/O CC/MCC
470	MAJOR JOINT REPLACEMENT OR	984	PROSTATIC O.R. PROCEDURE
	REATTACHMENT OF LOWER		UNRELATED TO PRINCIPAL DIAGNOSIS
	EXTREMITY W/O MCC		W MCC
471	CERVICAL SPINAL FUSION W MCC	985	PROSTATIC O.R. PROCEDURE
			UNRELATED TO PRINCIPAL DIAGNOSIS
			W CC
472	CERVICAL SPINAL FUSION W CC	986	PROSTATIC O.R. PROCEDURE
			UNRELATED TO PRINCIPAL DIAGNOSIS
			W/O CC/MCC
473	CERVICAL SPINAL FUSION W/O CC/MCC	987	NON-EXTENSIVE O.R. PROC

474	AMPUTATION FOR MUSCULOSKELETAL SYS & CONN TISSUE DIS W MCC	988	UNRELATED TO PRINCIPAL DIAGNOSIS W MCC NON-EXTENSIVE O.R. PROC UNRELATED TO PRINCIPAL DIAGNOSIS W CC
475	AMPUTATION FOR MUSCULOSKELETAL SYS & CONN TISSUE DIS W CC	989	NON-EXTENSIVE O.R. PROC UNRELATED TO PRINCIPAL DIAGNOSIS W/O CC/MCC

Appendix D – Medical DRGs

Medical DRG codes:

009	SPINAL DISORDERS AND INJURIES	272	MAJOR SKIN DISORDERS WITH CC
010	NERVOUS SYSTEM NEOPLASMS WITH CC	273	MAJOR SKIN DISORDERS WITHOUT CC
011	NERVOUS SYSTEM NEOPLASMS WITH CC	274	MALIGNANT BREAST DISORDERS WITH CC
012	DEGENERATIVE NERVOUS SYSTEM DISORDERS	275	MALIGNANT BREAST DISORDERS WITHOUT CC
013	MULTIPLE SCLEROSIS AND CEREBELLAR ATAXIA	276	NONMALIGNANT BREAST DISORDERS
014	SPECIFIC CEREBROVASCULAR DISORDERS EXCEPT TRANSIENT ISCHEMIC ATTACK	277	CELLULITIS, AGE GREATER THAN 17 WITH CC
015	TRANSIENT ISCHEMIC ATTACK AND PRECEREBRAL OCCLUSIONS	278	CELLULITIS, AGE GREATER THAN 17 WITHOUT CC
016	NONSPECIFIC CEREBROVASCULAR DISORDERS WITH CC	279	CELLULITIS, AGE 0-17
017	NONSPECIFIC CEREBROVASCULAR DISORDERS WITHOUT CC	283	MINOR SKIN DISORDERS WITH CC
018	CRANIAL AND PERIPHERAL NERVE DISORDERS WITH CC	284	MINOR SKIN DISORDERS WITHOUT CC
019	CRANIAL AND PERIPHERAL NERVE DISORDERS WITHOUT CC	294	DIABETES, AGE GREATER THAN 35
020	NERVOUS SYSTEM INFECTION EXCEPT VIRAL MENINGITIS	295	DIABETES, AGE 0-35
021	VIRAL MENINGITIS	296	NUTRITIONAL AND MISCELLANEOUS METABOLIC DISORDERS, AGE GREATER THAN 17 WITH CC
022	HYPERTENSIVE ENCEPHALOPATHY	297	NUTRITIONAL AND MISCELLANEOUS METABOLIC DISORDERS, AGE GREATER THAN 17 WITHOUT CC
023	NONTRAUMATIC STUPOR AND COMA	298	NUTRITIONAL AND MISCELLANEOUS METABOLIC DISORDERS, AGE 0-17
024	SEIZURE AND HEADACHE, AGE GREATER THAN 17 WITH CC	299	INBORN ERRORS OF METABOLISM

025	SEIZURE AND HEADACHE, AGE GREATER THAN 17 WITHOUT CC	300	ENDOCRINE DISORDERS WITH CC
026	SEIZURE AND HEADACHE, AGE 0-17	301	ENDOCRINE DISORDERS WITHOUT CC
027	TRAUMATIC STUPOR AND COMA, COMA GREATER THAN ONE HOUR	316	RENAL FAILURE
028	TRAUMATIC STUPOR AND COMA, COMA LESS THAN ONE HOUR, AGE GREATER THAN 17 WITH CC	317	ADMISSION FOR RENAL DIALYSIS
029	TRAUMATIC STUPOR AND COMA, COMA LESS THAN ONE HOUR, AGE GREATER THAN 17 WITHOUT CC	318	KIDNEY AND URINARY TRACT NEOPLASMS WITH CC
030	TRAUMATIC STUPOR AND COMA, COMA LESS THAN ONE HOUR, AGE 0-17	319	KIDNEY AND URINARY TRACT NEOPLASMS WITHOUT CC
031	CONCUSSION, AGE GREATER THAN 17 WITH CC	320	KIDNEY AND URINARY TRACT INFECTIONS, AGE GREATER THAN 17 WITH CC
032	CONCUSSION, AGE GREATER THAN 17 WITHOUT CC	321	KIDNEY AND URINARY TRACT INFECTIONS, AGE GREATER THAN 17 WITHOUT CC
033	CONCUSSION, AGE 0-17	322	KIDNEY AND URINARY TRACT INFECTION, AGE 0-17
034	OTHER DISORDERS OF NERVOUS SYSTEM WITH CC	323	URINARY STONES WITH CC AND/OR ESW LITHOTRIPSY
035	OTHER DISORDERS OF NERVOUS SYSTEM WITHOUT CC	324	URINARY STONES WITHOUT CC
043	HYPHEMA	325	KIDNEY AND URINARY TRACT SIGNS AND SYMPTOMS, AGE GREATER THAN 17 WITH CC
044	ACUTE MAJOR EYE INFECTIONS	326	KIDNEY AND URINARY TRACT SIGNS AND SYMPTOMS, AGE GREATER THAN 17 WITHOUT CC
045	NEUROLOGICAL EYE DISORDERS	327	KIDNEY AND URINARY TRACT SIGNS AND SYMPTOMS, AGE 0-17
046	OTHER DISORDERS OF THE EYE, AGE GREATER THAN 17 WITH CC	328	URETHRAL STRICTURE, AGE GREATER THAN 17 WITH CC
047	OTHER DISORDER OF THE EYE, AGE GREATER THAN 17 WITHOUT CC	329	URETHRAL STRICTURE, AGE GREATER THAN 17 WITHOUT CC
048	OTHER DISORDERS OF THE EYE, AGE 0-17	330	URETHRAL STRICTURE, AGE AGE 0-17
064	EAR, NOSE, MOUTH AND THROAT MALIGNANCY	331	OTHER KIDNEY AND URINARY TRACT DIAGNOSES, AGE GREATER THAN 17 WITH CC
065	DISEQUILIBRIA	332	OTHER KIDNEY AND URINARY TRACT DIAGNOSES, AGE GREATER THAN 17 WITHOUT CC
066	EPISTAXIS	333	OTHER KIDNEY AND URINARY TRACT DIAGNOSES, AGE 0-17
067	EPIGLOTTITIS	346	MALIGNANCY OF MALE REPRODUCTIVE SYSTEM WITH CC
068	OTITIS MEDIA AND URI, AGE GREATER THAN 17 WITH CC	347	MALIGNANCY OF MALE REPRODUCTIVE SYSTEM WITHOUT CC
069	OTITIS MEDIA AND URI, AGE GREATER THAN 17 WITHOUT CC	348	BENIGN PROSTATIC HYPERTROPHY WITH CC
070	OTITIS MEDIA AND URI, AGE 0-17	349	BENIGN PROSTATIC HYPERTROPHY WITHOUT CC
071	LARYNGOTRACHEITIS	350	INFLAMMATION OF THE MALE REPRODUCTIVE SYSTEM
072	NASAL TRAUMA AND DEFORMITY	351	STERILIZATION, MALE
073	OTHER EAR, NOSE, MOUTH AND THROAT DIAGNOSES, AGE GREATER THAN 17	352	OTHER MALE REPRODUCTIVE SYSTEM DIAGNOSES

074	OTHER EAR, NOSE, MOUTH AND THROAT DIAGNOSES, AGE 0-17	366	MALIGNANCY OF FEMALE REPRODUCTIVE SYSTEM WITH CC
078	PULMONARY EMBOLISM	367	MALIGNANCY OF FEMALE REPRODUCTIVE SYSTEM WITHOUT CC
079	RESPIRATORY INFECTIONS AND INFLAMMATIONS, AGE GREATER THAN 17 WITH CC	368	INFECTIONS OF FEMALE REPRODUCTIVE SYSTEM
080	RESPIRATORY INFECTIONS AND INFLAMMATIONS, AGE GREATER THAN 17 WITHOUT CC	369	MENSTRUAL AND OTHER FEMALE REPRODUCTIVE SYSTEM DISORDERS
081	RESPIRATORY INFECTIONS AND INFLAMMATIONS, AGE 0-17	372	VAGINAL DELIVERY WITH COMPLICATING DIAGNOSES
082	RESPIRATORY NEOPLASMS	373	VAGINAL DELIVERY WITHOUT COMPLICATING DIAGNOSES
083	MAJOR CHEST TRAUMA WITH CC	376	POSTPARTUM AND POSTABORTION DIAGNOSES WITHOUT OR PROCEDURE
084	MAJOR CHEST TRAUMA WITHOUT CC	378	ENTOPIC PREGNANCY
085	PLEURAL EFFUSION WITH CC	379	THREATENED ABORTION
086	PLEURAL EFFUSION WITHOUT CC	380	ABORTION WITHOUT D AND G
087	PULMONARY EDEMA AND RESPIRATORY FAILURE	382	FALSE LABOR
088	CHRONIC OBSTRUCTIVE PULMONARY DISEASE	383	OTHER ANTEPARTUM DIAGNOSES WITH MEDICAL COMPLICATIONS
089	SIMPLE PNEUMONIA AND PLEURISY, AGE GREATER THAN 17 WITH CC	384	OTHER ANTEPARTUM DIAGNOSES WITHOUT MEDICAL COMPLICATIONS
090	SIMPLE PNEUMONIA AND PLEURISY, AGE GREATER THAN 17 WITHOUT CC	395	RED BLOOD CELL DISORDERS, AGE GREATER THAN 17
091	SIMPLE PNEUMONIA AND PLEURISY, AGE 0-17	396	RED BLOOD CELL DISORDERS, AGE 0-17
092	INTERSTITIAL LUNG DISEASE WITH CC	397	COAGULATION DISORDERS
093	INTERSTITIAL LUNG DISEASE WITHOUT CC	398	RETICULOENDOTHELIAL AND IMMUNITY DISORDERS WITH CC
094	PNEUMOTHORAX WITH CC	399	RETICULOENDOTHELIAL AND IMMUNITY DISORDERS WITHOUT CC
095	PNEUMOTHORAX WITHOUT CC	403	LYMPHOMA AND NONACUTE LEUKEMIA WITH CC
096	BRONCHITIS AND ASTHMA, AGE GREATER THAN 17 WITH CC	404	LYMPHOMA AND NONACUTE LEUKEMIA WITHOUT CC
097	BRONCHITIS AND ASTHMA, AGE GREATER THAN 17 WITHOUT CC	405	ACUTE LEUKEMIA WITHOUT MAJOR OR PROCEDURE, AGE 0-17
098	BRONCHITIS AND ASTHMA, AGE 0-17	409	RADIOTHERAPY
099	RESPIRATORY SIGNS AND SYMPTOMS WITH CC	410	CHEMOTHERAPY WITHOUT ACUTE LEUKEMIA AS SECONDARY DIAGNOSIS
100	RESPIRATORY SIGNS AND SYMPTOMS WITHOUT CC	411	HISTORY OF MALIGNANCY WITHOUT ENDOSCOPY
101	OTHER RESPIRATORY SYSTEM DIAGNOSES WITH CC	412	HISTORY OF MALIGNANCY WITH ENDOSCOPY
102	OTHER RESPIRATORY SYSTEM DIAGNOSES WITHOUT CC	413	OTHER MYELOPROLIFERATIVE DISORDERS OR POORLY DIFFERENTIATED NEOPLASM DIAGNOSES WITH CC
123	CIRCULATORY DISORDERS WITH ACUTE MYOCARDIAL INFARCTION, EXPIRED	414	OTHER MYELOPROLIFERATIVE DISORDERS OR POORLY DIFFERENTIATED NEOPLASM DIAGNOSES WITHOUT CC
124	CIRCULATORY DISORDERS EXCEPT ACUTE MYOCARDIAL INFARCTION WITH CARDIAC CATHETERIZATION AND	416	SEPTICEMIA, AGE GREATER THAN 17

125	COMPLEX DIAGNOSIS CIRCULATORY DISORDERS EXCEPT ACUTE MYOCARDIAL INFARCTION WITH CARDIAC CATHETERIZATION WITHOUT COMPLEX DIAGNOSIS	417	SEPTICEMIA, AGE 0-17
126	ACUTE AND SUB ACUTE ENDOCARDITIS	418	POSTOPERATIVE AND POSTTRAUMATIC INFECTIONS
127	HEART FAILURE AND SHOCK	419	FEVER OF UNKNOWN ORIGIN, AGE GREATER THAN 17 WITH CC
128	DEEP VEIN THROMBOPHLEBITIS	420	FEVER OF UNKNOWN ORIGIN, AGE GREATER THAN 17 WITHOUT CC
129	CARDIAC ARREST, UNEXPLAINED	421	VIRAL ILLNESS, AGE GREATER THAN 17
130	PERIPHERAL VASCULAR DISORDERS WITH CC	422	VIRAL ILLNESS AND FEVER OF UNKNOWN ORIGIN, AGE 0-17
131	PERIPHERAL VASCULAR DISORDERS WITHOUT CC	423	OTHER INFECTIOUS AND PARASITIC DISEASES DIAGNOSES
132	ATHEROSCLEROSIS WITH CC	425	ACUTE ADJUSTMENT REACTIONS AND DISTURBANCES OF PSYCHOSOCIAL DYSFUNCTION
133	ATHEROSCLEROSIS WITHOUT CC	426	DEPRESSIVE NEUROSES
134	HYPERTENSION	427	NEUROSES EXCEPT DEPRESSIVE
135	CARDIAC CONGENITAL AND VALVULAR DISORDERS, AGE GREATER THAN 17 WITH CC	428	DISORDERS OF PERSONALITY AND IMPULSE CONTROL
136	CARDIAC CONGENITAL AND VALVULAR DISORDERS, AGE GREATER THAN 17 WITHOUT CC	429	ORGANIC DISTURBANCES AND MENTAL RETARDATION
137	CARDIAC CONGENITAL AND VALVULAR DISORDERS, AGE 0 - 17	430	PSYCHOSES
138	CARDIAC ARRHYTHMIA AND CONDUCTION DISORDERS WITH CC	431	CHILDHOOD MENTAL DISORDERS
139	CARDIAC ARRHYTHMIA AND CONDUCTION DISORDERS WITHOUT CC	432	OTHER MENTAL DISORDER DIAGNOSES
140	ANGINA PECTORIS	433	ALCOHOL/DRUG ABUSE OR DEPENDENCE, LEFT AGAINST MEDICAL ADVICE
141	SYNCOPE AND COLLAPSE WITH CC	434	ALCOHOL/DRUG ABUSE OR DEPENDENCE, DETOXIFICATION OR OTHER SYMPTOMATIC TREATMENT WITH CC
142	SYNCOPE AND COLLAPSE WITHOUT CC	435	ALCOHOL/DRUG ABUSE OR DEPENDENCE, DETOXIFICATION OR OTHER SYMPTOMATIC TREATMENT WITHOUT CC
143	CHEST PAIN	436	ALCOHOL/DRUG DEPENDENCE WITH REHABILITATION THERAPY
144	OTHER CIRCULATORY SYSTEM DIAGNOSES WITH CC	437	ALCOHOL DRUG DEPENDENCE WITH COMBINED REHABILITATION AND DETOXIFICATION THERAPY
145	OTHER CIRCULATORY SYSTEM DIAGNOSES WITHOUT CC	444	TRAUMATIC INJURY, AGE GREATER THAN 17 WITH CC
172	DIGESTIVE MALIGNANCY WITH CC	445	TRAUMATIC INJURY, AGE GREATER THAN 17 WITHOUT CC
173	DIGESTIVE MALIGNANCY WITHOUT CC	446	TRAUMATIC INJURY, AGE 0-17
174	GI HEMORRHAGE WITH CC	447	ALLERGIC REACTIONS, AGE GREATER THAN 17
175	GI HEMORRHAGE WITHOUT CC	448	ALLERGIC REACTIONS, AGE 0-17
176	COMPLICATED PEPTIC ULCER	449	POISONING AND TOXIC EFFECTS OF DRUGS, AGE GREATER THAN 17 WITH CC
177	UNCOMPLICATED PEPTIC ULCER WITH	450	POISONING AND TOXIC EFFECTS

	CC		OF DRUGS, AGE GREATER THAN 17 WITHOUT CC
178	UNCOMPLICATED PEPTIC ULCER WITHOUT CC	451	POISONING AND TOXIC EFFECTS OF DRUGS, AGE 0-17
179	INFLAMMATORY BOWEL DISEASE	452	COMPLICATIONS OF TREATMENT WITH CC
180	GI OBSTRUCTION WITH CC	453	COMPLICATIONS OF TREATMENT WITHOUT CC
181	GI OBSTRUCTION WITHOUT CC	454	OTHER INJURY, POISONING AND TOXIC EFFECT DIAGNOSES WITH CC
182	ESOPHAGITIS, GASTROENTERITIS AND MISCELLANEOUS DIGESTIVE DISORDERS, AGE GREATER THAN 17 WITH CC	455	OTHER INJURY, POISONING AND TOXIC EFFECT DIAGNOSES WITHOUT CC
183	ESOPHAGITIS, GASTROENTERITIS AND MISCELLANEOUS DIGESTIVE DISORDERS, AGE GREATER THAN 17 WITHOUT CC	456	NO LONGER VALID
184	ESOPHAGITIS, GASTROENTERITIS AND MISCELLANEOUS DIGESTIVE DISORDERS, AGE 0-17	457	NO LONGER VALID
185	DENTAL AND ORAL DISEASES EXCEPT EXTRACTIONS AND RESTORATIONS, AGE GREATER THAN 17	460	NO LONGER VALID
186	DENTAL AND ORAL DISEASES EXCEPT EXTRACTIONS AND RESTORATIONS, AGE 0-17	462	REHABILITATION
187	DENTAL EXTRACTIONS AND RESTORATIONS	463	SIGNS AND SYMPTOMS WITH CC
188	OTHER DIGESTIVE SYSTEM DIAGNOSES, AGE GREATER THAN 17 WITH CC	464	SIGNS AND SYMPTOMS WITHOUT CC
189	OTHER DIGESTIVE SYSTEM DIAGNOSES, AGE GREATER THAN 17 WITHOUT CC	465	AFTERCARE WITH HISTORY OF MALIGNANCY AS SECONDARY DIAGNOSIS
190	OTHER DIGESTIVE SYSTEM DIAGNOSES, AGE 0-17	466	AFTERCARE WITHOUT HISTORY OF MALIGNANCY AS SECONDARY DIAGNOSIS
202	CIRRHOSIS AND ALCOHOLIC HEPATITIS	467	OTHER FACTORS INFLUENCING HEALTH STATUS
203	MALIGNANCY OF HEPATOBILIARY SYSTEM OR PANCREAS	473	ACUTE LEUKEMIA WITHOUT MAJOR OR PROCEDURE, AGE GREATER THAN 17
204	DISORDERS OF PANCREAS EXCEPT MALIGNANCY	475	RESPIRATORY SYSTEM DIAGNOSIS WITH VENTILATOR SUPPORT
205	DISORDERS OF LIVER EXCEPT MALIGNANCY, CIRRHOSIS AND ALCOHOLIC HEPATITIS WITH CC	487	OTHER MULTIPLE SIGNIFICANT TRAUMA
206	DISORDERS OF LIVER EXCEPT MALIGNANCY, CIRRHOSIS AND ALCOHOLIC HEPATITIS WITHOUT CC	489	HIV WITH MAJOR RELATED CONDITION
207	DISORDERS OF THE BILIARY TRACT WITH CC	490	HIV WITH OR WITHOUT OTHER RELATED CONDITION
208	DISORDERS OF THE BILIARY TRACT WITHOUT CC	492	CHEMOTHERAPY WITH ACUTE LEUKEMIA AS SECONDARY DIAGNOSIS
235	FRACTURES OF FEMUR	505	EXTENSIVE 3RD DEGREE BURNS W/O SKIN GRAFT
236	FRACTURES OF HIP AND PELVIS	508	FULL THICKNESS BURN W/O SKIN GRAFT OR INHAL INJ W CC OR SIG TRAUMA
237	SPRAINS, STRAINS AND DISLOCATIONS	509	FULL THICKNESS BURN W/O SKIN

	OF HIP, PELVIS AND THIGH		GRFT OR INH INJ W/O CC OR SIG TRAUMA
238	OSTEOMYELITIS	510	NON-EXTENSIVE BURNS W CC OR SIGNIFICANT TRAUMA
239	PATHOLOGICAL FRACTURES AND MUSCULOSKELETAL AND CONNECTIVE TISSUE MALIGNANCY	511	NON-EXTENSIVE BURNS W/O CC OR SIGNIFICANT TRAUMA
240	CONNECTIVE TISSUE DISORDERS WITH CC	521	ALCOHOL/DRUG ABUSE OR DEPENDENCE W CC
241	CONNECTIVE TISSUE DISORDERS WITHOUT CC	522	ALC/DRUG ABUSE OR DEPEND W REHABILITATION THERAPY W/O CC
242	SEPTIC ARTHRITIS	523	ALC/DRUG ABUSE OR DEPEND W/O REHABILITATION THERAPY W/O CC
243	MEDICAL BACK PROBLEMS	524	TRANSIENT ISCHEMIA
244	BONE DISEASES AND SPECIFIC ARTHROPATHIES WITH CC	559	ACUTE ISCHEMIC STROKE WITH USE OF THROMBOLYTIC AGENT
245	BONE DISEASES AND SPECIFIC ARTHROPATHIES WITHOUT CC	560	BACTERIAL & TUBERCULOUS INFECTIONS OF NERVOUS SYSTEM
246	NONSPECIFIC ARTHROPATHIES	561	NON-BACTERIAL INFECTIONS OF NERVOUS SYSTEM EXCEPT VIRAL MENINGITIS
247	SIGNS AND SYMPTOMS OF MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE	562	SEIZURE AGE > 17 W CC
248	TENDONITIS, MYOSITIS AND BURSITIS	563	SEIZURE AGE > 17 W/O CC
249	AFTERCARE, MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE	564	HEADACHES AGE >17
250	FRACTURES, SPRAINS, STRAINS AND DISLOCATIONS OF FOREARM, HAND AND FOOT, AGE GREATER THAN 17 WITH CC	565	RESPIRATORY SYSTEM DIAGNOSIS WITH VENTILATOR SUPPORT 96+ HOURS
251	FRACTURES, SPRAINS, STRAINS AND DISLOCATIONS OF FOREARM, HAND AND FOOT, AGE GREATER THAN 17 WITHOUT CC	566	RESPIRATORY SYSTEM DIAGNOSIS WITH VENTILATOR SUPPORT < 96 HOURS
252	FRACTURES, SPRAINS, STRAINS AND DISLOCATIONS OF FOREARM, HAND AND FOOT, AGE 0-17	571	MAJOR ESOPHAGEAL DISORDERS
253	FRACTURES, SPRAINS, STRAINS AND DISLOCATIONS OF UPPER ARM AND LOWER LEG EXCEPT FOOT, AGE GREATER THAN 17 WITH CC	572	MAJOR GASTROINTESTINAL DISORDERS AND PERITONEAL INFECTIONS
254	FRACTURES, SPRAINS, STRAINS AND DISLOCATIONS OF UPPER ARM AND LOWER LEG EXCEPT FOOT, AGE GREATER THAN 17 WITHOUT CC	574	MAJOR HEMATOLOGIC/IMMUNOLOGIC DIAG EXC SICKLE CELL CRISIS & COAGUL
255	FRACTURES, SPRAINS, STRAINS AND DISLOCATIONS OF UPPER ARM AND LOWER LEG EXCEPT FOOT, AGE 0-17	575	SEPTICEMIA W MV96+ HOURS AGE >17
256	OTHER MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE DIAGNOSES	576	SEPTICEMIA W/O MV96+ HOURS AGE >17
271	SKIN ULCERS		

Appendix E – Medical MS-DRGs

For medical discharges using MS-DRGs (on or after October 1, 2007)

Medical MS-DRG codes:

052	Spinal disorders & injuries w CC/MCC	534	Fractures of femur w/o MCC
053	Spinal disorders & injuries w/o CC/MCC	535	Fractures of hip & pelvis w MCC
054	Nervous system neoplasms w MCC	536	Fractures of hip & pelvis w/o MCC
055	Nervous system neoplasms w/o MCC	537	Sprains, strains, & dislocations of hip, pelvis & thigh w CC/MCC
056	Degenerative nervous system disorders w MCC	538	Sprains, strains, & dislocations of hip, pelvis & thigh w/o CC/MCC
057	Degenerative nervous system disorders w/o MCC	539	Osteomyelitis w MCC
058	Multiple sclerosis & cerebellar ataxia w MCC	540	Osteomyelitis w CC
059	Multiple sclerosis & cerebellar ataxia w CC	541	Osteomyelitis w/o CC/MCC
060	Multiple sclerosis & cerebellar ataxia w/o CC/MCC	542	Pathological fractures & musculoskelet & conn tiss malig w MCC
061	Acute ischemic stroke w use of thrombolytic agent w MCC	543	Pathological fractures & musculoskelet & conn tiss malig w CC
062	Acute ischemic stroke w use of thrombolytic	544	Pathological fractures & musculoskelet &

063	agent w CC	545	conn tiss malig w/o CC/MCC
	Acute ischemic stroke w use of thrombolytic agent w/o CC/MCC		Connective tissue disorders w MCC
064	Intracranial hemorrhage or cerebral infarction w MCC	546	Connective tissue disorders w CC
065	Intracranial hemorrhage or cerebral infarction w CC	547	Connective tissue disorders w/o CC/MCC
066	Intracranial hemorrhage or cerebral infarction w/o CC/MCC	548	Septic arthritis w MCC
067	Nonspecific cva & precerebral occlusion w/o infarct w MCC	549	Septic arthritis w CC
068	Nonspecific cva & precerebral occlusion w/o infarct w/o MCC	550	Septic arthritis w/o CC/MCC
069	Transient ischemia	551	Medical back problems w MCC
070	Nonspecific cerebrovascular disorders w MCC	552	Medical back problems w/o MCC
071	Nonspecific cerebrovascular disorders w CC	553	Bone diseases & arthropathies w MCC
072	Nonspecific cerebrovascular disorders w/o CC/MCC	554	Bone diseases & arthropathies w/o MCC
073	Cranial & peripheral nerve disorders w MCC	555	Signs & symptoms of musculoskeletal system & conn tissue w MCC
074	Cranial & peripheral nerve disorders w/o MCC	556	Signs & symptoms of musculoskeletal system & conn tissue w/o MCC
075	Viral meningitis w CC/MCC	557	Tendonitis, myositis & bursitis w MCC
076	Viral meningitis w/o CC/MCC	558	Tendonitis, myositis & bursitis w/o MCC
077	Hypertensive encephalopathy w MCC	559	Aftercare, musculoskeletal system & connective tissue w MCC
078	Hypertensive encephalopathy w CC	560	Aftercare, musculoskeletal system & connective tissue w CC
079	Hypertensive encephalopathy w/o CC/MCC	561	Aftercare, musculoskeletal system & connective tissue w/o CC/MCC
080	Nontraumatic stupor & coma w MCC	562	Fx, sprn, strn & disl except femur, hip, pelvis & thigh w MCC
081	Nontraumatic stupor & coma w/o MCC	563	Fx, sprn, strn & disl except femur, hip, pelvis & thigh w/o MCC
082	Traumatic stupor & coma, coma >1 hr w MCC	564	Other musculoskeletal sys & connective tissue diagnoses w MCC
083	Traumatic stupor & coma, coma >1 hr w CC	565	Other musculoskeletal sys & connective tissue diagnoses w CC
084	Traumatic stupor & coma, coma >1 hr w/o CC/MCC	566	Other musculoskeletal sys & connective tissue diagnoses w/o CC/MCC
085	Traumatic stupor & coma, coma <1 hr w MCC	592	Skin ulcers w MCC
086	Traumatic stupor & coma, coma <1 hr w CC	593	Skin ulcers w CC
087	Traumatic stupor & coma, coma <1 hr w/o CC/MCC	594	Skin ulcers w/o CC/MCC
088	Concussion w MCC	595	Major skin disorders w MCC
089	Concussion w CC	596	Major skin disorders w/o MCC
090	Concussion w/o CC/MCC	597	Malignant breast disorders w MCC
091	Other disorders of nervous system w MCC	598	Malignant breast disorders w CC
092	Other disorders of nervous system w CC	599	Malignant breast disorders w/o CC/MCC
093	Other disorders of nervous system w/o CC/MCC	600	Non-malignant breast disorders w CC/MCC
094	Bacterial & tuberculous infections of nervous system w MCC	601	Non-malignant breast disorders w/o CC/MCC
095	Bacterial & tuberculous infections of nervous system w CC	602	Cellulitis w MCC
096	Bacterial & tuberculous infections of nervous system w/o CC/MCC	603	Cellulitis w/o MCC
097	Non-bacterial infect of nervous sys exc viral	604	Trauma to the skin, subcut tiss & breast w

	meningitis w MCC		MCC
098	Non-bacterial infect of nervous sys exc viral meningitis w CC	605	Trauma to the skin, subcut tiss & breast w/o MCC
099	Non-bacterial infect of nervous sys exc viral meningitis w/o CC/MCC	606	Minor skin disorders w MCC
100	Seizures w MCC	607	Minor skin disorders w/o MCC
101	Seizures w/o MCC	637	Diabetes w MCC
102	Headaches w MCC	638	Diabetes w CC
103	Headaches w/o MCC	639	Diabetes w/o CC/MCC
121	Acute major eye infections w CC/MCC	640	Nutritional & misc metabolic disorders w MCC
122	Acute major eye infections w/o CC/MCC	641	Nutritional & misc metabolic disorders w/o MCC
123	Neurological eye disorders	642	Inborn errors of metabolism
124	Other disorders of the eye w MCC	643	Endocrine disorders w MCC
125	Other disorders of the eye w/o MCC	644	Endocrine disorders w CC
146	Ear, nose, mouth & throat malignancy w MCC	645	Endocrine disorders w/o CC/MCC
147	Ear, nose, mouth & throat malignancy w CC	682	Renal failure w MCC
148	Ear, nose, mouth & throat malignancy w/o CC/MCC	683	Renal failure w CC
149	Dysequilibrium	684	Renal failure w/o CC/MCC
150	Epistaxis w MCC	685	Admit for renal dialysis
151	Epistaxis w/o MCC	686	Kidney & urinary tract neoplasms w MCC
152	Otitis media & URI w MCC	687	Kidney & urinary tract neoplasms w CC
153	Otitis media & URI w/o MCC	688	Kidney & urinary tract neoplasms w/o CC/MCC
154	Nasal trauma & deformity w MCC	689	Kidney & urinary tract infections w MCC
155	Nasal trauma & deformity w CC	690	Kidney & urinary tract infections w/o MCC
156	Nasal trauma & deformity w/o CC/MCC	691	Urinary stones w esw lithotripsy w CC/MCC
157	Dental & Oral Diseases w MCC	692	Urinary stones w esw lithotripsy w/o CC/MCC
158	Dental & Oral Diseases w CC	693	Urinary stones w/o esw lithotripsy w MCC
159	Dental & Oral Diseases w/o CC/MCC	694	Urinary stones w/o esw lithotripsy w/o MCC
175	Pulmonary embolism w MCC	695	Kidney & urinary tract signs & symptoms w MCC
176	Pulmonary embolism w/o MCC	696	Kidney & urinary tract signs & symptoms w/o MCC
177	Respiratory infections & inflammations w MCC	697	Urethral stricture
178	Respiratory infections & inflammations w CC	698	Other kidney & urinary tract diagnoses w MCC
179	Respiratory infections & inflammations w/o CC/MCC	699	Other kidney & urinary tract diagnoses w CC
180	Respiratory neoplasms w MCC	700	Other kidney & urinary tract diagnoses w/o CC/MCC
181	Respiratory neoplasms w CC	722	Malignancy, male reproductive system w MCC
182	Respiratory neoplasms w/o CC/MCC	723	Malignancy, male reproductive system w CC
183	Major chest trauma w MCC	724	Malignancy, male reproductive system w/o CC/MCC
184	Major chest trauma w CC	725	Benign prostatic hypertrophy w MCC
185	Major chest trauma w/o CC/MCC	726	Benign prostatic hypertrophy w/o MCC
186	Pleural effusion w MCC	727	Inflammation of the male reproductive system w MCC
187	Pleural effusion w CC	728	Inflammation of the male reproductive system w/o MCC
188	Pleural effusion w/o CC/MCC	729	Other male reproductive system diagnoses w CC/MCC
189	Pulmonary edema & respiratory failure	730	Other male reproductive system diagnoses

190	Chronic obstructive pulmonary disease w MCC	754	w/o CC/MCC Malignancy, female reproductive system w MCC
191	Chronic obstructive pulmonary disease w CC	755	Malignancy, female reproductive system w CC
192	Chronic obstructive pulmonary disease w/o CC/MCC	756	Malignancy, female reproductive system w/o CC/MCC
193	Simple pneumonia & pleurisy w MCC	757	Infections, female reproductive system w MCC
194	Simple pneumonia & pleurisy w CC	758	Infections, female reproductive system w CC
195	Simple pneumonia & pleurisy w/o CC/MCC	759	Infections, female reproductive system w/o CC/MCC
196	Interstitial lung disease w MCC	760	Menstrual & other female reproductive system disorders w CC/MCC
197	Interstitial lung disease w CC	761	Menstrual & other female reproductive system disorders w/o CC/MCC
198	Interstitial lung disease w/o CC/MCC	774	Vaginal delivery w complicating diagnoses
199	Pneumothorax w MCC	775	Vaginal delivery w/o complicating diagnoses
200	Pneumothorax w CC	776	Postpartum & post abortion diagnoses w/o O.R. procedure
201	Pneumothorax w/o CC/MCC	777	Ectopic pregnancy
202	Bronchitis & asthma w CC/MCC	778	Threatened abortion
203	Bronchitis & asthma w/o CC/MCC	779	Abortion w/o D&C
204	Respiratory signs & symptoms	780	False labor
205	Other respiratory system diagnoses w MCC	781	Other antepartum diagnoses w medical complications
206	Other respiratory system diagnoses w/o MCC	782	Other antepartum diagnoses w/o medical complications
207	Respiratory system diagnosis w ventilator support 96+ hours	789	Neonates, died or transferred to another acute care facility
208	Respiratory system diagnosis w ventilator support <96 hours	790	Extreme immaturity or respiratory distress syndrome, neonate
280	Acute myocardial infarction, discharged alive w MCC	791	Prematurity w major problems
281	Acute myocardial infarction, discharged alive w CC	792	Prematurity w/o major problems
282	Acute myocardial infarction, discharged alive w/o CC/MCC	793	Full term neonate w major problems
283	Acute myocardial infarction, expired w MCC	794	Neonate w other significant problems
284	Acute myocardial infarction, expired w CC	795	Normal newborn
285	Acute myocardial infarction, expired w/o CC/MCC	808	Major hematol/immun diag exc sickle cell crisis & coagul w MCC
286	Circulatory disorders except AMI, w card cath w MCC	809	Major hematol/immun diag exc sickle cell crisis & coagul w CC
287	Circulatory disorders except AMI, w card cath w/o MCC	810	Major hematol/immun diag exc sickle cell crisis & coagul w/o CC/MCC
288	Acute & subacute endocarditis w MCC	811	Red blood cell disorders w MCC
289	Acute & subacute endocarditis w CC	812	Red blood cell disorders w/o MCC
290	Acute & subacute endocarditis w/o CC/MCC	813	Coagulation disorders
291	Heart failure & shock w MCC	814	Reticuloendothelial & immunity disorders w MCC
292	Heart failure & shock w CC	815	Reticuloendothelial & immunity disorders w CC
293	Heart failure & shock w/o CC/MCC	816	Reticuloendothelial & immunity disorders w/o CC/MCC
294	Deep vein thrombophlebitis w CC/MCC	834	Acute leukemia w/o major O.R. procedure w MCC
295	Deep vein thrombophlebitis w/o CC/MCC	835	Acute leukemia w/o major O.R. procedure w CC

296	Cardiac arrest, unexplained w MCC	836	Acute leukemia w/o major O.R. procedure w/o CC/MCC
297	Cardiac arrest, unexplained w CC	837	Chemo w acute leukemia as sdx or w high dose chemo agent w MCC
298	Cardiac arrest, unexplained w/o CC/MCC	838	Chemo w acute leukemia as sdx w CC or high dose chemo agent
299	Peripheral vascular disorders w MCC	839	Chemo w acute leukemia as sdx w/o CC/MCC
300	Peripheral vascular disorders w CC	840	Lymphoma & non-acute leukemia w MCC
301	Peripheral vascular disorders w/o CC/MCC	841	Lymphoma & non-acute leukemia w CC
302	Atherosclerosis w MCC	842	Lymphoma & non-acute leukemia w/o CC/MCC
303	Atherosclerosis w/o MCC	843	Other myeloprolif dis or poorly diff neopl diag w MCC
304	Hypertension w MCC	844	Other myeloprolif dis or poorly diff neopl diag w CC
305	Hypertension w/o MCC	845	Other myeloprolif dis or poorly diff neopl diag w/o CC/MCC
306	Cardiac congenital & valvular disorders w MCC	846	Chemotherapy w/o acute leukemia as secondary diagnosis w MCC
307	Cardiac congenital & valvular disorders w/o MCC	847	Chemotherapy w/o acute leukemia as secondary diagnosis w CC
308	Cardiac arrhythmia & conduction disorders w MCC	848	Chemotherapy w/o acute leukemia as secondary diagnosis w/o CC/MCC
309	Cardiac arrhythmia & conduction disorders w CC	849	Radiotherapy
310	Cardiac arrhythmia & conduction disorders w/o CC/MCC	862	Postoperative & post-traumatic infections w MCC
311	Angina pectoris	863	Postoperative & post-traumatic infections w/o MCC
312	Syncope & collapse	864	Fever of unknown origin
313	Chest pain	865	Viral illness w MCC
314	Other circulatory system diagnoses w MCC	866	Viral illness w/o MCC
315	Other circulatory system diagnoses w CC	867	Other infectious & parasitic diseases diagnoses w MCC
316	Other circulatory system diagnoses w/o CC/MCC	868	Other infectious & parasitic diseases diagnoses w CC
368	Major esophageal disorders w MCC	869	Other infectious & parasitic diseases diagnoses w/o CC/MCC
369	Major esophageal disorders w CC	870	Septicemia w MV 96+ hours
370	Major esophageal disorders w/o CC/MCC	871	Septicemia w/o MV 96+ hours w MCC
371	Major gastrointestinal disorders & peritoneal infections w MCC	872	Septicemia w/o MV 96+ hours w/o MCC
372	Major gastrointestinal disorders & peritoneal infections w CC	880	Acute adjustment reaction & psychosocial dysfunction
373	Major gastrointestinal disorders & peritoneal infections w/o CC/MCC	881	Depressive neuroses
374	Digestive malignancy w MCC	882	Neuroses except depressive
375	Digestive malignancy w CC	883	Disorders of personality & impulse control
376	Digestive malignancy w/o CC/MCC	884	Organic disturbances & mental retardation
377	G.I. hemorrhage w MCC	885	Psychoses
378	G.I. hemorrhage w CC	886	Behavioral & developmental disorders
379	G.I. hemorrhage w/o CC/MCC	887	Other mental disorder diagnoses
380	Complicated peptic ulcer w MCC	894	Alcohol/drug abuse or dependence, left ama
381	Complicated peptic ulcer w CC	895	Alcohol/drug abuse or dependence w rehabilitation therapy
382	Complicated peptic ulcer w/o CC/MCC	896	Alcohol/drug abuse or dependence w/o rehabilitation therapy w MCC
383	Uncomplicated peptic ulcer w MCC	897	Alcohol/drug abuse or dependence w/o rehabilitation therapy w/o MCC

384	Uncomplicated peptic ulcer w/o MCC	913	Traumatic injury w MCC
385	Inflammatory bowel disease w MCC	914	Traumatic injury w/o MCC
386	Inflammatory bowel disease w CC	915	Allergic reactions w MCC
387	Inflammatory bowel disease w/o CC/MCC	916	Allergic reactions w/o MCC
388	G.I. obstruction w MCC	917	Poisoning & toxic effects of drugs w MCC
389	G.I. obstruction w CC	918	Poisoning & toxic effects of drugs w/o MCC
390	G.I. obstruction w/o CC/MCC	919	Complications of treatment w MCC
391	Esophagitis, gastroent & misc digest disorders w MCC	920	Complications of treatment w CC
392	Esophagitis, gastroent & misc digest disorders w/o MCC	921	Complications of treatment w/o CC/MCC
393	Other digestive system diagnoses w MCC	922	Other injury, poisoning & toxic effect diag w MCC
394	Other digestive system diagnoses w CC	923	Other injury, poisoning & toxic effect diag w/o MCC
395	Other digestive system diagnoses w/o CC/MCC	933	Extensive burns or full thickness burns w MV 96+ hrs w/o skin graft
432	Cirrhosis & alcoholic hepatitis w MCC	934	Full thickness burn w/o skin grft or inhal inj
433	Cirrhosis & alcoholic hepatitis w CC	935	Non-extensive burns
434	Cirrhosis & alcoholic hepatitis w/o CC/MCC	945	Rehabilitation w CC/MCC
435	Malignancy of hepatobiliary system or pancreas w MCC	946	Rehabilitation w/o CC/MCC
436	Malignancy of hepatobiliary system or pancreas w CC	947	Signs & symptoms w MCC
437	Malignancy of hepatobiliary system or pancreas w/o CC/MCC	948	Signs & symptoms w/o MCC
438	Disorders of pancreas except malignancy w MCC	949	Aftercare w CC/MCC
439	Disorders of pancreas except malignancy w CC	950	Aftercare w/o CC/MCC
440	Disorders of pancreas except malignancy w/o CC/MCC	951	Other factors influencing health status
441	Disorders of liver except malig,cirr,alc hepa w MCC	963	Other multiple significant trauma w MCC
442	Disorders of liver except malig,cirr,alc hepa w CC	964	Other multiple significant trauma w CC
443	Disorders of liver except malig,cirr,alc hepa w/o CC/MCC	965	Other multiple significant trauma w/o CC/MCC
444	Disorders of the biliary tract w MCC	974	HIV w major related condition w MCC
445	Disorders of the biliary tract w CC	975	HIV w major related condition w CC
446	Disorders of the biliary tract w/o CC/MCC	976	HIV w major related condition w/o CC/MCC
533	Fractures of femur w MCC	977	HIV w or w/o other related condition

Appendix F – High-Risk Immunocompromised State Diagnosis and Procedure Codes

ICD-9-CM High-risk immunocompromised state diagnosis codes:

042	HUMAN IMMUNODEFICIENCY VIRUS (HIV) DISEASE	20511	CHR MYL LEUK W RMSION
1363	PNEUMOCYSTOSIS	20512	CHR MYEL LEUK IN RELAPSE
1992	MALIG NEOPL-TRANSP ORGAN	2052	SUBACUT MYELOID LEUKEMIA
20000	RETCLSRC UNSP XTRNDL ORG	20520	SBAC MYL LEUK W/O RMSION
20001	RETICULOSARCOMA HEAD	20521	SBAC MYL LEUK W RMSION
20002	RETICULOSARCOMA THORAX	20522	SBAC MYL LEUK IN RELAPSE
20003	RETICULOSARCOMA ABDOM	2053	MYELOID SARCOMA
20004	RETICULOSARCOMA AXILLA	20530	MYL SRCOMA W/O RMSION
20005	RETICULOSARCOMA INGUIN	20531	MYL SRCOMA W RMSION
20006	RETICULOSARCOMA PELVIC	20532	MYEL SARCOMA IN RELAPSE
20007	RETICULOSARCOMA SPLEEN	2058	MYELOID LEUKEMIA NEC
20008	RETICULOSARCOMA MULT	20580	OTH MYL LEUK W/O RMSION
20010	LYMPHSRC UNSP XTRNDL ORG	20581	OTH MYL LEUK W RMSION
20011	LYMPHOSARCOMA HEAD	20582	OTH MYEL LEUK IN RELAPSE
20012	LYMPHOSARCOMA THORAX	2059	MYELOID LEUKEMIA NOS
20013	LYMPHOSARCOMA ABDOM	20590	UNS MYL LEUK W/O RMSION
20014	LYMPHOSARCOMA AXILLA	20591	UNS MYL LEUK W RMSION
20015	LYMPHOSARCOMA INGUIN	20592	MYEL LEUK NOS IN RELAPSE
20016	LYMPHOSARCOMA PELVIC	2060	ACUTE MONOCYTIC LEUKEMIA
20017	LYMPHOSARCOMA SPLEEN	20600	ACT MONO LEUK W/O RMSION
20018	LYMPHOSARCOMA MULT	20601	ACT MONO LEUK W RMSION
20020	BRKT TMR UNSP XTRNDL ORG	20602	ACT MONO LEUK IN RELAPSE
20021	BURKITT'S TUMOR HEAD	2061	CHR MONOCYTIC LEUKEMIA
20022	BURKITT'S TUMOR THORAX	20610	CHR MONO LEUK W/O RMSION
20023	BURKITT'S TUMOR ABDOM	20611	CHR MONO LEUK W RMSION
20024	BURKITT'S TUMOR AXILLA	20612	CHR MONO LEUK IN RELAPSE
20025	BURKITT'S TUMOR INGUIN	2062	SUBAC MONOCYTIC LEUKEMIA
20026	BURKITT'S TUMOR PELVIC	20620	SBAC MONO LEUK W/O RMSION
20027	BURKITT'S TUMOR SPLEEN	20621	SBAC MONO LEUK W RMSION
20028	BURKITT'S TUMOR MULT	20622	SBAC MONO LEU IN RELAPSE
20080	OTH VARN UNSP XTRNDL ORG	2068	MONOCYTIC LEUKEMIA NEC
20081	MIXED LYMPHOSARC HEAD	20680	OTH MONO LEUK W/O RMSION
20082	MIXED LYMPHOSARC THORAX	20681	OTH MONO LEUK W RMSION
20083	MIXED LYMPHOSARC ABDOM	20682	OTH MONO LEUK IN RELAPSE
20084	MIXED LYMPHOSARC AXILLA	2069	MONOCYTIC LEUKEMIA NOS
20085	MIXED LYMPHOSARC INGUIN	20690	UNS MONO LEUK W/O RMSION
20086	MIXED LYMPHOSARC PELVIC	20691	UNS MONO LEUK W RMSION
20087	MIXED LYMPHOSARC SPLEEN	20692	MONO LEUK NOS RELAPSE
20088	MIXED LYMPHOSARC MULT	2070	ACUTE ERYTHREMIA
20302	MULT MYELOMA IN RELAPSE	20700	ACT ERYTH/ERYLK W/O RMSION
20312	PLSM CEL LEUK IN RELAPSE	20701	ACT ERYTH/ERYLK W RMSION
20382	OTH IMNPRLF NEO-RELAPSE	20702	AC ERYTH/ERYLK IN RELAPSE
20402	ACT LYMP LEUK IN RELAPSE	2071	CHRONIC ERYTHREMIA
20412	CHR LYMP LEUK IN RELAPSE	20710	CHR ERYTHRM W/O REMISION
20422	SBAC LYM LEUK IN RELAPSE	20711	CHR ERYTHRM W REMISION
20482	OTH LYM LEUK IN RELAPSE	20712	CHR ERYTHRMIA IN RELAPSE
20492	LYMP LEUK NOS RELAPSE	2072	MEGAKARYOCYTIC LEUKEMIA
2050	ACUTE MYELOID LEUKEMIA	20720	MGKRYCYT LEUK W/O RMSION
20500	ACT MYL LEUK W/O RMSION	20721	MGKRYCYT LEUK W RMSION
20501	ACT MYL LEUK W RMSION	20722	MGKRYCYT LEUK IN RELAPSE
20502	ACT MYEL LEUK IN RELAPSE	2078	SPECIFIED LEUKEMIA NEC
2051	CHRONIC MYELOID LEUKEMIA	20780	OTH SPF LEUK W/O REMSION
20510	CHR MYL LEUK W/O RMSION	20781	OTH SPF LEUK W REMSION
		20782	OTH SPF LEUK IN RELAPSE

¹ The procedure or diagnosis codes are continuously updated. The current list of ICD-9-CM codes is valid for October 2012 through September 2013. Italicized codes are not active in Fiscal Year 2013.

2080	ACT LEUK UNS CL W/O RMSN	2799	UNDSPECIFIED DISORDER OF IMMUNE MECHANISM
20800	ACT LEUK UNS CL W/O RMSN	28409	CONST APLASTC ANEMIA NEC
20801	ACT LEUK UNS CL W RMSN	2841	PANCYTOPENIA
20802	AC LEUK UNS CL RELAPSE	28411	ANTINEOPLASTIC CHEMOTHERAPY INDUCED PANCYTOPENIA
2081	CHRONIC LEUKEMIA NOS	28412	OTHER DRUG INDUCED PANCYTOPENIA
20810	CHR LEUK UNS CL W/O RMSN	28419	OTHR PANCYTOPENIA
20811	CHR LEUK UNS CL W RMSN	2880	AGRANULOCYTOSIS
20812	CH LEU UNS CL IN RELAPSE	28800	NEUTROPENIA NOS
2082	SUBACUTE LEUKEMIA NOS	28801	CONGENITAL NEUTROPENIA
20820	SBAC LEUK UNS CL W/O RMS	28802	CYCLIC NEUTROPENIA
20821	SBAC LEUK UNS CL W RMSN	28803	DRUG INDUCED NEUTROPENIA
20822	SBAC LEU UNS CL-RELAPSE	28809	NEUTROPENIA NEC
2088	LEUKEMIA-UNSPEC CELL NEC	2881	FUNCTIONAL DISORDERS OF POLYMORPHONUCLEAR NEUTROPHILS
20880	OTH LEUK UNS CL W/O RMSN	2882	GENETIC ANOMALIES OF LUKOCYTES
20881	OTH LEUK UNS CL W RMSN	2884	HEMOPHAGOCYTIC SYNDROMES
20882	OTH LEUK UNS CL-RELAPSE	28850	LEUKOCYTOPENIA NOS
2089	LEUKEMIA-UNSPEC CELL NOS	28851	LYMPHOCYTOPENIA
20890	LEUKEMIA NOS W/O REMSION	28859	DECREASED WBC COUNT NEC
20891	LEUKEMIA NOS W REMISSIO	28953	NEUTROPENIC SPLENOMEGALY
20892	LEUKEMIA NOS IN RELAPSE	28983	MYELOFIBROSIS
23873	HI GRDE MYELOYDYS SYN LES	40301	HYPERTENSIVE RENAL DISEASE, MALIGNANT W RENAL FAILURE
23876	MYELOFI W MYELO METAPLAS	40311	HYPERTENSIVE RENAL DISEASE, BENIGH W RENAL FAILURE
23877	POST TP LYMPHPROLIF DIS	40391	HYPERTENSIVE RENAL DISEASE, NOS W RENAL FAILURE
23879	LYMPH/HEMATPOITC TIS NEC	40402	HYPERTENSIVE HEART AND RENAL DISEASE MALIGNANT W RENAL FAILURE
260	KWASHIORKOR	40403	HYPERTENSIVE HEART AND RENAL DISEASE MALIGNANT W CONGESTIVE HEART AND RENAL FAILURE
261	NUTRITIONAL MARASMUS	40412	HYPERTENSIVE HEART AND RENAL DISEASE BENIGH W RENAL FAILURE
262	OTHER SEVERE PROTEIN CALORIE MALNUTRITION	40413	HYPERTENSIVE HEART AND RENAL DISEASE BENIGH W CONGESTIVE HEART AND RENAL FAILURE
27900	HYPOGAMMAGLOBULINEMIA NOS	40492	HYPERTENSIVE HEART AND RENAL DISEASE NOS W RENAL FAILURE
27901	SELECTIVE IGA IMMUNODEFICIENCY	40493	HYPERTENSIVE HEART AND RENAL DISEASE NOS W CONGESTIVE HEART AND RENAL FAILURE
27902	SELECTIVE IGM IMMUNODEFICIENCY	5793	OTHER AND UNSPECIFIED POSTSURGICAL NONABSORPTION
27903	OTHER SELECTIVE IMMUNOGLOBULIN DEFICIENCIES	585	CHRONIC KIDNEY DISEASE
27904	CONGENITAL HYPOGAMMAGLOBULINEMIA	5855	CHRONIC KIDNEY DISEASE STAGE V
27905	IMMUNODEFICIENCY WITH INCREASED IGM	5856	END STAGE RENAL DISEASE
27906	COMMON VARIABLE IMMUNODEFICIENCY	9968	COMPLICATIONS OF TRANSPLANTED ORGAN
27909	DEFICIENCY OF HUMORAL IMMUNITY, OTHER	99680	COMP ORGAN TRANSPLNT NOS
27910	IMMUNODEFICIENCY WITH PREDOMINANT T-CELL DEFECT NOS	99681	COMPL KIDNEY TRANSPLANT
27911	DIGEORGES SYNDROME	99682	COMPL LIVER TRANSPLANT
27912	WISKOTT-ALDRICH SYNDROME	99683	COMPL HEART TRANSPLANT
27913	NEZLOFS SYNDROME	99684	COMPL LUNG TRANSPLANT
27919	DEFICIENCY OF CELL-MEDIATED IMMUNITY, OTHER	99685	COMPL MARROW TRANSPLANT
2792	COMBINED IMMUNITY DEFICIENCY	99686	COMPL PANCREAS TRANSPLNT
2793	UNSPECIFIED IMMUNITY DEFICIENCY		
2794	AUTOIMMUNE DISEASE, NOT ELSEWHERE CLASSIFIED		
27941	AUTOIMMUN LYMPHPROF SYND		
27949	AUTOIMMUNE DISEASE NEC		
27950	GRAFT-VERSUS-HOST NOS		
27951	AC GRAFT-VERSUS-HOST DIS		
27952	CHRONC GRAFT-VS-HOST DIS		
27953	AC ON CHRNR GRFT-VS-HOST		
2798	OTHER SPECIFIED DISORDERS INVOLVING THE IMMUNE MECHANISM		

¹ The procedure or diagnosis codes are continuously updated. The current list of ICD-9-CM codes is valid for October 2012 through September 2013. Italicized codes are not active in Fiscal Year 2013.

99687	COMP INTESTINE TRANSPLNT	V4289	OTHER REPLACED BY TRANSPLANT
99688	STEM CELL TRANSPLANT	V451	RENAL DIALYSIS STATUS
	COMPLICATIONS	V4511	RENAL DIALYSIS STATUS
99689	COMP OTH ORGAN TRANSPLNT	V560	EXTRACORPOREAL DIALYSIS
V420	KIDNEY REPLACED BY TRANSPLANT	V561	FITTING AND ADJUSTMENT OF
V421	HEART REPLACED BY TRANSPLANT		EXTRACORPOREAL DIALYSIS
V426	LUNG REPLACED BY TRANSPLANT		CATHETER
V427	LIVER REPLACED BY TRANSPLANT	V562	FITTING AND ADJUSTMENT OF
V428	OTHER SPECIFIED ORGAN OR TISSUE		PERITONEAL DIALYSIS CATHETER
V4281	BONE MARROW SPECIFIED BY	V563	ENCOUNTER FOR ADEQUACY TESTING
	TRANSPLANT		FOR DIALYSIS
V4282	PERIPHERAL STEM CELLS REPLACED	V5631	ENCOUNTER FOR ADEQUACY TESTING
	BY TRANSPLANT		FOR HEMODIALYSIS
V4283	PANCREAS REPLACED BY	V5632	ENCOUNTER FOR ADEQUACY TESTING
	TRANSPLANT		FOR PERITONEAL DIALYSIS
V4284	INTESTINES REPLACE BY TRANSPLANT	V568	OTHER DIALYSIS

¹ The procedure or diagnosis codes are continuously updated. The current list of ICD-9-CM codes is valid for October 2012 through September 2013. Italicized codes are not active in Fiscal Year 2013.

ICD-9-CM High-risk immunocompromised state procedure codes:

335	LUNG TRANSPLANT	4107	AUTO HEM STEM CT W PURG
3350	LUNG TRANSPLANT NOS	4108	ALLO HEM STEM CT W PURG
3351	UNILAT LUNG TRANSPLANT	4109	AUTO BONE MT W PURGING
3352	BILAT LUNG TRANSPLANT	4697	Added 5.0: TRANSPLANT OF INTESTINE
336	COMBINED HEART-LUNG TRANSPLANTATION	5051	AUXILIARY LIVER TRANSPL
375	HEART TRANSPLANTATION	5059	LIVER TRANSPLANT NEC
3751	HEART TRANSPLANTATION	5280	PANCREATIC TRANSPLANT, NOS
410	OPERATIONS ON BONE MARROW AND SPLEEN	5281	REIMPLANTATION OF PANCREATIC TISSUE
4100	BONE MARROW TRNSPLNT NOS	5282	REIMPLANTATION OF PANCREATIC TISSUE
4101	AUTO BONE MT W/O PURG	5283	HETEROTRANSPLANT OF PANCREAS
4102	ALO BONE MARROW TRNSPLNT	5285	ALLOTRANSPLANTATION OF CELLS OF ISLETS OF LINGERHANS
4103	ALLOGRFT BONE MARROW NOS	5286	TRANSPLANTATION OF CELLS OF ISLETS OF LANGERHANS, NOS
4104	AUTO HEM STEM CT W/O PUR	5569	OTHER KIDNEY TRANSPLANTATION
4105	ALLO HEM STEM CT W/O PUR		
4106	CORD BLD STEM CELL TRANS		

¹ The procedure or diagnosis codes are continuously updated. The current list of ICD-9-CM codes is valid for October 2012 through September 2013. Italicized codes are not active in Fiscal Year 2013.

Appendix G – Intermediate-Risk Immunocompromised State Diagnosis Codes

ICD-9-CM Intermediate-risk immunocompromised state diagnosis codes:

07022	VIRAL HEPATITIS B W HEPATIC COMA, CHRONIC WO MENTION OF HEPATITIS DELTA	58181	NEPHROTIC SYNDROME IN DISEASE CLASSIFIED ELSEWHERE
07023	VIRAL HEPATITIS B W HEPATIC COMA, CHRONIC W HEPATITIS DELTA	58189	WITH OTHER SPECIFIED PATHOLOGICAL LESION IN KIDNEY, OTHER
07044	CHRONIC HEPATITIS C WITH HEPATIC COMA	5819	NEPHROTIC SYNDROME WITH UNSPECIFIED PATHOLOGICAL LESION IN KIDNEY
2894	HYPERSPLENISM	582	CHRONIC GLOMERULONEPHRITIS
28950	DISEASE OF SPLEEN NOS	5820	WITH LESION OF PROLIFERATIVE GLOMERULONEPHRITIS
28951	CHRONIC DIGESTIVE SPLENOMEGALY	5821	WITH LESION OF MEMBRANOUS GLOMERULONEPHRITIS
28952	SPLENIC SEQUESTRATION	5822	WITH LESION OF MEMBRANOPROLIFERATIVE GLOMERULONEPHRITIS
28959	OTHER DISEASE OF SPLEEN, OTHER	5824	WITH LESION OF RAPIDLY PROGRESSIVE GLOMERULONEPHRITIS
4560	ESOPHAGEAL VARICES W BLEEDING	5828	WITH OTHER SPECIFIED PATHOLOGICAL LESION IN KIDNEY
4561	ESOPHAGEAL VARICES WO MENTION OF BLEEDING	58281	CHRONIC GLOMERULONEPHRITIS IN DISEASES CLASSIFIED ELSEWHERE
45620	ESOPHAGEAL VARICES IN DISEASE CLASSIFIED ELSEWHERE, W BLEEDING	58289	WITH OTHER SPECIFIED PATHOLOGICAL LESION IN KIDNEY, OTHER
45621	ESOPHAGEAL VARICES IN DISEASE CLASSIFIED ELSEWHERE, WO MENTION OF BLEEDING	5829	CHRONIC GLOMERULONEPHRITIS WITH UNSPECIFIED PATHOLOGICAL LESION IN KIDNEY
5723	PORTAL HYPERTENSION	583	NEPHRITIS AND NEPHROPATHY, NOT SPECIFIED AS ACUTE OR CHRONIC
5728	OTHER SEQUELAE OF CHRONIC LIVER DISEASE	5830	WITH LESION OF PROLIFERATIVE GLOMERULONEPHRITIS
5735	HEPATOPULMONARY SYNDROME	5831	WITH LESION OF MEMBRANOUS GLOMERULONEPHRITIS
580	ACUTE GLOMERULONEPHRITIS	5832	WITH LESION OF MEMBRANOPROLIFERATIVE GLOMERULONEPHRITIS
5800	WITH LESION OF PROLIFERATIVE GLOMERULONEPHRITIS	5834	WITH LESION OF RAPIDLY PROGRESSIVE GLOMERULONEPHRITIS
5804	WITH LESION OF RAPIDLY PROGRESSIVE GLOMERULONEPHRITIS	5836	WITH LESION OF RENAL CORTICAL NECROSIS
5808	WITH OTHER SPECIFIED PATHOLOGICAL LESION IN KIDNEY	5837	WITH LESION OF RENAL MEDULLARY NECROSIS
58081	ACUTE GLOMERULONEPHRITIS IN DISEASES CLASSIFIED ELSEWHERE	5838	WITH OTHER SPECIFIED PATHOLOGICAL LESION IN KIDNEY
58089	WITH OTHER SPECIFIED PATHOLOGICAL LESION IN KIDNEY, OTHER	58381	NEPHRITIS AND NEPHROPATHY, NOT SPECIFIED AS ACUTE OR CHRONIC, IN DISEASE CLASSIFIED ELSEWHERE
5809	ACUTE GLOMERULONEPHRITIS WITH UNSPECIFIED PATHOLOGICAL LESION IN KIDNEY	58389	WITH OTHER SPECIFIED PATHOLOGICAL LESION IN KIDNEY, OTHER
581	NEPHROTIC SYNDROME		
5810	WITH LESION OF PROLIFERATIVE GLOMERULONEPHRITIS		
5811	WITH LESION OF MEMBRANOUS GLOMERULONEPHRITIS		
5812	WITH LESION OF MEMBRANOPROLIFERATIVE GLOMERULONEPHRITIS		
5813	WITH LESION OF MINIMAL CHANGE GLOMERULONEPHRITIS		
5818	WITH OTHER SPECIFIED PATHOLOGICAL LESION IN KIDNEY		

¹ The procedure or diagnosis codes are continuously updated. The current list of ICD-9-CM codes is valid for October 2012 through September 2013. Italicized codes are not active in Fiscal Year 2013.

5839	WITH UNSPECIFIED PATHOLOGICAL LESION IN KIDNEY		OPEN WOUND INTO CAVITY LACERATION EXTENDING INTO PARENCHYMA
7100	SYSTEMIC LUPUS ERYTHEMATOSUS		
7101	SYSTEMIC SCLEROSIS	86504	INJURY TO SPLEEN,WO MENTION OF OPEN WOUND INTO CAVITY MASSIVE PARENCHYMAL DISRUPTION
7102	SICCA SYNDROME		
7103	DERMATOMYOSITIS		
7104	POLYMYOSITIS	86509	INJURY TO SPLEEN,WO MENTION OF OPEN WOUND INTO CAVITY OTHER
7105	EOSINOPHILIA MYALGIA SYNDROME		
7108	OTHER SPECIFIED DIFFUSE DISEASE OF CONNECTIVE TISSUE	86510	INJURY TO SPLEEN,W OPEN WOUND INTO CAVITY NOS INJURY
7109	UNSPECIFIED DIFFUSE CONNECTIVE TISSUE DISEASE	86511	INJURY TO SPLEEN,W OPEN WOUND INTO CAVITY HEMATOMA WO RUPTURE OF CAPSULE
7590	ANOMALIES OF SPLEEN		
7994	CACHEXIA	86512	INJURY TO SPLEEN,W OPEN WOUND INTO CAVITY CAPSULAR TEARS WO MAJOR DISRUPTION OF PARENCHYMA
86500	INJURY TO SPLEEN,WO MENTION OF OPEN WOUND INTO CAVITY NOS INJURY	86513	INJURY TO SPLEEN,W OPEN WOUND INTO CAVITY LACERATION EXTENDING INTO PARENCHYMA
86501	INJURY TO SPLEEN,WO MENTION OF OPEN WOUND INTO CAVITY HEMATOMA WO RUPTURE OF CAPSULE	86514	INJURY TO SPLEEN,W OPEN WOUND INTO CAVITY MASSIVE PARENCHYMAL DISRUPTION
86502	INJURY TO SPLEEN,WO MENTION OF OPEN WOUND INTO CAVITY CAPSULE TEARS WO MAJOR DISRUPTION OF PARENCHYMA	86519	INJURY TO SPLEEN,W OPEN WOUND INTO CAVITY OTHER
86503	INJURY TO SPLEEN,WO MENTION OF	V427	ORGAN OR TISSUE REPLACED BY TRANSPLANT, LIVER

¹ The procedure or diagnosis codes are continuously updated. The current list of ICD-9-CM codes is valid for October 2012 through September 2013. Italicized codes are not active in Fiscal Year 2013.

ICD-9-CM Hepatic failure diagnosis codes:

5712	ALCOHOLIC CIRRHOSIS OF LIVER	5722	HEPATIC COMA
5715	CIRRHOSIS OF LIVER WITHOUT MENTION OF ALCOHOL	5724	HEPATORENAL SYNDROME
5716	BILIARY CIRRHOSIS		

¹ The procedure or diagnosis codes are continuously updated. The current list of ICD-9-CM codes is valid for October 2012 through September 2013. Italicized codes are not active in Fiscal Year 2013.

Appendix H – Infection Diagnosis Codes

ICD-9-CM Infection diagnosis codes:

0010	CHOLERA D/T VIB CHOLERA	5672	SUPPURAT PERITONITIS NEC
0011	CHOLERA D/T VIB EL TOR	56721	PERITONITIS (ACUTE) GEN
0019	CHOLERA NOS	56722	PERITONEAL ABSCESS
0020	TYPHOID FEVER	56723	SPONTAN BACT PERITONITIS
0021	PARATYPHOID FEVER A	56729	SUPPURAT PERITONITIS NEC
0022	PARATYPHOID FEVER B	56731	PSOAS MUSCLE ABSCESS
0023	PARATYPHOID FEVER C	56738	RETROPERITON ABSCESS NEC
0029	PARATYPHOID FEVER NOS	56739	RETROPERITON INFECT NEC
0030	SALMONELLA ENTERITIS	56781	CHOLEPERITONITIS
0031	SALMONELLA SEPTICEMIA	56782	SCLEROSING MESENTERITIS
00320	LOCAL SALMONELLA INF NOS	56789	PERITONITIS NEC
00321	SALMONELLA MENINGITIS	5679	PERITONITIS NOS
00322	SALMONELLA PNEUMONIA	5695	INTESTINAL ABSCESS
00323	SALMONELLA ARTHRITIS	56961	COLOSTY/ENTEROST INFECTN
00324	SALMONELLA OSTEOMYELITIS	5720	ABSCESS OF LIVER
00329	LOCAL SALMONELLA INF NEC	5721	PORTAL PYEMIA
0038	SALMONELLA INFECTION NEC	57400	CHOLELITH W AC CHOLECYST
0039	SALMONELLA INFECTION NOS	57401	CHOLELITH/AC GB INF-OBST
0040	SHIGELLA DYSENTERIAE	57430	CHOLEDOCHOLITH/AC GB INF
0041	SHIGELLA FLEXNERI	57431	CHOLEDOCHLITH/AC GB-OBST
0042	SHIGELLA BOYDII	57460	GALL&BIL CAL W/AC W/O OB
0043	SHIGELLA SONNEI	57461	GALL&BIL CAL W/AC W OBS
0048	SHIGELLA INFECTION NEC	57480	GAL&BIL CAL W/AC&CHR W/O
0049	SHIGELLOSIS NOS	57481	GAL&BIL CAL W/AC&CH W OB
0050	STAPH FOOD POISONING	5750	ACUTE CHOLECYSTITIS
0051	BOTULISM	57510	CHOLECYSTITIS UNSPEC
0052	FOOD POIS D/T C. PERFRIN	57512	AC&CHRON CHOLECYSTITIS
0053	FOOD POIS: CLOSTRID NEC	5754	PERFORATION GALLBLADDER
0054	FOOD POIS: V. PARAHAE	5761	CHOLANGITIS
00581	FOOD POISN D/T V. VULNIF	5763	PERFORATION OF BILE DUCT
00589	BACT FOOD POISONING NEC	5770	ACUTE PANCREATITIS
0059	FOOD POISONING NOS	59010	AC PYELONEPHRITIS NOS
00800	INTEST INFEC E COLI NOS	59011	AC PYELONEPHR W MED NECR
00801	INT INF E COLI ENTRPATH	5902	RENAL/PERIRENAL ABSCESS
00802	INT INF E COLI ENTRTOXGN	5903	PYELOURETERITIS CYSTICA
00803	INT INF E COLI ENTRNVSV	59080	PYELONEPHRITIS NOS
00804	INT INF E COLI ENTRHMRG	59081	PYELONEPHRIT IN OTH DIS
00809	INT INF E COLI SPCF NEC	5909	INFECTION OF KIDNEY NOS
0081	ARIZONA ENTERITIS	5950	ACUTE CYSTITIS
0082	AEROBACTER ENTERITIS	5954	CYSTITIS IN OTH DIS
0083	PROTEUS ENTERITIS	59581	CYSTITIS CYSTICA
00841	STAPHYLOCOCC ENTERITIS	59589	CYSTITIS NEC
00842	PSEUDOMONAS ENTERITIS	5959	CYSTITIS NOS
00843	INT INFEC CAMPYLOBACTER	5970	URETHRAL ABSCESS
00844	INT INF YRSNIA ENTRCLTCA	5990	URIN TRACT INFECTION NOS
00845	INT INF CLSTRDIUM DFCILE	6010	ACUTE PROSTATITIS
00846	INTES INFEC OTH ANEROBES	6012	ABSCESS OF PROSTATE
00847	INT INF OTH GRM NEG BCTR	6013	PROSTATOCYSTITIS
00849	BACTERIAL ENTERITIS NEC	6014	PROSTATITIS IN OTH DIS
0085	BACTERIAL ENTERITIS NOS	6018	PROSTATITIS
0200	BUBONIC PLAGUE	6019	PROSTATITIS NOS
0201	CELLULOCUTANEOUS PLAGUE	6031	INFECTED HYDROCELE

¹ The procedure or diagnosis codes are continuously updated. The current list of ICD-9-CM codes is valid for October 2012 through September 2013. Italicized codes are not active in Fiscal Year 2013.

0202	SEPTICEMIC PLAGUE	6040	ORCHITIS WITH ABSCESS
0203	PRIMARY PNEUMONIC PLAGUE	60490	ORCHITIS/EPIDIDYMIT NOS
0204	SECONDARY PNEUMON PLAGUE	60491	ORCHITIS IN OTH DISEASE
0205	PNEUMONIC PLAGUE NOS	6071	BALANOPOSTHITIS
0208	OTHER TYPES OF PLAGUE	6072	INFLAM DIS, PENIS NEC
0209	PLAGUE NOS	6080	SEMINAL VESICULITIS
0210	ULCEROGLANDUL TULAREMIA	6084	MALE GEN INFLAM DIS NEC
0211	ENTERIC TULAREMIA	6110	INFLAM DISEASE OF BREAST
0212	PULMONARY TULAREMIA	6140	AC SALPINGO-OOPHORITIS
0213	OCULOGLANDULAR TULAREMIA	6141	CHRON SALPINGITIS OOPHORITIS
0218	TULAREMIA NEC	6142	SALPINGO-OOPHORITIS NOS
0219	TULAREMIA NOS	6143	ACUTE PARAMETRITIS
0220	CUTANEOUS ANTHRAX	6144	CHRON OR UNSP CELLULITIS
0221	PULMONARY ANTHRAX	6145	AC PELV PERITONITIS-FEM
0222	GASTROINTESTINAL ANTHRAX	6149	PID NOS
0223	ANTHRAX SEPTICEMIA	6150	AC UTERINE INFLAMMATION
0228	OTHER ANTHRAX MANIFEST	6159	UTERINE INFLAM DIS NOS
0229	ANTHRAX NOS	6160	CERVICITIS
0230	BRUCELLA MELITENSIS	61610	VAGINITIS NOS
0231	BRUCELLA ABORTUS	6163	BARTHOLINS GLND ABSCESS
0232	BRUCELLA SUIS	6164	ABSCESS OF VULVA NEC
0233	BRUCELLA CANIS	63400	SPON ABOR W PELV INF-UNSP
0238	BRUCELLOSIS NEC	63401	SPON ABOR W PELV INF-INC
0239	BRUCELLOSIS NOS	63402	SPON ABOR W PELV INF-COMP
024	GLANDERS	63500	LEG ABOR W PELV INF-UNSP
025	MELIOIDOSIS	63501	LEG ABOR W PELV INF-INC
0260	SPIRILLARY FEVER	63502	LEG ABOR W PELV INF-COMP
0261	STREPTOBACILLARY FEVER	63600	ILLEG AB W PELV INF-UNSP
0269	RAT-BITE FEVER NOS	63601	ILLEG AB W PELV INF-INC
0270	LISTERIOSIS	63602	ILLEG AB W PELV INF-COMP
0271	ERYSIPELOTHRIX INFECTION	63700	ABORT NOS W PELV INF-UNSP
0272	PASTEURELLOSIS	63701	ABORT NOS W PELV INF-INC
0278	ZOONOTIC BACT DIS NEC	63702	ABORT NOS W PELV INF-COMP
0279	ZOONOTIC BACT DIS NOS	6380	ATTEM ABORT W PELVIC INF
0320	FAUCIAL DIPHTHERIA	6390	POSTABORTION GU INFECT
0321	NASOPHARYNX DIPHTHERIA	64650	BACTERIURIA PREG-UNSPEC
0322	ANT NASAL DIPHTHERIA	64651	ASYM BACTERIURIA-DELIVER
0323	LARYNGEAL DIPHTHERIA	64652	ASY BACTERIURIA-DEL W P/P
03281	CONJUNCTIVAL DIPHTHERIA	64653	ASY BACTERIURIA-ANTEPART
03282	DIPHTHERITIC MYOCARDITIS	64654	ASY BACTERIURIA-POSTPART
03283	DIPHTHERITIC PERITONITIS	64660	GU INFECT IN PREG-UNSPEC
03284	DIPHTHERITIC CYSTITIS	64661	GU INFECTION-DELIVERED
03285	CUTANEOUS DIPHTHERIA	64662	GU INFECTION-DELIV W P/P
03289	DIPHTHERIA NEC	64663	GU INFECTION-ANTEPARTUM
0329	DIPHTHERIA NOS	64664	GU INFECTION-POSTPARTUM
0330	BORDETELLA PERTUSSIS	64710	GONORRHEA IN PREG-UNSPEC
0331	BORDETELLA PARAPERTUSSIS	64711	GONORRHEA-DELIVERED
0338	WHOOPING COUGH NEC	64712	GONORRHEA-DELIVER W P/P
0339	WHOOPING COUGH NOS	64713	GONORRHEA-ANTEPARTUM
0340	STREP SORE THROAT	64714	GONORRHEA-POSTPARTUM
0341	SCARLET FEVER	64780	INF DIS IN PREG NEC-UNSP
035	ERYSIPELAS	64781	INFECT DIS NEC-DELIVERED
0360	MENINGOCOCCAL MENINGITIS	64782	INFECT DIS NEC-DEL W P/P
0361	MENINGOCOCC ENCEPHALITIS	64783	INFECT DIS NEC-ANTEPART
0362	MENINGOCOCC EMIA	64784	INFECT DIS NEC-POSTPART
0363	MENINGOCOCC ADRENAL SYND	64790	INFECT IN PREG NOS-UNSP
03640	MENINGOCOCC CARDITIS NOS	64791	INFECT NOS-DELIVERED
03641	MENINGOCOCC PERICARDITIS	64792	INFECT NOS-DELIVER W P/P
03642	MENINGOCOCC ENDOCARDITIS	64793	INFECT NOS-ANTEPARTUM
03643	MENINGOCOCC MYOCARDITIS	64794	INFECT NOS-POSTPARTUM
03681	MENINGOCOCC OPTIC NEURIT	65840	AMNIOTIC INFECTION-UNSP
03682	MENINGOCOCC ARTHROPATHY	65841	AMNIOTIC INFECTION-DELIV

03689	MENINGOCOCCAL INFECT NEC	65843	AMNIOTIC INFECT-ANTEPART
0369	MENINGOCOCCAL INFECT NOS	67000	MAJ PUERP INF NOS-UNSP
037	TETANUS	67002	MAJ PUERP INF NOS-DEL P/P
0380	STREPTOCOCCAL SEPTICEMIA	67004	MAJOR PUERP INF NOS-P/P
03810	STAPHYLOCOCC SEPTICEM NOS	67010	PUERP ENDOMETRITIS-UNSP
03811	METH SUSC STAPH AUR SEPT	67012	PUERP ENDOMET DEL W P/P
03812	MRSA SEPTICEMIA	67014	PUERP ENDOMET-POSTPART
03819	STAPHYLOCOCC SEPTICEM NEC	67020	PUERPERAL SEPSIS-UNSP
0382	PNEUMOCOCCAL SEPTICEMIA	67022	PUERPRL SEPSIS-DEL W P/P
0383	ANAEROBIC SEPTICEMIA	67024	PUERPRL SEPSIS-POSTPART
03840	GRAM-NEG SEPTICEMIA NOS	67030	PUERP SEPTC THROMB-UNSP
03841	H. INFLUENAE SEPTICEMIA	67032	PRP SPTC THRMB-DEL W P/P
03842	E COLI SEPTICEMIA	67034	PRP SEPTC THRMB-POSTPART
03843	PSEUDOMONAS SEPTICEMIA	67080	MAJ PRP INFEC NEC-UNSPEC
03844	SERRATIA SEPTICEMIA	67082	MAJ PRP INF NEC-DL W P/P
03849	GRAM-NEG SEPTICEMIA NEC	67084	MAJ PUERP INFEC NEC-P/P
0388	SEPTICEMIA NEC	67500	INFECT NIPPLE PREG-UNSP
0389	SEPTICEMIA NOS	67501	INFECT NIPPLE-DELIVERED
0390	CUTANEOUS ACTINOMYCOSIS	67502	INFECT NIPPLE-DEL W P/P
0391	PULMONARY ACTINOMYCOSIS	67503	INFECT NIPPLE-ANTEPARTUM
0392	ABDOMINAL ACTINOMYCOSIS	67504	INFECT NIPPLE-POSTPARTUM
0393	CERVICOFAC ACTINOMYCOSIS	67510	BREAST ABSCESS PREG-UNSP
0394	MADURA FOOT	67511	BREAST ABSCESS-DELIVERED
0398	ACTINOMYCOSIS NEC	67512	BREAST ABSCESS-DEL W P/P
0399	ACTINOMYCOSIS NOS	67513	BREAST ABSCESS-ANTEPART
0400	GAS GANGRENE	67514	BREAST ABSCESS-POSTPART
0401	RHINOSCLEROMA	67580	BREAST INF PREG NEC-UNSP
0402	WHIPPLES DISEASE	67581	BREAST INFECT NEC-DELIV
0403	NECROBACILLOSIS	67582	BREAST INF NEC-DEL W P/P
04041	INFANT BOTULISM	67583	BREAST INF NEC-ANTEPART
04042	WOUND BOTULISM	67584	BREAST INF NEC-POSTPART
04081	TROPICAL PYOMYOSITIS	67590	BREAST INF PREG NOS-UNSP
04082	TOXIC SHOCK SYNDROME	67591	BREAST INFECT NOS-DELIV
04089	BACTERIAL DISEASES NEC	67592	BREAST INF NOS-DEL W P/P
04100	STREPTOCOCCUS UNSPEC	67593	BREAST INF NOS-ANTEPART
04101	STREPTOCOCCUS GROUP A	67594	BREAST INF NOS-POSTPART
04102	STREPTOCOCCUS GROUP B	6800	CARBUNCLE OF FACE
04103	STREPTOCOCCUS GROUP C	6801	CARBUNCLE OF NECK
04104	ENTEROCOCCUS GROUP D	6802	CARBUNCLE OF TRUNK
04105	STREPTOCOCCUS GROUP G	6803	CARBUNCLE OF ARM
04109	OTHER STREPTOCOCCUS	6804	CARBUNCLE OF HAND
04110	STAPHYLOCOCCUS UNSPECIFIED	6805	CARBUNCLE OF BUTTOCK
04111	MTH SUS STPH AUR ELS/NOS	6806	CARBUNCLE OF LEG
04112	MRSA ELSEWHERE/NOS	6807	CARBUNCLE OF FOOT
04119	OTHER STAPHYLOCOCCUS	6808	CARBUNCLE, SITE NEC
0412	PNEUMOCOCCUS INFECT NOS	6809	CARBUNCLE NOS
0413	KLEBSIELLA INFECT NOS	68100	CELLULITIS, FINGER NOS
0414	E. COLI INFECT NOS	68101	FELON
04141	SHIGA TOXIN-PRODUCING ESCHERICHIA COLI [E.COLI](STEC)O157	68102	ONYCHIA OF FINGER
04142	OTHER SPECIFIED SHIGA TOXIN- PRODUCING ESCHERICHIA COLI [E.COLI] (STEC)	68110	CELLULITIS, TOE NOS
04143	SHIGA TOXIN-PRODUCING ESCHERICHIA COLI [E.COLI] (STEC),UNSPECIFIED	68111	ONYCHIA OF TOE
04149	OTHER AND UNSPECIFIED ESCHERICHIA COLI [E.COLI]	6819	CELLULITIS OF DIGIT NOS
0415	H. INFLUENZAE INFECT NOS	6820	CELLULITIS OF FACE
0416	PROTEUS INFECTION NOS	6821	CELLULITIS OF NECK
0417	PSEUDOMONAS INFECT NOS	6822	CELLULITIS OF TRUNK
04182	BACTEROIDES FRAGILIS	6823	CELLULITIS OF ARM

04183	CLOSTRIDIUM PERFRINGENS	6824	CELLULITIS OF HAND
04184	OTHER ANAEROBES	6825	CELLULITIS OF BUTTOCK
04185	OTH GRAM NEGATV BACTERIA	6826	CELLULITIS OF LEG
04186	HELICOBACTER PYLORI	6827	CELLULITIS OF FOOT
04189	OTH SPECF BACTERIA	6828	CELLULITIS, SITE NEC
0419	BACTERIAL INFECTION NOS	6829	CRLLULITIS, SITE NOS
0783	CAT-SCRATCH DISEASE	683	ACUTE LYMPHADENITIS
0980	ACUTE GC INFECT LOWER GU	684	IMPETIGO
09810	GC (ACUTE) UPPER GU NOS	68600	PYODERMA NOS
09811	GC CYSTITIS (ACUTE)	68609	PYODERMA OTHER
09812	GC PROSTATITIS (ACUTE)	6868	LOCAL SKIN INFECTION NEC
09813	GC ORCHITIS (ACUTE)	6869	LOCAL SKIN INFECTION NOS
09814	GC SEM VESICULIT (ACUTE)	69581	RITTERS DISEASE
09815	GC CERVICITIS (ACUTE)	70700	DECUBITUS ULCER SITE NOS (Begin 2004)
09816	GC ENDOMETRITIS (ACUTE)	70701	DECUBITUS ULCERELBOW (Begin 2004)
09817	ACUTE GC SALPINGITIS	70702	DECUBITUS ULCERUP BACK (Begin 2004)
09819	GC (ACUTE) UPPER GU NEC	70703	DECUBITUS ULCERLOW BACK (Begin 2004)
0982	CHR GC INFECT LOWER GU	70704	DECUBITUS ULCERHIP (Begin 2004)
09830	CHR GC UPPER GU NOS	70705	DECUBITUS ULCERBUTTOCK (Begin 2004)
09831	GC CYSTITIS, CHRONIC	70706	DECUBITUS ULCERANKLE (Begin 2004)
09832	GC PROSTATITIS, CHRONIC	70707	DECUBITUS ULCERHEEL (Begin 2004)
09833	GC ORCHITIS, CHRONIC	70709	DECUBITUS ULCERSITE NEC (Begin 2004)
09834	GC SEM VESICULITIS, CHR	70720	PRESSURE ULCER,STAGE NOS
09835	GC CERVICITIS, CHRONIC	70722	PRESSURE ULCER, STAGE II
09836	GC ENDOMETRITIS, CHRONIC	70723	PRESSURE ULCER,STAGE III
09837	GC SALPINGITIS (CHRONIC)	70724	PRESSURE ULCER, STAGE IV
09839	CHR GC UPPER GU NEC	71100	PYOGEN ARTHRITIS-UNSPEC
09840	GONOCOCCAL CONJUNCTIVIT	71101	PYOGEN ARTHRITIS-SHLDER
09841	GONOCOCCAL IRIDOCYCLITIS	71102	PYOGEN ARTHRITIS-UP/ARM
09842	GONOCOCCAL ENDOPHTHALMIA	71103	PYOGEN ARTHRITIS-FOREARM
09843	GONOCOCCAL KERATITIS	71104	PYOGEN ARTHRITIS-HAND
09849	GONOCOCCAL EYE NEC	71105	PYOGEN ARTHRITIS-PELVIS
09850	GONOCOCCAL ARTHRITIS	71106	PYOGEN ARTHRITIS-L/LEG
09851	GONOCOCCAL SYNOVITIS	71107	PYOGEN ARTHRITIS-ANKLE
09852	GONOCOCCAL BURSITIS	71108	PYOGEN ARTHRITIS NEC
09853	GONOCOCCAL SPONDYLITIS	71109	PYOGEN ARTHRITIS-MULT
09859	GC INFECT JOINT NEC	71190	INF ARTHRITIS NOS-UNSPEC
0986	GONOCOCCAL INFEC PHARYNX	71191	INF ARTHRITIS NOS-SHLDER
0987	GC INFECT ANUS & RECTUM	71192	INF ARTHRITIS NOS-UP/ARM
09881	GONOCOCCAL KERATOSIS	71193	INF ARTHRIT NOS-FOREARM
09882	GONOCOCCAL MENINGITIS	71194	INF ARTHRIT NOS-HAND
09883	GONOCOCCAL PERICARDITIS	71195	INF ARTHRIT NOS-PELVIS
09884	GONOCOCCAL ENDOCARDITIS	71196	INF ARTHRIT NOS-L/LEG
09885	GONOCOCCAL HEART DIS NEC	71197	INF ARTHRIT NOS-ANKLE
09886	GONOCOCCAL PERITONITIS	71198	INF ARTHRIT NOS-OTH SITE
09889	GONOCOCCAL INF SITE NEC	71199	INF ARTHRITIS NOS-MULT
3200	HEMOPHILUS MENINGITIS	7280	INFECTIVE MYOSITIS
3201	PNEUMOCOCCAL MENINGITIS	72886	NECROTIZING FASCIITIS
3202	STREPTOCOCCAL MENINGITIS	73000	AC OSTEOMYELITIS-UNSPEC
3203	STAPHYLOCOCC MENINGITIS	73001	AC OSTEOMYELITIS-SHLDER
3207	MENING IN OTH BACT DIS	73002	AC OSTEOMYELITIS-UP/ARM
32081	ANAEROBIC MENINGITIS	73003	AC OSTEOMYELITIS-FOREARM
32082	MNINGTS GRAM-NEG BCT NEC	73004	AC OSTEOMYELITIS-HAND
32089	MENINGITIS OTH SPCF BACT	73005	AC OSTEOMYELITIS-PELVIS
3209	BACTERIAL MENINGITIS NOS	73006	AC OSTEOMYELITIS-L/LEG
3229	MENINGITIS NOS	73007	AC OSTEOMYELITIS-ANKLE
3240	INTRACRANIAL ABSCESS	73008	AC OSTEOMYELITIS NEC

3241	INTRASPINAL ABSCESS	73009	AC OSTEOMYELITIS-MULT
3249	CNS ABSCESS NOS	73010	CHR OSTEOMYELITIS-UNSP
36000	PURULENT ENDOPHTHALM NOS	73011	CHR OSTEOMYELIT-SHLDER
36001	ACUTE ENDOPHTHALMITIS	73012	CHR OSTEOMYELIT-UP/ARM
36002	PANOPHTHALMITIS	73013	CHR OSTEOMYELIT-FOREARM
36004	VITREOUS ABSCESS	73014	CHR OSTEOMYELIT-HAND
37055	CORNEAL ABSCESS	73015	CHR OSTEOMYELIT-PELVIS
37200	ACUTE CONJUNCTIVITIS NOS	73016	CHR OSTEOMYELIT-L/LEG
37203	MUCOPUR CONJUNCTIVIT NEC	73017	CHR OSTEOMYELIT-ANKLE
37204	PSEUDOMEMB CONJUNCTIVIT	73018	CHR OSTEOMYELIT NEC
37220	BLEPHAROCONJUNCTIVIT NOS	73019	CHR OSTEOMYELIT-MULT
37221	ANGULAR BLEPHAROCONJUNCT	73020	OSTEOMYELITIS NOS-UNSPEC
37230	CONJUNCTIVITIS NOS	73021	OSTEOMYELITIS NOS-SHLDER
37300	BLEPHARITIS NOS	73022	OSTEOMYELITIS NOS-UP/ARM
37301	ULCERATIVE BLEPHARITIS	73023	OSTEOMYELIT NOS-FOREARM
37311	HORDEOLUM EXTERNUM	73024	OSTEOMYELITIS NOS-HAND
37312	HORDEOLUM INTERNUM	73025	OSTEOMYELITIS NOS-PELVIS
37313	ABSCESS OF EYELID	73026	OSTEOMYELITIS NOS-L/LEG
37500	DACRYOADENITIS NOS	73027	OSTEOMYELITIS NOS-ANKLE
37501	ACUTE DACRYOADENITIS	73028	OSTEOMYELIT NOS-OTH SITE
37530	DACRYOCYSTITIS NOS	73029	OSTEOMYELITIS NOS-MULT
37531	ACUTE CANALICULITIS	73030	PERIOSTITIS-UNSPEC
37532	ACUTE DACRYOCYSTITIS	73031	PERIOSTITIS-SHLDER
37601	ORBITAL CELLULITIS	73032	PERIOSTITIS-UP/ARM
37602	ORBITAL PERIOSTITIS	73033	PERIOSTITIS-FOREARM
37603	ORBITAL OSTEOMYELITIS	73034	PERIOSTITIS-HAND
37604	TENONITIS	73035	PERIOSTITIS-PELVIS
38010	INFEC OTITIS EXTERNA NOS	73036	PERIOSTITIS-L/LEG
38011	ACUTE INFECTION OF PINNA	73037	PERIOSTITIS-ANKLE
38012	ACUTE SWIMMERS EAR	73038	PERIOSTITIS NEC
38013	AC INFECT EXTERN EAR NEC	73039	PERIOSTITIS-MULT
38014	MALIGNANT OTITIS EXTERNA	73080	BONE INFECT NEC-UNSPEC
38150	EUSTACHIAN SALPING NOS	73081	BONE INFECT NEC-SHLDER
38151	AC EUSTACHIAN SALPING	73082	BONE INFECT NEC-UP/ARM
38200	AC SUPP OTITIS MEDIA NOS	73083	BONE INFECT NEC-FOREARM
38201	AC SUPP OM W DRUM RUPT	73084	BONE INFECT NEC-HAND
38202	AC SUPP OM IN OTH DIS	73085	BONE INFECT NEC-PELVIS
3821	CHR TUBOTYMP SUPP OTITIS MEDIA	73086	BONE INFECT NEC-L/LEG
3822	CHR ATTICOANTRAL SUPP OTITIS MEDIA	73087	BONE INFECT NEC-ANKLE
3823	CHR SUPP OTITIS MEDIA NOS	73088	BONE INFECT NEC-OTH SITE
3824	SUPPUR OTITIS MEDIA NOS	73089	BONE INFECT NEC-MULT
3829	OTITIS MEDIA NOS	73090	BONE INFEC NOS-UNSP SITE
38300	AC MASTOIDITIS W/O COMPL	73091	BONE INFECT NOS-SHLDER
38301	SUBPERI MASTOID ABSCESS	73092	BONE INFECT NOS-UP/ARM
38302	AC MASTOIDITIS-COMPL NEC	73093	BONE INFECT NOS-FOREARM
38320	PETROSITIS NOS	73094	BONE INFECT NOS-HAND
38321	ACUTE PETROSITIS	73095	BONE INFECT NOS-PELVIS
38400	ACUTE MYRINGITIS NOS	73096	BONE INFECT NOS-L/LEG
38633	SUPPURATIV LABYRINTHITIS	73097	BONE INFECT NOS-ANKLE
4200	AC PERICARDIT IN OTH DIS	73098	BONE INFECT NOS-OTH SITE
42090	ACUTE PERICARDITIS NOS	73099	BONE INFECT NOS-MULT
42099	ACUTE PERICARDITIS NEC	7713	TETANUS NEONATORUM
4210	AC/SUBAC BACT ENDOCARD	7714	OMPHALITIS OF NEWBORN
4211	AC/SUBAC INFECT ENDOCARD	7715	NEONATAL INFEC MASTITIS
4219	AC/SUBAC ENDOCARDIT NOS	77181	NB SEPTICEMIA SEPSIS
42292	SEPTIC MYOCARDITIS	77182	NB URINARY TRACT INFECTN
4610	AC MAXILLARY SINUSITIS	77183	BACTEREMIA OF NEWBORN
4611	AC FRONTAL SINUSITIS	77189	PERINATAL INFECTION NEC
4612	AC ETHMOIDAL SINUSITIS	7775	NECROT ENTEROCOLITIS NB
4613	AC SPHENOIDAL SINUSITIS	77750	NEC ENTEROCOLITIS NB NOS
4618	OTHER ACUTE SINUSITIS	77751	STG I NEC ENTEROCOL NB

4619	ACUTE SINUSITIS NOS	77752	STG II NEC ENTEROCOL NB
462	ACUTE PHARYNGITIS	77753	STG III NEC ENTEROCOL NB
463	ACUTE TONSILLITIS	7854	GANGRENE
46430	AC EPIGLOTTITIS NO OBSTR	78552	SEPTIC SHOCK
46431	AC EPIGLOTTITIS W OBSTR	7907	BACTEREMIA
4660	ACUTE BRONCHITIS	9101	ABRASION HEAD-INFECTED
475	PERITONSILLAR ABSCESS	9103	BLISTER HEAD-INFECTED
47822	PARAPHARYNGEAL ABSCESS	9105	INSECT BITE HEAD-INFECT
47824	RETROPHARYNGEAL ABSCESS	9107	FOREIGN BODY HEAD-INFECT
481	PNEUMOCOCCAL PNEUMONIA	9109	SUPERF INJ HEAD NEC-INF
4820	K. PNEUMONIAE PNEUMONIA	9111	ABRASION TRUNK-INFECTED
4821	PSEUDOMONAL PNEUMONIA	9113	BLISTER TRUNK-INFECTED
4822	H.INFLUENZAE PNEUMONIA	9115	INSECT BITE TRUNK-INFEC
48230	STREPTOCOCCAL PNEUMN NOS	9117	FOREIGN BODY TRUNK-INFEC
48231	PNEUMONIA STRPTOCOCCUS A	9119	SUPERF INJ TRNK NEC-INF
48232	PNEUMONIA STRPTOCOCCUS B	9121	ABRASION SHLDR/ARM-INFEC
48239	PNEUMONIA OTH STREP	9123	BLISTER SHOULDER/ARM-INF
48240	STAPHYLOCOCCAL PNEU NOS	9125	INSECT BITE SHLD/ARM-INF
48241	METH SUS PNEUM D/T STAPH	9127	FB SHOULDER/ARM-INFECT
48242	METH RES PNEU D/T STAPH	9129	SUPERF INJ SHLDR NEC-INF
48249	STAPH PNEUMONIA NEC	9131	ABRASION FOREARM-INFECT
48281	PNEUMONIA ANAEROBES	9133	BLISTER FOREARM-INFECTED
48282	PNEUMONIA E COLI	9135	INSECT BITE FOREARM-INF
48283	PNEUMO OTH GRM-NEG BACT	9137	FOREIGN BODY FOREARM-INF
48284	LEGIONNAIRES DISEASE	9139	SUPRF INJ FORARM NEC-INF
48289	PNEUMONIA OTH SPCF BACT	9141	ABRASION HAND-INFECTED
4829	BACTERIAL PNEUMONIA NOS	9143	BLISTER HAND-INFECTED
4843	PNEUMONIA IN WHOOPING COUGH	9145	INSECT BITE HAND-INFECT
4845	PNEUMONIA IN ANTHRAX	9147	FOREIGN BODY HAND-INFECT
4848	PNEUMONIA IN OTHER INF DIS	9149	SUPERF INJ HAND NEC-INF
485	BRONCHOPNEUMONIA ORG NOS	9151	ABRASION FINGER-INFECTED
486	PNEUMONIA, ORGANISM NOS	9153	BLISTER FINGER-INFECTED
490	BRONCHITIS NOS	9155	INSECT BITE FINGER-INFEC
49122	OBS CHR BRONC W AC BRONC	9157	FOREIGN BODY FINGER-INF
4941	BRONCHIECTASIS W AC EXAC	9159	SUPRF INJ FINGER NEC-INF
5100	EMPHYEMA WITH FISTULA	9161	ABRASION HIP/LEG-INFECT
5109	EMPHYEMA W/O FISTULA	9163	BLISTER HIP & LEG-INFECT
5111	BACT PLEUR/EFFUS NOT TB	9165	INSECT BITE HIP/LEG-INF
5130	ABSCESS OF LUNG	9167	FOREIGN BDY HIP/LEG-INF
5131	ABSCESS OF MEDIASTINUM	9169	SUPERF INJ LEG NEC-INFEC
51901	TRACHEOSTOMY INFECTION	9171	ABRASION FOOT/TOE-INFEC
5192	MEDIASTITIS	9173	BLISTER FOOT & TOE-INFEC
5220	PULPITIS	9175	INSECT BITE FOOT/TOE-INF
5225	PERIAPICAL ABSCESS	9177	FOREIGN BDY FOOT/TOE-INF
5227	PERIAPICAL ABSC W SINUS	9179	SUPERF INJ FOOT NEC-INF
5230	ACUTE GINGIVITIS	9191	ABRASION NEC-INFECTED
52300	ACUTE GINGITITIS, PLAQUE	9193	BLISTER NEC-INFECTED
52301	AC GINGIVITIS, NONPLAQUE	9195	INSECT BITE NEC-INFECTED
5233	ACUTE PERIODONTITIS	9197	SUPERFICIAL FB NEC-INFEC
52330	AGGRES PERIODONTITIS NOS	9199	SUPERFIC INJ NEC-INFECT
52331	AGGRES PERIODONTITIS, LOC	99590	SIRS, NOS
52332	AGGRES PERIODONTITIS, GEN	99591	SIRS-INFECT W/O ORG DYSF
52333	ACUTE PERIODONTITIS	99592	SIRS-INFECT W ORGAN DYSF
5264	INFLAMMATION OF JAW	99660	INFECT INFLAMM DEVICE IMPLANT GRAFT NOS
5273	SALIVARY GLAND ABSCESS	99661	INFECT INFLAMM CARDIAC DEVICE IMPLANT GRAFT
5283	CELLULITIS/ABSCESS MOUTH	99662	INFECT INFLAMM VASCULAR DEVICE IMPLANT GRAFT
53641	GASTROSTOMY INFECTION	99663	INFECT INFLAMM NERV DEVICE IMPLANT GRAFT
53901	INFECTION DUE TO GASTRIC BAND	99664	INFECT INFLAMM URINARY CATH

	PROCEUDRE		
53981	INFECTION DUE TO OTHER BARIATRIC PROCEDURE	99665	INFECT INFLAMM GU DEVICE IMPLANT GRAFT
59681	INFECTION OF CYSTOSTOMY	99666	INFECT INFLAMM JOINT PROSTH
5400	AC APPEND W PERITONITIS	99667	INFECT INFLAMM OTH ORTHOP DEVICE IMPLANT GRAFT NOS
5401	ABSCESS OF APPENDIX	99669	INFECT INFLAMM OTH DEVICE IMPLANT GRAFT
5409	ACUTE APPENDICITIS NOS	99762	INFECTION AMPUTAT STUMP
541	APPENDICITIS NOS	99802	POSTOPERATIVE SHOCK, SEPTIC
542	OTHER APPENDICITIS	99851	INFECTED POSTOP SEROMA
56201	DVRTCLI SML INT W/O HMRG	99859	OTHER POSTOP INFECTION
56203	DVRTCLI SML INT W HMRHG	9993	INFEC COMPL MED CARE NEC
56211	DVRTCLI COLON W/O HMRHG	99931	OTHER AND UNSPECIFIED INFECTION DUE TO CENTRAL VENOUS CATHETER
56213	DVRTCLI COLON W HMRHG	99932	BLOODSTREAM INFECTION DUE TO CENTRAL VENOUS CATHETER
566	ANAL & RECTAL ABSCESS	99933	LOCAL INFECTION DUE TO CENTRAL VENOUS CATHETER
5670	PERITONITIS IN INFEC DIS	99934	ACUTE INFECTION FOLLOWING TRANSFUSION, INFUSION, OR INJECTION OF BLOOD AND BLOOD PRODUCTS
5671	PNEUMOCOCCAL PERITONITIS		

Appendix I – Definitions of Neonate, Newborn, Normal Newborn, and Outborn

A neonate is defined as any discharge with either:

- age in days at admission between zero and 28 days (inclusive); or
- age in days missing and age in years equal to zero and either:
 - an admission type of newborn (SID ATYPE=4); or
 - with any-listed ICD-9-CM diagnosis codes for in-hospital live birth; or
 - with any-listed ICD-9-CM diagnosis codes for neonatal observation and evaluation

ICD-9-CM In-hospital live birth diagnosis codes:

V3000	SINGLE LB IN-HOSP W/O CS	V3401	OTH MULT LB-IN HOSP W CS
V3001	SINGLE LB IN-HOSP W CS	V3500	OTH MULT SB-HOSP W/O CS
V3100	TWIN-MATE LB-HOSP W/O CS	V3501	OTH MULT SB-IN HOSP W CS
V3101	TWIN-MATE LB-IN HOS W CS	V3600	MULT LB/SB-IN HOS W/O CS
V3200	TWIN-MATE SB-HOSP W/O CS	V3601	MULT LB/SB-IN HOSP W CS
V3201	TWIN-MATE SB-HOSP W CS	V3700	MULT BRTH NOS-HOS W/O CS
V3300	TWIN-NOS-IN HOSP W/O CS	V3701	MULT BIRTH NOS-HOSP W CS
V3301	TWIN-NOS-IN HOSP W CS	V3900	LIVEBORN NOS-HOSP W/O CS
V3400	OTH MULT LB-HOSP W/O CS	V3901	LIVEBORN NOS-HOSP W CS

ICD-9-CM Neonatal observation and evaluation diagnosis codes:

V290	NB OBSRV SUSPCT INFECT	V293	NB OBS GENETC/METABL CND
A/291	NB OBSRV SUSPCT NEURLGCL	V298	NB OBSRV OTH SUSPCT COND
V292	OBSRV NB SUSPC RESP COND	V299	NB OBSRV UNSP SUSPCT CND

newborn is defined as any discharge meeting the definition of “neonate” (see above) with either:

- any-listed ICD-9-CM code for in-hospital live birth (see above) and age in days equal to zero or missing; or
- an admission type of newborn (SID ATYPE=4) and age in days equal to zero without any-listed ICD-9-CM diagnosis codes for out-of-hospital live birth; or
- an admission type of newborn (SID ATYPE=4) with point of origin for born inside this hospital (POINTOFORIGINUB04 code =5)

ICD-9-CM Out-of-hospital live birth diagnosis codes:

V301	SINGL LIVEBRN-BEFORE ADM	V342	OTH MULTIPLE NB-NONHOSP
V302	SINGLE LIVEBORN-NONHOSP	V351	OTH MULT SB-BEFORE ADM
V311	TWIN, MATE LB-BEFORE ADM	V352	OTH MULTIPLE SB-NONHOSP
V312	TWIN, MATE LB-NONHOSP	V361	MULT NB/SB-BEFORE ADM
V321	TWIN, MATE SB-BEFORE ADM	V362	MULTIPLE NB/SB-NONHOSP
V322	TWIN, MATE SB-NONHOSP	V371	MULT BRTH NOS-BEFORE ADM
V331	TWIN NOS-BEFORE ADMISSN	V372	MULT BIRTH NOS-NONHOSP
V332	TWIN NOS-NONHOSP	V391	LIVEBORN NOS-BEFORE ADM
V341	OTH MULT NB-BEFORE ADM	V392	LIVEBORN NOS-NONHOSP

A normal newborn is defined as any discharge meeting the definition of “newborn” (see above) with a DRG code of 391 or a MS-DRG code 795.

An outborn is defined as any discharge meeting the definition of “neonate” (see above) that does not meet the definition of “newborn” (see above) with either:

- age in days less than 2 days and not missing; or
- an admission type of newborn (SID ATYPE=4) and age in days missing; or
- an admission type of newborn (SID ATYPE=4) and point of origin for born outside this hospital (POINTOFORIGINUB04 code =6)

Appendix J – Admission Codes for Transfers

SID ASOURCE Codes

- 2 - Another hospital
- 3 - Another facility, including long term care

POINTOFORIGINUB04 Codes

- 4 - Transfer from a hospital
- 5 - Transfer from a Skilled Nursing Facility (SNF) or Intermediate Care Facility (ICF)
- 6 - Transfer from another health care facility

If Admission Type is newborn (ATYPE=4), POINTOFORIGINUB04 codes are as follows:

- 5 - Born inside this hospital
- 6 - Born outside of this hospital

Appendix K – Stratification

The PDI module reports rates stratified by age and/or birth weight and, in some cases, by specified clinical strata. Refer to the individual Technical Specifications documents for indicator-specific stratification. The values of three variables related to age and weight are used to assign cases to stratification categories: Pediatric Age in Years, Age in Days, and Birth Weight.

Pediatric Age in Years

The values for Pediatric Age in Years include the following:

- 1 = Less than one (1) year
- 2 = 1 to 2 years
- 3 = 3 to 5 years
- 4 = 6 to 12 years
- 5 = 13 to 17 years

Age in Days

Age in Days is defined on patients whose age is less than one year. Possible values for this category are as follows:

- 0 = N/A
- 1 = 0 to 28 days
- 2 = 29 to 60 days
- 3 = 61 to 90 days
- 4 = 91 to 365 days

Birth Weight

Values assigned to Birth Weight categories are based on ICD-9-CM diagnosis codes that specify infant weight in grams. The values are as follows:

- 0 = N/A
- 1 = 0 to 499 g
- 2 = 500 to 999 g
- 3 = 1000 to 1499 g
- 4 = 1500 to 1999 g
- 5 = 2000 to 2500 g

Appendix L – Low Birth Weight Categories

ICD-9-CM Birth Weight Category 1 (less than 500 grams) diagnosis codes:

76401	LIGHT-FOR-DATES <500G	76501	EXTREME IMMATUR <500G
76411	LT-FOR-DATE W/MAL <500G	76511	PRETERM NEC <500G
76421	FETAL MALNUTRITION <500G	V2131	LOW BIRTHWT STATUS <500G
76491	FET GROWTH RETARD <500G		

ICD-9-CM Birth Weight Category 2 (500 to 749 grams) diagnosis codes:

76402	LT-FOR-DATES 500-749G	76502	EXTREME IMMATUR 500-749G
76412	LT-DATE W/MAL 500-749G	76512	PRETERM NEC 500-749G
76422	FETAL MALNUTR 500-749G	V2132	LOW BIRTHWT 500-999G
76492	FET GROWTH RET 500-749G		

ICD-9-CM Birth Weight Category 3 (750 to 999 grams) diagnosis codes:

76403	LT-FOR-DATES 750-999G	76503	EXTREME IMMATUR 750-999G
76413	LT-DATE W/MAL 750-999G	76513	PRETERM NEC 750-999G
76423	FETAL MAL 750-999G	V2132	LOW BIRTHWT 500-999G
76493	FET GROWTH RET 750-999G		

ICD-9-CM Birth Weight Category 4 (1,000 to 1,249 grams) diagnosis codes:

76404	LT-FOR-DATES 1000-1249G	76504	EXTREME IMMAT 1000-1249G
76414	LT-DATE W/MAL 1000-1249G	76514	PRETERM NEC 1000-1249G
76424	FETAL MAL 1000-1249G	V2133	LOW BIRTHWT 1000-1499G
76494	FET GRWTH RET 1000-1249G		

ICD-9-CM Birth Weight Category 5 (1,250 to 1,499 grams) diagnosis codes:

76405	LT-FOR-DATES 1250-1499G	76505	EXTREME IMMAT 1250-1499G
76415	LT-DATE W/MAL 1250-1499G	76515	PRETERM NEC 1250-1499G
76425	FETAL MAL 1250-1499G	V2133	LOW BIRTHWT 1000-1499G
76495	FET GRWTH RET 1250-1499G		

ICD-9-CM Birth Weight Category 6 (1,500 to 1,749 grams) diagnosis codes:

76406	LT-FOR-DATES 1500-1749G	76506	EXTREME IMMAT 1500-1749G
76416	LT-DATE W/MAL 1500-1749G	76516	PRETERM NEC 1500-1749G
76426	FETAL MAL 1500-1749G	V2134	LOW BIRTHWT 1500-1999G
76496	FET GRWTH RET 1500-1749G		

ICD-9-CM Birth Weight Category 7 (1,750 to 1,999 grams) diagnosis codes:

76407	LT-FOR-DATES 1750-1999G	76507	EXTREME IMMAT 1750-1999G
76417	LT-DATE W/MAL 1750-1999G	76517	PRETERM NEC 1750-1999G
76427	FETAL MALNUTR 1750-1999G	V2134	LOW BIRTHWT 1500-1999G
76497	FET GRWTH RET 1750-1999G		

ICD-9-CM Birth Weight Category 8 (2,000 to 2,499 grams) diagnosis codes:

76408	LT-FOR-DATES 2000-2499G	76508	EXTREME IMMAT 2000-2499G
76418	LT-DATE W/MAL 2000-2499G	76518	PRETERM NEC 2000-2499G
76428	FETAL MALNUTR 2000-2499G	V2135	LOW BIRTHWT 2000-2500G
76498	FET GRWTH RET 2000-2499G		

ICD-9-CM Birth Weight Category 9 (≥ 2,500 grams) diagnosis codes:

76409	LT-FOR-DATES 2500+G	76499	FET GRWTH RET 2500+G
76419	LT-DATE W/MAL 2500+G	76509	EXTREME IMMAT 2500+G
76429	FETAL MALNUTR 2500+G	76519	PRETERM NEC 2500+G

Appendix M – Cancer

1400	MAL NEO UPPER VERMILION	1893	MALIGN NEOPL URETHRA
1401	MAL NEO LOWER VERMILION	1894	MAL NEO PARAURETHRAL
1403	MAL NEO UPPER LIP, INNER	1898	MAL NEO URINARY NEC
1404	MAL NEO LOWER LIP, INNER	1899	MAL NEO URINARY NOS
1405	MAL NEO LIP, INNER NOS	1900	MALIGN NEOPL EYEBALL
1406	MAL NEO LIP, COMMISSURE	1901	MALIGN NEOPL ORBIT
1408	MAL NEO LIP NEC	1902	MAL NEO LACRIMAL GLAND
1409	MAL NEO LIP/VERMIL NOS	1903	MAL NEO CONJUNCTIVA
1410	MAL NEO TONGUE BASE	1904	MALIGN NEOPL CORNEA
1411	MAL NEO DORSAL TONGUE	1905	MALIGN NEOPL RETINA
1412	MAL NEO TIP/LAT TONGUE	1906	MALIGN NEOPL CHOROID
1413	MAL NEO VENTRAL TONGUE	1907	MAL NEO LACRIMAL DUCT
1414	MAL NEO ANT 2/3 TONGUE	1908	MALIGN NEOPL EYE NEC
1415	MAL NEO TONGUE JUNCTION	1909	MALIGN NEOPL EYE NOS
1416	MAL NEO LINGUAL TONSIL	1910	MALIGN NEOPL CEREBRUM
1418	MALIG NEO TONGUE NEC	1911	MALIG NEO FRONTAL LOBE
1419	MALIG NEO TONGUE NOS	1912	MAL NEO TEMPORAL LOBE
1420	MALIG NEO PAROTID	1913	MAL NEO PARIETAL LOBE
1421	MALIG NEO SUBMANDIBULAR	1914	MAL NEO OCCIPITAL LOBE
1422	MALIG NEO SUBLINGUAL	1915	MAL NEO CEREB VENTRICLE
1428	MAL NEO MAJ SALIVARY NEC	1916	MAL NEO CEREBELLUM NOS
1429	MAL NEO SALIVARY NOS	1917	MAL NEO BRAIN STEM
1430	MALIG NEO UPPER GUM	1918	MALIG NEO BRAIN NEC
1431	MALIG NEO LOWER GUM	1919	MALIG NEO BRAIN NOS
1438	MALIG NEO GUM NEC	1920	MAL NEO CRANIAL NERVES
1439	MALIG NEO GUM NOS	1921	MAL NEO CEREBRAL MENING
1440	MAL NEO ANT FLOOR MOUTH	1922	MAL NEO SPINAL CORD
1441	MAL NEO LAT FLOOR MOUTH	1923	MAL NEO SPINAL MENINGES
1448	MAL NEO MOUTH FLOOR NEC	1928	MAL NEO NERVOUS SYST NEC
1449	MAL NEO MOUTH FLOOR NOS	1929	MAL NEO NERVOUS SYST NOS
1450	MAL NEO CHEEK MUCOSA	193	MALIGN NEOPL THYROID
1451	MAL NEO MOUTH VESTIBULE	1940	MALIGN NEOPL ADRENAL
1452	MALIG NEO HARD PALATE	1941	MALIG NEO PARATHYROID
1453	MALIG NEO SOFT PALATE	1943	MALIG NEO PITUITARY
1454	MALIGNANT NEOPLASM UVULA	1944	MALIGN NEO PINEAL GLAND
1455	MALIGNANT NEO PALATE NOS	1945	MAL NEO CAROTID BODY
1456	MALIG NEO RETROMOLAR	1946	MAL NEO PARAGANGLIA NEC
1458	MALIG NEOPLASM MOUTH NEC	1948	MAL NEO ENDOCRINE NEC
1459	MALIG NEOPLASM MOUTH NOS	1949	MAL NEO ENDOCRINE NOS
1460	MALIGNANT NEOPL TONSIL	1950	MAL NEO HEAD/FACE/NECK
1461	MAL NEO TONSILLAR FOSSA	1951	MALIGN NEOPL THORAX
1462	MAL NEO TONSIL PILLARS	1952	MALIG NEO ABDOMEN
1463	MALIGN NEOPL VALLECULA	1953	MALIGN NEOPL PELVIS
1464	MAL NEO ANT EPIGLOTTIS	1954	MALIGN NEOPL ARM
1465	MAL NEO EPIGLOTTIS JUNCT	1955	MALIGN NEOPL LEG
1466	MAL NEO LAT OROPHARYNX	1958	MALIG NEO SITE NEC
1467	MAL NEO POST OROPHARYNX	1960	MAL NEO LYMPH-HEAD/NECK
1468	MAL NEO OROPHARYNX NEC	1961	MAL NEO LYMPH-INTRATHOR
1469	MALIG NEO OROPHARYNX NOS	1962	MAL NEO LYMPH INTRA-ABD
1470	MAL NEO SUPER NASOPHARYN	1963	MAL NEO LYMPH-AXILLA/ARM
1471	MAL NEO POST NASOPHARYNX	1965	MAL NEO LYMPH-INGUIN/LEG
1472	MAL NEO LAT NASOPHARYNX	1966	MAL NEO LYMPH-INTRAPELV
1473	MAL NEO ANT NASOPHARYNX	1968	MAL NEO LYMPH NODE-MULT
1478	MAL NEO NASOPHARYNX NEC	1969	MAL NEO LYMPH NODE NOS
1479	MAL NEO NASOPHARYNX NOS	1970	SECONDARY MALIG NEO LUNG
1480	MAL NEO POSTCRICOID	1971	SEC MAL NEO MEDIASTINUM
1481	MAL NEO PYRIFORM SINUS	1972	SECOND MALIG NEO PLEURA
1482	MAL NEO ARYEPIGLOTT FOLD	1973	SEC MALIG NEO RESP NEC
1483	MAL NEO POST HYPOPHARYNX	1974	SEC MALIG NEO SM BOWEL

1488	MAL NEO HYPOPHARYNX NEC	1975	SEC MALIG NEO LG BOWEL
1489	MAL NEO HYPOPHARYNX NOS	1976	SEC MAL NEO PERITONEUM
1490	MAL NEO PHARYNX NOS	1977	SECOND MALIG NEO LIVER
1491	MAL NEO WALDEYERS RING	1978	SEC MAL NEO GI NEC
1498	MAL NEO ORAL/PHARYNX NEC	1980	SECOND MALIG NEO KIDNEY
1499	MAL NEO OROPHRYN ILL-DEF	1981	SEC MALIG NEO URIN NEC
1500	MAL NEO CERVICAL ESOPHAG	1982	SECONDARY MALIG NEO SKIN
1501	MAL NEO THORACIC ESOPHAG	1983	SEC MAL NEO BRAIN/SPINE
1502	MAL NEO ABDOMIN ESOPHAG	1984	SEC MALIG NEO NERVE NEC
1503	MAL NEO UPPER 3RD ESOPH	1985	SECONDARY MALIG NEO BONE
1504	MAL NEO MIDDLE 3RD ESOPH	1986	SECOND MALIG NEO OVARY
1505	MAL NEO LOWER 3RD ESOPH	1987	SECOND MALIG NEO ADRENAL
1508	MAL NEO ESOPHAGUS NEC	19881	SECOND MALIG NEO BREAST
1509	MAL NEO ESOPHAGUS NOS	19882	SECOND MALIG NEO GENITAL
1510	MAL NEO STOMACH CARDIA	19889	SECONDARY MALIG NEO NEC
1511	MALIGNANT NEO PYLORUS	1990	MALIG NEO DISSEMINATED
1512	MAL NEO PYLORIC ANTRUM	1991	MALIGNANT NEOPLASM NOS
1513	MAL NEO STOMACH FUNDUS	20100	HDGK PRG UNSP XTRNDL ORG
1514	MAL NEO STOMACH BODY	20101	HODGKINS PARAGRAN HEAD
1515	MAL NEO STOM LESSER CURV	20102	HODGKINS PARAGRAN THORAX
1516	MAL NEO STOM GREAT CURV	20103	HODGKINS PARAGRAN ABDOM
1518	MALIG NEOPL STOMACH NEC	20104	HODGKINS PARAGRAN AXILLA
1519	MALIG NEOPL STOMACH NOS	20105	HODGKINS PARAGRAN INGUIN
1520	MALIGNANT NEOPL DUODENUM	20106	HODGKINS PARAGRAN PELVIC
1521	MALIGNANT NEOPL JEJUNUM	20107	HODGKINS PARAGRAN SPLEEN
1522	MALIGNANT NEOPLASM ILEUM	20108	HODGKINS PARAGRAN MULT
1523	MAL NEO MECKELS DIVERT	20110	HDGK GRN UNSP XTRNDL ORG
1528	MAL NEO SMALL BOWEL NEC	20111	HODGKINS GRANULOM HEAD
1529	MAL NEO SMALL BOWEL NOS	20112	HODGKINS GRANULOM THORAX
1530	MAL NEO HEPATIC FLEXURE	20113	HODGKINS GRANULOM ABDOM
1531	MAL NEO TRANSVERSE COLON	20114	HODGKINS GRANULOM AXILLA
1532	MAL NEO DESCEND COLON	20115	HODGKINS GRANULOM INGUIN
1533	MAL NEO SIGMOID COLON	20116	HODGKINS GRANULOM PELVIC
1534	MALIGNANT NEOPLASM CECUM	20117	HODGKINS GRANULOM SPLEEN
1535	MALIGNANT NEO APPENDIX	20118	HODGKINS GRANULOM MULT
1536	MALIG NEO ASCEND COLON	20120	HDGK SRC UNSP XTRNDL ORG
1537	MAL NEO SPLENIC FLEXURE	20121	HODGKINS SARCOMA HEAD
1538	MALIGNANT NEO COLON NEC	20122	HODGKINS SARCOMA THORAX
1539	MALIGNANT NEO COLON NOS	20123	HODGKINS SARCOMA ABDOM
1540	MAL NEO RECTOSIGMOID JCT	20124	HODGKINS SARCOMA AXILLA
1541	MALIGNANT NEOPL RECTUM	20125	HODGKINS SARCOMA INGUIN
1542	MALIG NEOPL ANAL CANAL	20126	HODGKINS SARCOMA PELVIC
1543	MALIGNANT NEO ANUS NOS	20127	HODGKINS SARCOMA SPLEEN
1548	MAL NEO RECTUM/ANUS NEC	20128	HODGKINS SARCOMA MULT
1550	MAL NEO LIVER, PRIMARY	20140	LYM-HST UNSP XTRNDL ORGN
1551	MAL NEO INTRAHEPAT DUCTS	20141	HODG LYMPH-HISTIO HEAD
1552	MALIGNANT NEO LIVER NOS	20142	HODG LYMPH-HISTIO THORAX
1560	MALIG NEO GALLBLADDER	20143	HODG LYMPH-HISTIO ABDOM
1561	MAL NEO EXTRAHEPAT DUCTS	20144	HODG LYMPH-HISTIO AXILLA
1562	MAL NEO AMPULLA OF VATER	20145	HODG LYMPH-HISTIO INGUIN
1568	MALIG NEO BILIARY NEC	20146	HODG LYMPH-HISTIO PELVIC
1569	MALIG NEO BILIARY NOS	20147	HODG LYMPH-HISTIO SPLEEN
1570	MAL NEO PANCREAS HEAD	20148	HODG LYMPH-HISTIO MULT
1571	MAL NEO PANCREAS BODY	20150	NDR SCLR UNSP XTRNDL ORG
1572	MAL NEO PANCREAS TAIL	20151	HODG NODUL SCLERO HEAD
1573	MAL NEO PANCREATIC DUCT	20152	HODG NODUL SCLERO THORAX
1574	MAL NEO ISLET LANGERHANS	20153	HODG NODUL SCLERO ABDOM
1578	MALIG NEO PANCREAS NEC	20154	HODG NODUL SCLERO AXILLA
1579	MALIG NEO PANCREAS NOS	20155	HODG NODUL SCLERO INGUIN
1580	MAL NEO RETROPERITONEUM	20156	HODG NODUL SCLERO PELVIC
1588	MAL NEO PERITONEUM NEC	20157	HODG NODUL SCLERO SPLEEN
1589	MAL NEO PERITONEUM NOS	20158	HODG NODUL SCLERO MULT

1590	MALIG NEO INTESTINE NOS	20160	MXD CELR UNSP XTRNDL ORG
1591	MALIGNANT NEO SPLEEN NEC	20161	HODGKINS MIX CELL HEAD
1598	MAL NEO GI/INTRA-ABD NEC	20162	HODGKINS MIX CELL THORAX
1599	MAL NEO GI TRACT ILL-DEF	20163	HODGKINS MIX CELL ABDOM
1600	MAL NEO NASAL CAVITIES	20164	HODGKINS MIX CELL AXILLA
1601	MALIG NEO MIDDLE EAR	20165	HODGKINS MIX CELL INGUIN
1602	MAL NEO MAXILLARY SINUS	20166	HODGKINS MIX CELL PELVIC
1603	MAL NEO ETHMOIDAL SINUS	20167	HODGKINS MIX CELL SPLEEN
1604	MALIG NEO FRONTAL SINUS	20168	HODGKINS MIX CELL MULT
1605	MAL NEO SPHENOID SINUS	20170	LYM DPLT UNSP XTRNDL ORG
1608	MAL NEO ACCESS SINUS NEC	20171	HODG LYMPH DEPLET HEAD
1609	MAL NEO ACCESS SINUS NOS	20172	HODG LYMPH DEPLET THORAX
1610	MALIGNANT NEO GLOTTIS	20173	HODG LYMPH DEPLET ABDOM
1611	MALIG NEO SUPRAGLOTTIS	20174	HODG LYMPH DEPLET AXILLA
1612	MALIG NEO SUBGLOTTIS	20175	HODG LYMPH DEPLET INGUIN
1613	MAL NEO CARTILAGE LARYNX	20176	HODG LYMPH DEPLET PELVIC
1618	MALIGNANT NEO LARYNX NEC	20177	HODG LYMPH DEPLET SPLEEN
1619	MALIGNANT NEO LARYNX NOS	20178	HODG LYMPH DEPLET MULT
1620	MALIGNANT NEO TRACHEA	20190	HDGK DIS UNSP XTRNDL ORG
1622	MALIG NEO MAIN BRONCHUS	20191	HODGKINS DIS NOS HEAD
1623	MAL NEO UPPER LOBE LUNG	20192	HODGKINS DIS NOS THORAX
1624	MAL NEO MIDDLE LOBE LUNG	20193	HODGKINS DIS NOS ABDOM
1625	MAL NEO LOWER LOBE LUNG	20194	HODGKINS DIS NOS AXILLA
1628	MAL NEO BRONCH/LUNG NEC	20195	HODGKINS DIS NOS INGUIN
1629	MAL NEO BRONCH/LUNG NOS	20196	HODGKINS DIS NOS PELVIC
1630	MAL NEO PARIETAL PLEURA	20197	HODGKINS DIS NOS SPLEEN
1631	MAL NEO VISCERAL PLEURA	20198	HODGKINS DIS NOS MULT
1638	MALIG NEOPL PLEURA NEC	20200	NDLR LYM UNSP XTRNDL ORG
1639	MALIG NEOPL PLEURA NOS	20201	NODULAR LYMPHOMA HEAD
1640	MALIGNANT NEOPL THYMUS	20202	NODULAR LYMPHOMA THORAX
1641	MALIGNANT NEOPL HEART	20203	NODULAR LYMPHOMA ABDOM
1642	MAL NEO ANT MEDIASTINUM	20204	NODULAR LYMPHOMA AXILLA
1643	MAL NEO POST MEDIASTINUM	20205	NODULAR LYMPHOMA INGUIN
1648	MAL NEO MEDIASTINUM NEC	20206	NODULAR LYMPHOMA PELVIC
1649	MAL NEO MEDIASTINUM NOS	20207	NODULAR LYMPHOMA SPLEEN
1650	MAL NEO UPPER RESP NOS	20208	NODULAR LYMPHOMA MULT
1658	MAL NEO THORAX/RESP NEC	20210	MYCS FNG UNSP XTRNDL ORG
1659	MAL NEO RESP SYSTEM NOS	20211	MYCOSIS FUNGOIDES HEAD
1700	MAL NEO SKULL/FACE BONE	20212	MYCOSIS FUNGOIDES THORAX
1701	MALIGNANT NEO MANDIBLE	20213	MYCOSIS FUNGOIDES ABDOM
1702	MALIG NEO VERTEBRAE	20214	MYCOSIS FUNGOIDES AXILLA
1703	MAL NEO RIBS/STERN/CLAV	20215	MYCOSIS FUNGOIDES INGUIN
1704	MAL NEO LONG BONES ARM	20216	MYCOSIS FUNGOIDES PELVIC
1705	MAL NEO BONES WRIST/HAND	20217	MYCOSIS FUNGOIDES SPLEEN
1706	MAL NEO PELVIC GIRDLE	20218	MYCOSIS FUNGOIDES MULT
1707	MAL NEO LONG BONES LEG	20220	SZRY DIS UNSP XTRNDL ORG
1708	MAL NEO BONES ANKLE/FOOT	20221	SEZARYS DISEASE HEAD
1709	MALIG NEOPL BONE NOS	20222	SEZARYS DISEASE THORAX
1710	MAL NEO SOFT TISSUE HEAD	20223	SEZARYS DISEASE ABDOM
1712	MAL NEO SOFT TISSUE ARM	20224	SEZARYS DISEASE AXILLA
1713	MAL NEO SOFT TISSUE LEG	20225	SEZARYS DISEASE INGUIN
1714	MAL NEO SOFT TIS THORAX	20226	SEZARYS DISEASE PELVIC
1715	MAL NEO SOFT TIS ABDOMEN	20227	SEZARYS DISEASE SPLEEN
1716	MAL NEO SOFT TIS PELVIS	20228	SEZARYS DISEASE MULT
1717	MAL NEOPL TRUNK NOS	20230	MLG HIST UNSP XTRNDL ORG
1718	MAL NEO SOFT TISSUE NEC	20231	MAL HISTIOCYTOSIS HEAD
1719	MAL NEO SOFT TISSUE NOS	20232	MAL HISTIOCYTOSIS THORAX
1720	MALIG MELANOMA LIP	20233	MAL HISTIOCYTOSIS ABDOM
1721	MALIG MELANOMA EYELID	20234	MAL HISTIOCYTOSIS AXILLA
1722	MALIG MELANOMA EAR	20235	MAL HISTIOCYTOSIS INGUIN
1723	MAL MELANOM FACE NEC NOS	20236	MAL HISTIOCYTOSIS PELVIC
1724	MAL MELANOMA SCALP/NECK	20237	MAL HISTIOCYTOSIS SPLEEN

1725	MALIG MELANOMA TRUNK	20238	MAL HISTIOCYTOSIS MULT
1726	MALIG MELANOMA ARM	20240	LK RTCTL UNSP XTRNDL ORG
1727	MALIG MELANOMA LEG	20241	HAIRY-CELL LEUKEM HEAD
1728	MALIG MELANOMA SKIN NEC	20242	HAIRY-CELL LEUKEM THORAX
1729	MALIG MELANOMA SKIN NOS	20243	HAIRY-CELL LEUKEM ABDOM
1740	MALIG NEO NIPPLE	20244	HAIRY-CELL LEUKEM AXILLA
1741	MAL NEO BREAST-CENTRAL	20245	HAIRY-CELL LEUKEM INGUIN
1742	MAL NEO BREAST UP-INNER	20246	HAIRY-CELL LEUKEM PELVIC
1743	MAL NEO BREAST LOW-INNER	20247	HAIRY-CELL LEUKEM SPLEEN
1744	MAL NEO BREAST UP-OUTER	20248	HAIRY-CELL LEUKEM MULT
1745	MAL NEO BREAST LOW-OUTER	20250	LTR-SIWE UNSP XTRNDL ORG
1746	MAL NEO BREAST-AXILLARY	20251	LETTERER-SIWE DIS HEAD
1748	MALIGN NEOPL BREAST NEC	20252	LETTERER-SIWE DIS THORAX
1749	MALIGN NEOPL BREAST NOS	20253	LETTERER-SIWE DIS ABDOM
1750	MAL NEO MALE NIPPLE	20254	LETTERER-SIWE DIS AXILLA
1759	MAL NEO MALE BREAST NEC	20255	LETTERER-SIWE DIS INGUIN
1760	SKIN - KAPOSIS SARCOMA	20256	LETTERER-SIWE DIS PELVIC
1761	SFT TISUE - KPSIS SRCMA	20257	LETTERER-SIWE DIS SPLEEN
1762	PALATE - KPSIS SARCOMA	20258	LETTERER-SIWE DIS MULT
1763	GI SITES - KPSIS SRCOMA	20260	MLG MAST UNSP XTRNDL ORG
1764	LUNG - KAPOSIS SARCOMA	20261	MAL MASTOCYTOSIS HEAD
1765	LYM NDS - KPSIS SARCOMA	20262	MAL MASTOCYTOSIS THORAX
1768	SPF STS - KPSIS SARCOMA	20263	MAL MASTOCYTOSIS ABDOM
1769	KAPOSIS SARCOMA NOS	20264	MAL MASTOCYTOSIS AXILLA
179	MALIG NEOPL UTERUS NOS	20265	MAL MASTOCYTOSIS INGUIN
1800	MALIG NEO ENDOCERVIX	20266	MAL MASTOCYTOSIS PELVIC
1801	MALIG NEO EXOCERVIX	20267	MAL MASTOCYTOSIS SPLEEN
1808	MALIG NEO CERVIX NEC	20268	MAL MASTOCYTOSIS MULT
1809	MAL NEO CERVIX UTERI NOS	20280	OTH LYMP UNSP XTRNDL ORG
181	MALIGNANT NEOPL PLACENTA	20281	LYMPHOMAS NEC HEAD
1820	MALIG NEO CORPUS UTERI	20282	LYMPHOMAS NEC THORAX
1821	MAL NEO UTERINE ISTHMUS	20283	LYMPHOMAS NEC ABDOM
1828	MAL NEO BODY UTERUS NEC	20284	LYMPHOMAS NEC AXILLA
1830	MALIGN NEOPL OVARY	20285	LYMPHOMAS NEC INGUIN
1832	MAL NEO FALLOPIAN TUBE	20286	LYMPHOMAS NEC PELVIC
1833	MAL NEO BROAD LIGAMENT	20287	LYMPHOMAS NEC SPLEEN
1834	MALIG NEO PARAMETRIUM	20288	LYMPHOMAS NEC MULT
1835	MAL NEO ROUND LIGAMENT	20290	UNSP LYM UNSP XTRNDL ORG
1838	MAL NEO ADNEXA NEC	20291	LYMPHOID MAL NEC HEAD
1839	MAL NEO ADNEXA NOS	20292	LYMPHOID MAL NEC THORAX
1840	MALIGN NEOPL VAGINA	20293	LYMPHOID MAL NEC ABDOM
1841	MAL NEO LABIA MAJORA	20294	LYMPHOID MAL NEC AXILLA
1842	MAL NEO LABIA MINORA	20295	LYMPHOID MAL NEC INGUIN
1843	MALIGN NEOPL CLITORIS	20296	LYMPHOID MAL NEC PELVIC
1844	MALIGN NEOPL VULVA NOS	20297	LYMPHOID MAL NEC SPLEEN
1848	MAL NEO FEMALE GENIT NEC	20298	LYMPHOID MAL NEC MULT
1849	MAL NEO FEMALE GENIT NOS	2030	MULTIPLE MYELOMA
185	MALIGN NEOPL PROSTATE	20300	MULT MYELM W/O REMISSION
1860	MAL NEO UNDESCEND TESTIS	20301	MULT MYELM W REMISSION
1869	MALIG NEO TESTIS NEC	2031	PLASMA CELL LEUKEMIA
1871	MALIGN NEOPL PREPUCE	20310	PLSM CELL LEUK W/O RMSON
1872	MALIG NEO GLANS PENIS	20311	PLSM CELL LEUK W RMSON
1873	MALIG NEO PENIS BODY	2038	IMMUNOPROLIFERAT NEO NEC
1874	MALIG NEO PENIS NOS	20380	OTH IMNPRFL NPL W/O RMSN
1875	MALIG NEO EPIDIDYMIS	20381	OTH IMNPRFL NPL W RMSN
1876	MAL NEO SPERMATIC CORD	2040	ACUTE LYMPHOID LEUKEMIA
1877	MALIGN NEOPL SCROTUM	20400	ACT LYM LEUK W/O RMSION
1878	MAL NEO MALE GENITAL NEC	20401	ACT LYM LEUK W RMSION
1879	MAL NEO MALE GENITAL NOS	2041	CHR LYMPHOID LEUKEMIA
1880	MAL NEO BLADDER-TRIGONE	20410	CHR LYM LEUK W/O RMSION
1881	MAL NEO BLADDER-DOME	20411	CHR LYM LEUK W RMSION
1882	MAL NEO BLADDER-LATERAL	2042	SUBAC LYMPHOID LEUKEMIA

1883	MAL NEO BLADDER-ANTERIOR	20420	SBAC LYM LEUK W/O RMSION
1884	MAL NEO BLADDER-POST	20421	SBAC LYM LEUK W RMSION
1885	MAL NEO BLADDER NECK	2048	LYMPHOID LEUKEMIA NEC
1886	MAL NEO URETERIC ORIFICE	20480	OTH LYM LEUK W/O RMSION
1887	MALIG NEO URACHUS	20481	OTH LYM LEUK W RMSION
1888	MALIG NEO BLADDER NEC	2049	LYMPHOID LEUKEMIA NOS
1889	MALIG NEO BLADDER NOS	20490	UNS LYM LEUK W/O RMSION
1890	MALIG NEOPL KIDNEY	20491	UNS LYM LEUK W RMSION
1891	MALIG NEO RENAL PELVIS	2386	NEOPLASM OF UNCERTAIN BEHAVIOR OF OTHER AND UNSPECIFIED SITES AND TISSUES, PLASMA CELLS
1892	MALIGN NEOPL URETER	2733	DISORDERS OF PLASMA PROTEIN METABOLISM- MACROGLOBULINEMIA

PEDIATRIC QUALITY INDICATORS 02 (PDI 02)
PRESSURE ULCER RATE
PARAMETER ESTIMATES Version 5.0

Prepared for:

Agency for Healthcare Research and Quality
U.S. Department of Health and Human Services
540 Gaither Road
Rockville, MD 20850
<http://www.qualityindicators.ahrq.gov>

Prepared by: Stanford University

Center for Primary Care and Outcomes Research

Risk Adjustment Coefficients for PDI #02 - Pressure Ulcer Rate

Parameter	Label	DF	Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square
Intercept		1	-9.6134	0.2299	1749.134	<.0001
AGE	13 to 17	1	2.0159	0.2019	99.6502	<.0001
AGE	6 to 12	1	1.1068	0.2291	23.3459	<.0001
MDC	1 (Nervous System)	1	-0.6495	0.2159	9.0504	0.0026
RANDOM	Uniform<=0.5	1	0.2764	0.1342	4.2423	0.0394
RISK STRATA	HIGH	1	3.5249	0.1493	557.7324	<.0001

c-statistic=0.817

Table 1. Reference Population Rate and Distribution of Hospital Performance PDI02 Pressure Ulcer Rate

Overall Reference Population Rate								
Year	Number Hospitals	Outcome of Interest (Numerator) ¹			Population at Risk (Denominator) ¹		Observed Rate Per 1000 ¹	
2012	2,399	69			241,226		0.286	
2011	2,305	75			239,725		0.3129	
2010 ³	3,380	56			388,389		0.145	
2009 ³	3,465	49			394,826		0.124	
2008 ³	3,521	409 ⁴			387,746		1.056	
Distribution of Hospital-level Observed Rates in Reference Population								
Year	Number of Hospitals	Distribution of Observed Hospital-level Rates per 1000 (p=percentile) ²						
		Mean	SD	p5	p25	Median	p75	p95
2012	2,399	0.20	3.13	0.00	0.00	0.00	0.00	0.00
2011	2,305	0.09	1.06	0.00	0.00	0.00	0.00	0.00

Source: HCUP State Inpatient Databases (SID). Healthcare Cost and Utilization Project (HCUP). 2008-2012. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/sidoverview.jsp. (AHRQ QI Software Version 4.5 and 5.0)

¹The observed rate refers to the total rate for all observations included in the reference population data (numerator) divided the total combined population of all hospitals included in the reference population data (denominator).

²The distribution of hospital rates reports the mean and standard deviation (SD) of the observed rates for all hospitals included in the dataset, as well as the observed rate for hospitals in the 5th, 25th, 50th (median), 75th, and 95th percentile.

³2008-2010 data are calculated using Version 4.5 of the QI Software and all states included in the SID for those years. Version 4.5 includes a “prediction module” which is used to account for missing present on admission flags. In Version 5.0, the “prediction module” has been removed and the reference population is limited to states and hospitals with present on admission data. These differences may lead to some discontinuity in the observed rates between 2010 and 2011, since many states did not report POA data prior to 2011. The number of states reporting consistent POA has increased from 2008-2012.

⁴In FY 2009, new diagnosis codes were introduced for pressure ulcer stage. Prior to that date, all stages of pressure ulcers were included due to inability to determine staging using administrative data.



Quality Indicator Empirical Methods

Prepared for:

Agency for Healthcare Research and Quality
U.S. Department of Health and Human Services
540 Gaither Road
Rockville, MD 20850
<http://www.qualityindicators.ahrq.gov>

Contract No. HHSA290201200003I

Updated by:

Truven Health Analytics
Stanford University (Prime Contractor)

Revised November 2014

Disclaimer

This document is based on research conducted by Stanford University and Truven Health Analytics under contract to the Agency for Healthcare Research and Quality (AHRQ), Rockville, MD (Contract No. HHSA290201200003I). This document reflects an update of work products developed by Battelle under contract to the Agency for Healthcare Research and Quality (AHRQ), Rockville, MD (Contract No. HHSA290201200001C). The findings and conclusions in this document are those of the author(s), who are responsible for its content, and do not necessarily represent the views of AHRQ. No statement in this report should be construed as an official position of AHRQ or of the U.S. Department of Health and Human Services.

The information in this report is intended to help clinicians, employers, policymakers, and others make informed decisions about the provision of health care services. This document is intended as a reference and not as a substitute for clinical judgment.

This document is in the public domain and may be used and reprinted without permission except those copyrighted materials that are clearly noted in the document. Further reproduction of those copyrighted materials is prohibited without the specific permission of copyright holders.

Suggested Citation:

Quality Indicator Empirical Methods (Revised by Truven Health Analytics, Stanford University (prime contractor), under Contract No. HHS A290201200003I). Rockville, MD: Agency for Healthcare Research and Quality. November 2014.

None of the investigators has any affiliations or financial involvement that conflicts with the material presented in this document.

Contents

Overview	2
Other Helpful Documents	3
Chapter 1. The User's Dataset.....	5
Chapter 2. Calculating Volume and Count Indicators	7
Chapter 3. Calculating Area-Level Indicators – Observed Rates.....	9
Chapter 4. Risk Adjustment for Area-Level Indicators.....	12
Chapter 5. Calculating Area-Level Indicators – Expected, Risk-Adjusted, & Smoothed Rates	13
Chapter 6. Overview of Provider-Level QI & Present- on-Admission (POA).....	15
Chapter 7. Calculating Provider-Level Observed Rates – Ignoring POA.....	18
Chapter 8. Calculating Provider-Level Observed Rates – With POA Data	20
Chapter 9. Risk Adjustment for Provider-Level Indicators.....	22
Chapter 10. Estimating Composite Measures	27
Chapter 11. Software Maintenance – Updating the Reference Population.....	32
Chapter 12. Software Maintenance – Other Updates	37
Appendix A. Table of AHRQ QI Risk-adjustment / POA	40
Appendix B. Table of AHRQ QI Provider-Level Risk-adjustment Covariates	44
Appendix C. Helpful Background Information.....	46

List of Tables

Table 1.1 Required Data Elements	5
Table 1.2 Data Elements and Data Values To Be Constructed by the User.....	6
Table 1.3 Analysis Data Inclusion Rule	6
Table 2.1 AHRQ QI Volume Indicators.....	7
Table 2.2 AHRQ QI Count Indicators.....	7
Table 3.1 AHRQ QI Area-Level Indicators	9
Table 6.1 Methods Used by QI Software to Distinguish Complications from Comorbidities	16
Table 6.2 Values for the Present-on-Admission Data Element.....	17
Table A.1. AHRQ QI Risk-adjustment and Uses of POA	40
Table B.1 Table of AHRQ QI Risk-adjustment Covariates for Provider Level Indicators	44

Overview

This document describes the empirical methods used to calculate the AHRQ Quality Indicators™ (AHRQ QI). The QI measure health care quality and can be used to highlight potential quality concerns, identify areas that need further study and investigation, and track changes over time. The QIs are calculated using software that is freely available at www.qualityindicators.ahrq.gov

The current AHRQ QI modules represent various aspects of quality:

- Prevention Quality Indicators (PQI) identify hospital admissions in geographic areas that evidence suggests might have been avoided through access to high-quality outpatient care. (first released November, 2000, last updated November, 2014)
- Inpatient Quality Indicators (IQI) reflect quality of care inside hospitals, as well as across geographic areas, including inpatient mortality for medical conditions and surgical procedures. (first released May, 2002, last updated November, 2014)
- Patient Safety Indicators (PSI) reflect quality of care inside hospitals, as well as geographic areas, to focus on potentially avoidable complications and iatrogenic events. (first released March 2003, last updated November, 2014)
- Pediatric Quality Indicators (PDI) use indicators from the other three modules with adaptations for use among children and neonates to reflect quality of care inside hospitals, as well as geographic areas, and identify potentially avoidable hospitalizations. (first released April 2006, last updated November, 2014)

The input data for QI calculation consist of discharge-level administrative records from inpatient hospital stays; this document often refers to them as discharge records. Each indicator can be described as giving results at either the provider-level (i.e., Did the patient experience an adverse quality-related event while in the healthcare provider's facility?) or area-level (Was the inpatient admission for a condition that might have been avoided if the patient's area of the country had more or better preventive or outpatient care?). Some indicators report the number of times a hospital performed a medical procedure of interest. These volume indicators do not have denominators. Most of the AHRQ QI are ratios where the numerator is a count of hospitalizations with the condition or outcome of interest and the denominator is an estimate of the population (or hospitalizations) at risk for that outcome. The QI software calculates several rates:

Observed rate – Conceptually, provider-level rates are the number of discharge records where the patient experienced the QI adverse event divided by the number of discharge records at risk for the event; area-level rates are the number of hospitalizations for the condition of interest divided by the number of persons who live in that area who are at risk for the condition.

1. **Expected rate** – A comparative rate that incorporates information about an external **reference population** that is not part of the user's input dataset – what rate would be observed if the expected level of care observed in the reference population and estimated with risk adjustment regression models, were applied to the mix of patients with demographic and comorbidity distributions observed in the user's dataset? The expected

rate is calculated only for risk-adjusted indicators. [Chapter 4](#) describes the QI reference population.

2. **Risk-adjusted rate** – A comparative rate that also incorporates information about a **reference population** that is not part of the input dataset – what rate would be observed if the level of care observed in the user’s dataset were applied to a mix of patients with demographics and comorbidities distributed like the reference population? Appendix A lists which QIs are risk-adjusted.
3. **Smoothed rate** – A weighted average of the risk-adjusted rate from the user’s input dataset and the rate observed in the **reference population**; the smoothed rate is calculated with a shrinkage estimator to result in a rate near that from the user’s dataset if the provider’s (or area’s) rate is estimated in a stable fashion with minimal noise, or to result in a rate near that of the reference population if the rate from the input dataset is unstable and based on noisy data. In practice, the smoothed rate brings rates toward the mean, and does this more so for outliers (such as rural hospitals).

In data collected beginning October 1, 2007¹, each diagnosis code may be accompanied by a data element that indicates whether the diagnosed condition was **Present-on-Admission (POA)**, and is therefore a pre-existing **comorbidity**, or whether the condition developed during the hospitalization of interest and is therefore a **complication**. Some datasets include POA data, while others do not. Some datasets have POA data for many, but not all of the discharge records. POA is handled in different ways in the QI software depending on a) whether POA data are present in the discharge record and b) whether the user specifies that the software should use the POA data elements when calculating QI rates, or ignore the POA data elements. In prior versions of QI software prior to 5.0, a “prediction module” was used to impute missing POA information. Beginning with version 5.0 the QI software no longer uses the “prediction module” and missing POA information is treated as if the condition is not present on admission. This document begins with a brief description of the dataset that a user must assemble to run the QI software and then it describes the methods associated with various types of indicators. Simpler indicators are described first. Volume indicators are the simplest of the QIs. Area-level indicators are described next, along with their several possible denominators, and the method used to risk-adjust them. Building in complexity, the document describes the calculation of provider-level indicators, where the denominator is tailored to the indicator and the QI may be affected by the POA data element, and how the software accounts for missing POA data. Composite indicators are described next and then the document concludes with a description of the methods used to maintain the QI software – specifically the calculations performed to update the reference population and to update denominator data.

Other Helpful Documents

Readers may wish to access additional QI-related documentation. Helpful examples include:

¹ The Centers for Medicaid and Medicare Services required all hospitals participating in the Inpatient Prospective Payment System to submit POA data beginning October 1, 2007. However, these data were not included in some datasets until later years.

QI Empirical Methods

QI Software Instructions

SAS: See <http://www.qualityindicators.ahrq.gov/software/SAS.aspx>
WinQI: See <http://www.qualityindicators.ahrq.gov/Software/WinQI.aspx>

QI Technical Specifications

PQI: See http://www.qualityindicators.ahrq.gov/Modules/PQI_TechSpec.aspx
IQI: See http://www.qualityindicators.ahrq.gov/Modules/IQI_TechSpec.aspx
PSI: See http://www.qualityindicators.ahrq.gov/Modules/PSI_TechSpec.aspx
PDI: See http://www.qualityindicators.ahrq.gov/Modules/PDI_TechSpec.aspx

QI Risk-adjustment Coefficient Tables

PQI: See http://www.qualityindicators.ahrq.gov/modules/pqi_resources.aspx
IQI: See http://www.qualityindicators.ahrq.gov/modules/iqi_resources.aspx
PSI: See http://www.qualityindicators.ahrq.gov/modules/psi_resources.aspx
PDI: See http://www.qualityindicators.ahrq.gov/modules/pdi_resources.aspx

QI Population Documentation File

See <http://www.qualityindicators.ahrq.gov/software/SAS.aspx>

Healthcare Cost and Utilization Project (HCUP) State Inpatient Database (SID) Documentation
(to better understand the source of the reference population)

See <http://www.hcup-us.ahrq.gov/db/state/siddbdocumentation.jsp>

Chapter 1. The User's Dataset

An AHRQ QI software user should prepare the input dataset according to the software instructions.

Table 1.1 Required Data Elements

Data Element	Label	PQI	IQI	PSI	PDI
AGE	Age in years at admission	X	X	X	X
AGEDAY	Age in days (when age < 1 year)				X
ASCHED	Admission scheduled vs. unscheduled			X	X
ASOURCE	Admission source (uniform)	X	X	X	X
ATYPE	Admission type			X	X
DISPUNIFORM	Disposition of patient (uniform)		X	X	X
DQTR	Discharge quarter	X	X	X	X
DRG	DRG in effect on discharge date	X	X	X	X
DRGVER	DRG grouper version used on discharge date	X	X	X	X
DSHOSPID	Data source hospital identifier		X	X	X
DX1-DX30	Diagnosis	X	X	X	X
DXPOA1-DXPOA30	Diagnosis present on admission indicator		X	X	X
E_POA1-E_POA10	E code present on admission indicator		X	X	X
ECODE1-ECODE10	E code		X	X	X
HOSPST	Hospital state postal code		X	X	X
KEY	HCUP record identifier	X	X	X	X
LOS	Length of stay (cleaned)		X	X	X
MDC	MDC in effect on discharge date	X	X	X	X
PAY1	Primary expected payer (uniform)		X	X	X
PAY2	Secondary expected payer (uniform)		X	X	X
POINTOFORIGINUB04	Point of origin for admission or visit, UB-04 standard coding	X	X	X	X
PR1-PR30	Procedure	X	X	X	X
PRDAY1-PRDAY30	Number of days from admission			X	X
PSTCO	Patient state/county FIPS code	X	X	X	X
PSTCO2	Patient state/county FIPS code, possibly derived from ZIP Code	X	X	X	X
RACE	Race (uniform)	X	X	X	X
SEX	Sex	X	X	X	
YEAR	Calendar year	X	X	X	X

Note: The AHRQ QI software deletes discharge records with missing values for SEX.

In preparing a dataset for analysis, data elements and data values shown in the right side of Table 1.2 are constructed from the discharge data elements.

Table 1.2 Data Elements and Data Values to Be Constructed by the User

DISCHARGE DATA (e.g., SID)		AHRQ QI	
Data Element	Data Value	Data Element	Data Value
FEMALE	0 – Male 1 – Female	SEX	1 – Male 2 – Female
ATYPE, ASCHEd and AGEDAY	IF ATYPE = Missing AND ASCHEd = 1 (Scheduled admission) AND AGEDAY ~= 0	ATYPE	3- Elective
ECODE1-ECODE10	As reported	DX31-DX40	As reported
E_POA1-E_POA10	As reported	DXPOA31-DXPOA40	As reported

Discharge records in the dataset are analyzed as either adult or pediatric data based on age and Major Diagnostic Category (MDC) (Table 1.3). Discharges in MDC 14 (Pregnancy, Childbirth & the Puerperium) are assigned to the adult analysis data regardless of age.

Table 1.3 Analysis Data Inclusion Rule

Analysis data	Inclusion Rule
Adult	AGE greater than or equal to 18 or MDC equal to 14
Pediatric	AGE less than 18 and MDC not equal to 14

Adult analysis data are used to calculate Prevention Quality Indicators (PQI), Inpatient Quality Indicators (IQI), and Patient Safety Indicators (PSI). Pediatric records are used to calculate Pediatric Quality Indicators (PDI), Neonatal Quality Indicators (NQI) and indicators from other modules defined on pediatric discharges (i.e., PQI 09 Low Birth Weight Rate, PSI 17 Birth Trauma Rate – Injury to Neonate).

Chapter 2. Calculating Volume and Count Indicators

Table 2.1 lists the seven **volume indicators** for inpatient procedures for which there is evidence that a higher volume of procedures conducted by a provider is associated with lower mortality. The volume indicators are measured as counts of hospitalizations in which particular procedures were performed.

Table 2.1 AHRQ QI Volume Indicators

Name
IQI 01 – Esophageal Resection Volume*
IQI 02 – Pancreatic Resection Volume*
IQI 04 – Abdominal Aortic Aneurysm (AAA) Repair Volume*
IQI 05 – Coronary Artery Bypass Graft (CABG) Volume
IQI 06 – Percutaneous Coronary Intervention (PCI) Volume
IQI 07 – Carotid Endarterectomy Volume
PDI 07 – RACHS-1 Pediatric Heart Surgery Volume

*IQI 1, IQI 2 and IQI 4 are intended to be reported with IQI 8 IQI 9 and IQI 11, respectively.

Table 2.2 lists the four **count indicators** for serious reportable events.

Table 2.2 AHRQ QI Count Indicators

Name
PSI 15 – Retained Surgical Item or Unretrieved Device Fragment Count
PSI 16 – Transfusion Reaction Count
PDI 03 – Retained Surgical Item or Unretrieved Device Fragment Count
PDI 13 – Transfusion Reaction Count

Discharge Level Indicator Data Element (T)

The phrases **numerator** and **denominator** appear throughout the QI documentation. There are no denominators for volume or count indicators. The quantity of interest at the provider level is the magnitude of the number of times the procedure or the event occurs, and that number is not normalized by or divided by any denominator. The technical specifications do, however, use the phrase “numerator” to define the procedure of interest. Discharge records are flagged for inclusion or exclusion from the numerator of each volume QI based on the data elements, data values, and logic described in the technical specifications for each indicator.

For each discharge record, a binary flag variable is calculated by the software for each volume or count QI. In this document, we denote the discharge level indicator data element with the letter T. Each discharge record has a T variable for each QI, so in the software the data elements have longer names to clarify which QI they describe. (e.g., the variable for IQI 01 is called TPIQ01.)

Numerator

Discharges are flagged for inclusion in the numerator of each volume QI according to the specification for the **procedure of interest** (for volume indicators) or **outcome of interest** (for count indicators). Discharges flagged for inclusion in the numerator are assigned a value of “1” for T.

Exclusions

The specifications often stipulate that records should be excluded from calculation of a volume indicator if the record is missing an important data element. Discharges are also excluded from the numerator of a volume QI if the procedure of interest has more than one component, and the discharge is not in the population at risk for one component but remains in the population at risk for another component. These discharges are assigned a value of “0” for T.

The Observed Value

The observed provider-level value of a volume or count indicator is simply the sum of T over all records for that provider in the dataset.

Chapter 3. Calculating Area-Level Indicators – Observed Rates

Area-level indicators identify hospital admissions that evidence suggests might have been avoided through access to high-quality outpatient or preventive care. The numerator is a count of admissions for the condition of interest. The denominator is an estimate of the number of persons at risk for such a hospitalization. The denominator is usually a population estimate from a U.S. Census Bureau dataset.

Table 3.1 lists the area level indicators.

Table 3.1 AHRQ QI Area-Level Indicators

Name
IQI 26 – Coronary Artery Bypass Graft (CABG) Rate
IQI 27 – Percutaneous Coronary Intervention (PCI) Rate
IQI 28 – Hysterectomy Rate
IQI 29 – Laminectomy or Spinal Fusion Rate
PDI 14 – Asthma Admission Rate
PDI 15 – Diabetes Short-Term Complications Admission Rate
PDI 16 – Gastroenteritis Admission Rate
PDI 17 – Perforated Appendix Admission Rate
PDI 18 – Urinary Tract Infection Admission Rate
PQI 01 – Diabetes Short-Term Complications Admission Rate
PQI 02 – Perforated Appendix Admission Rate
PQI 03 – Diabetes Long-Term Complications Admission Rate
PQI 05 – Chronic Obstructive Pulmonary Disease (COPD) or
PQI 07 – Hypertension Admission Rate
PQI 08 – Heart Failure Admission Rate
PQI 09 – Low Birth Weight Rate
PQI 10 – Dehydration Admission Rate
PQI 11 – Bacterial Pneumonia Admission Rate
PQI 12 – Urinary Tract Infection Admission Rate
PQI 13 – Angina Without Procedure Admission Rate
PQI 14 – Uncontrolled Diabetes Admission Rate
PQI 15 – Asthma in Younger Adults Admission Rate
PQI 16 – Lower-Extremity Amputation Among Patients With Diabetes Rate

The software provides the user with the option of producing output by metropolitan area or by county. The term **metropolitan area (MA)** was adopted by the U.S. Census in 1990 and referred collectively to metropolitan statistical areas (MSAs), consolidated metropolitan statistical areas (CMSAs), and primary metropolitan statistical areas (PMSAs). In addition, “area” could refer to either 1) FIPS county, 2) modified FIPS county, 3) 1999 OMB Metropolitan Statistical Area, or 4) 2003 OMB Metropolitan Statistical Area. As an aside, Micropolitan Statistical Areas are not used in the QI software.

For information about how the denominators are calculated from Census data, see the QI Population Documentation File at <http://www.qualityindicators.ahrq.gov/software/SAS.aspx>.

For diabetes-related area measures, the QI software user has an option of calculating rates where the denominator is an estimate of the number of persons living in the state who have diabetes. For information on how those **condition-specific denominators** are estimated, see [Chapter 3](#). The diabetes indicators are PQI 01 Diabetes Short-Term Complications Admission Rate, PQI 03 Diabetes Long-Term Complications Admission Rate, PQI 14 Uncontrolled Diabetes Admission Rate, and PQI 16 Lower-Extremity Amputation among Patients with Diabetes Rate. [Chapter 12](#) describes how the diabetes denominators are estimated.

Future versions of the QI software may include other condition-specific denominator options.

Discharge Level Indicator Data Element (T)

Numerator

Discharges are flagged for inclusion in the numerator of each area-level QI according to the specification for the condition of interest. Discharges flagged for inclusion in the numerator are assigned a value of “1” for T.

Exclusions

Generally, discharges may be flagged for exclusion from the numerator of an area-level AHRQ QI for one (or more) of several reasons.

1. The outcome of interest is very difficult to prevent, and therefore not an indication of substandard care.
2. The patient was transferred from another health care facility.
3. Some exclusion criteria are included for the purpose of enhancing face validity with clinicians.
4. Some exclusion criteria are an inherent part of the QI definition.

Discharge records that meet one or more of the exclusion criteria in the QI technical specification are assigned a value of “missing (.)” for T.

The Observed Rate

The observed rate of an area-level indicator is simply the sum of T over all records for that area of the country divided by the Census population estimate for the area (adult population for adult measures and child population for pediatric measures). For condition-specific indicators, if the

user requests it, the denominator is the estimated count of persons living in that area of the country who are living with the condition of interest.

Area Rates Stratified by Quarter of the Year

The WinQI software has an option to stratify area-level rates by quarter of the year in which they occurred. When the user selects that option, the rate reported for each quarter is the number of admissions for the condition of interest that occurred during that quarter, divided by the Census population for the area divided by four. The four quarterly rates sum to the annual rate.

Chapter 4. Risk Adjustment for Area-Level Indicators

In order to make meaningful comparisons of the area-level rate for one area with that of another area, it is helpful to account statistically for differences in demographics between areas. To do so for most QIs, the software calculates a risk-adjusted rate which answers the question: What QI rate would we expect to observe in a particular area of the country if the persons living there shared the same demographic profile of a reference population? In statistical language, the risk-adjustment controls for demographic differences via logistic regression.

For area rates, the risk-adjustment models adjust for age-group proportions by gender, and optionally for poverty. That is to say that the models include age (in 5 year groups), gender, and if it is statistically significant, the model includes the interaction between age and gender.

When comparing outcomes from different areas, there may be several reasons for differences in risk-adjusted rates. Some of the most important reasons may be related to the availability of quality preventive and outpatient care, and other reasons may contribute as well, but after risk-adjustment, the differences should not be attributable to differences in the age and gender profiles in the areas.

The AHRQ QI Reference Population

To accomplish risk adjustment, in annual updates of the QI software a **reference population** is analyzed that consists of all HCUP SID data that are available for the year most recently released by AHRQ at the time the QI software is updated. For example when version 5.0 of the QI software was updated in January of 2013 for the May 2013 software release, SID data were available from 2010 from 44 states, so those records serve as the reference population for AHRQ QI software version 5.0.

For area-level indicators, the reference population plays two important roles:

1. The **reference population rate** for each QI is calculated and included in the software to serve as a comparative standard for areas of the country. One can analyze data to determine which areas have higher or lower rates than the overall reference population. The reference population rates are published on the AHRQ QI website in documents named Benchmark Tables (formerly known as Comparative Data Tables). See the [links](#) in the Overview chapter of this document.
2. The **risk adjustment models** are re-estimated on the new reference population dataset in an annual process that is described in [Chapter 11](#) of this document. The models are distributed within the QI software, and they facilitate the calculation of risk-adjusted rates. The risk adjustment model covariates and regression coefficients are published on the AHRQ website. See the [links](#) in the Overview chapter of this document.

Chapter 5. Calculating Area-Level Indicators – Expected, Risk-Adjusted, & Smoothed Rates

In addition to observed rates, three other sets of QI rates are calculated for risk-adjusted area-level indicators.

The Expected Rate

The **expected rate** for an area-level QI is the rate that would be observed if the amount and quality of outpatient and preventive care available across the reference population were available to persons living in this specific area. It is predicted for each area using risk-adjustment model coefficients and covariates that summarize the age and gender distribution of the area's population.

The Risk-Adjusted Rate

The AHRQ QI use indirect standardization to calculate the risk-adjusted rate. The risk-adjusted rate equals the reference population rate multiplied by the ratio of observed rate divided by expected rate.

$$\text{Risk Adjusted Rate} = \text{Reference Population Rate} \times (\text{Observed Rate} / \text{Expected Rate})$$

Note that for the reference population, the observed rate equals the expected rate equals the reference population rate equals the risk-adjusted rate.

The software estimates the standard error of the risk adjusted rate for each area using a method recommended by Iezzoni and described by Hosmer and Lemeshow (1995) that represents the amount of within provider or area variance due to sampling (i.e. as the number of patients per provider or persons per area increases this variance tends to zero). This standard error is used to calculate lower and upper bound 95% confidence intervals around the risk adjusted rate as [risk adjusted rate +/- 1.96 * risk adjusted rate SE] (stored in a data element with a “L” and “U” prefix). (See [Chapter 9](#) section entitled: Computing the Risk-Adjusted Rate Variance. See also http://qualityindicators.ahrq.gov/Downloads/Resources/Publications/2011/Calculating_Confidence_Intervals_for_the_AHRQ_QI.pdf).

The Smoothed Rate

Each area's **smoothed rate** is a weighted average of the risk-adjusted rate and the reference population rate; the smoothed rate is calculated with an empirical Bayes shrinkage estimator to result in a rate near that from the input dataset if the area's rate is estimated in a stable fashion with minimal noise, or to result in a rate near that of the reference population if the rate from the area is unstable and based on noisy data. Thus, the smoothed rate for a hospital with stable estimates will be similar to the hospital's risk adjusted rate, while the smoothed rate for a hospital with unstable estimates will be more similar to the reference population rate.

The formula for the smoothed rate is:

$$\text{Smoothed Rate} = (\text{Risk adjusted Rate} \times \text{Shrinkage Weight}) + \text{Reference Population Rate} * (1 - \text{Shrinkage Weight})$$

where

$$\text{Shrinkage Weight} = \frac{\text{Signal Variance}}{\text{Signal Variance} + \text{Noise Variance}}$$

The noise variance is an estimate of variability in the QI outcome within the area of interest (county), and the signal variance is an estimate of variability across all areas.

$$\begin{aligned} \text{Noise Variance } \hat{\sigma}_a^2 &= \left(\frac{\bar{Y}}{n_a E_a} \right)^2 \sum_{i \in A_a} \hat{Y}_i (1 - \hat{Y}_i) \\ \text{Signal Variance } \hat{\tau}^2 &= \frac{\sum_{a=1}^A \frac{1}{(\hat{\tau}^2 + \sigma_a^2)^2} \{ (RAR_a - \bar{RAR})^2 - \hat{\sigma}_a^2 \}}{\sum_{a=1}^A \frac{1}{(\hat{\tau}^2 + \sigma_a^2)^2}} \end{aligned}$$

where A is the number of areas with persons at risk for the measure, \bar{Y} is the observed rate for the reference population; \hat{Y}_i is the person-level predicted probability for area i ; and for area a , A_a is the collection of persons in the population at risk, n_a is the number of persons, E_a is the expected rate, and RAR_a is the risk-adjusted rate. Note that $\hat{\tau}^2$ appears on both sides of the signal variance equation; it is estimated in an iterative fashion (Morris, 1983).

For purposes of confidence interval estimation, the *smoothed rate* is assumed to follow a Gamma distribution $G(shape, scale)$ where

$$shape = \frac{(\text{Smoothed Rate})^2}{\text{Posterior Variance}}$$

$$scale = \frac{\text{Posterior Variance}}{\text{Smoothed Rate}}$$

$$\text{Posterior Variance} = \text{Signal Variance} - (\text{Shrinkage Weight} * \text{Signal Variance})$$

When there is a fixed comparative rate of interest, it is possible to parameterize the smoothed rate posterior probability based on the Gamma distribution and calculate the probability that the smoothed area rate falls below or above the comparative rate that is of interest.

Chapter 6. Overview of Provider-Level QI & Present-on-Admission (POA)

Provider-level indicators address questions like: Did the patient experience an adverse quality-related event while in the care of a specific healthcare provider? Or did the patient have an inpatient procedure for which there are questions of overuse, underuse, or misuse?

Adverse-event indicators are for medical conditions and procedures that have been shown to have complication/adverse event rates that vary substantially across institutions and for which evidence suggests that high rates may be associated with deficiencies in the quality of care. They usually include only those cases where a secondary diagnosis code flags a potentially preventable complication. A few indicators are based on procedure codes that imply a potential preventable adverse event.

Mortality indicators are for medical conditions and surgical procedures that have been shown to have mortality rates that vary substantially across institutions and for which evidence suggests that high mortality may be associated with deficiencies in the quality of care.

Utilization indicators track procedures where there are questions of overuse, underuse, or misuse. The usage of the procedures being examined varies significantly across hospitals and areas, and high or low rates by themselves do not represent poor quality of care; rather the information is intended to inform consumers about local practice patterns.

Provider-level indicators are measured as rates—number of hospitalizations with the outcome (or procedure) of interest divided by the population at risk for the outcome (or procedure). Recall that area-level indicators each use the same denominator for each area – the Census-derived estimate of the count of persons who live in the area. Provider-level indicators are more complicated because they have **indicator-specific denominators**, to identify only the hospitalizations that were at risk for the outcome of interest.

Recall that area-level indicators all use similar risk-adjustment coefficients: age-groups by gender. But the risk-adjustment models for provider-level measures are more complicated. Each risk-adjusted provider-level indicator uses a customized list of regression covariates that are selected when the QI software is updated annually using methods described in [Chapter 11](#).

Present-on-Admission (POA) status is a third factor that makes provider-level indicators more complex than volume or area-level indicators. Current AHRQ QIs that use POA are listed in [Appendix A](#). Some of the indicators look for adverse conditions that develop as **medical complications** during the hospitalization of interest. Evidence suggests that high rates may be associated with lower quality of care. Think, for instance, of pressure ulcers, which are measured with PSI 03. However, some of these complications may have been present on admission, which would not be related to the quality of inpatient care. The AHRQ QI software uses three methods to distinguish between **complications**, which develop during the hospitalization and should be counted in the QI numerator, and **comorbidities**, which are present on admission and should exclude the discharge record from the QI calculation, because the patient is not at risk for the event. Table 6.1 summarizes those methods, and they are described in more detail in the following

chapters.

Table 6.1 Methods Used by QI Software to Distinguish Complications from Comorbidities

Method	Description	Can the QI User Turn This Off?
1. The POA-Related Exclusion Method (See Chapter 7.)	Some QIs use data elements other than DX_POA to infer that the condition is more likely than not to be POA. Those records are excluded from the population at risk.	No. The WinQI software does not allow modifications to the exclusion criteria. However, the SAS software can be altered by the User, noting that the User should document any modifications to the program.
2. DX_POA Data Element (See Chapter 8.)	If the diagnosis is flagged as POA using the DX_POA data element, then the record is excluded from the population of interest.	Yes. The user can specify %LET USEPOA = 0; in the CONTROL.SAS program or un-check the WinQI box entitled “Use POA in rate calculation”, either of which will cause the software to ignore DX_POA data that are present in the dataset. Every potential complication will be flagged as an adverse event, and if it does not meet any of the exclusion criteria, it will contribute to the QI numerator. For the purposes of risk-adjustment, a set of coefficients will be employed that were estimated ignoring POA; all complications will be treated as comorbidities.

POA Data Element - Background Information

Present-on -Admission was added as a data element to the uniform bill form (UB-04) effective October 1, 2007, and hospitals incurred a payment penalty for not including POA on Medicare records beginning October 1, 2008. Each of the several diagnoses in a discharge record can be flagged as “present at the time the order for inpatient admission occurs”² or not. This is accomplished with data element DX_POAi which uses a one-character text code to characterize the POA status of the diagnosis in DXi. Conditions that develop during an outpatient encounter, including treatment in an emergency department, are considered as present on admission. Most states have adopted POA in the discharge data submitted by hospitals to either the state department of health or the state hospital association.

² <http://www.cdc.gov/nchs/data/icd9/icdguide10.pdf>.

Table 6.2 lists the possible character values of the POA data elements (Y,N,U,W,E, or missing) along with corresponding numeric values (0 or 1) used in the AHRQ QI software. Additional information about the coding guidelines for POA can be found at: www.cdc.gov/nchs/data/icd/icd9cm_guidelines_2011.pdf. Again, current AHRQ QI that use POA are listed in [Appendix A](#).

Table 6.2 Values for the Present-on-Admission Data Element

ICD-9-CM Guidelines	Description	AHRQ QI POA Data Element	Description
Y - Yes	Diagnosis is present at the time of inpatient admission	1	Diagnosis present at admission
N – No	Diagnosis is not present at the time of inpatient admission	0	Diagnosis not present at admission
U - Unknown	Documentation is insufficient to determine if condition is present on admission	0	Diagnosis not present at admission
W – Clinically undetermined	Provider is unable to clinically determine whether condition was present on admission or not	1	Diagnosis present at admission
E - Unreported/Not used; Also includes UB-04 values previously coded as "1"	Reported as exempt from reporting on a non-exempt diagnosis.	0	Diagnosis not present at admission

Source: http://www.cms.hhs.gov/HospitalAcqCond/05_Coding.asp#TopOfPage; http://www.hcup-us.ahrq.gov/db/vars/siddistnote.jsp?var=e_poan.

An individual discharge record might include 20 or more diagnoses. For purposes of the AHRQ QI, the principal diagnosis is always assumed to be present on admission by definition, regardless of the coding of the POA data element in the principal field. Secondary diagnosis codes are first checked to see if the diagnosis is exempt from reporting POA or not. If the secondary diagnosis is exempt, it is considered present on admission. If the secondary diagnosis is not exempt, then it is considered present on admission if the POA data element is coded with a Y or W. Secondary diagnosis codes are considered not present on admission if the POA data element is coded with a N, U, Blank, E, 1, or X. The AHRQ QI software assumes that POA information is present and accurately coded.

Chapter 7. Calculating Provider-Level Observed Rates – Ignoring POA

Provider-level QI calculations are simplest when POA is ignored altogether, so those calculations are described first. Later chapters describe what happens when POA data are present and accounted for, and how the calculations are performed when POA data are missing but modeled. The AHRQ QI software user may ignore the influence of DX_POA data, either present or missing, by specifying “%LET USEPOA = 0;” in the CONTROL.SAS file or by or un-checking the WinQI box entitled “Use POA in rate calculation”.

When ignoring POA, the main difference between area-level indicators and provider-level indicators is the way the denominator is calculated.

Discharge Level Indicator Data Element (T)

Each provider-level observed QI rate consists of a conceptually simple fraction where the denominator is the count of discharge records at risk and the numerator is the count of the records with the outcome of interest. This fraction is calculated using a single discharge level indicator data element, T, described in earlier chapters for volume and area-level indicators. In those earlier chapters, the T variable took on the value “1” if the discharge record met the definition for the numerator that is spelled out in the technical specifications. For volume and area-level indicators it does not matter whether the T variable takes the value “0” or “missing (.)” for other records, because the numerator is simply the count of records where T=1.

Provider-Level Denominator

Discharges are flagged for inclusion in the denominator of each AHRQ QI according to the specification for the population at risk. Discharges flagged for inclusion in the denominator are assigned a value of “0” for T unless the discharge also experienced the outcome of interest in which case the value of “1” is assigned. Discharges that experienced the outcome of interest are in the population at risk by definition.

Denominator Exclusions

Generally, discharges may be flagged for exclusion from the denominator of an AHRQ QI for one (or more) of several reasons.

1. The outcome of interest is more likely than not to be present on admission and conditions that are POA should not “count” as an adverse event.
2. The outcome of interest is very difficult to prevent, and therefore not an indication of substandard care.
3. The exclusion identifies populations who are at very low risk for the adverse event and who are excluded to keep from diluting the QI denominator.

4. Some exclusion criteria are included for the purpose of enhancing face validity with clinicians (e.g., exclude patients from being at risk of a pressure ulcer (PSI 03) if they have not been hospitalized for at least 5 days).
5. Some exclusion criteria are an inherent part of the QI definition (e.g., exclude persons from being at risk for a post-operative hip fracture if the hip repair is the only surgical procedure during the hospitalization).

Discharge records that meet one or more of the denominator exclusion criteria in the QI technical specification are assigned a value of “missing (.)” for T.

Three Values of T

To summarize:

- A “1” in the T variable means that the record was in the population at risk, experienced the outcome of interest, and was not excluded for any reason.
- A “0” in the T variable means the record was in the population at risk, did not experience the outcome of interest, and was not excluded for any reason.
- A “missing (.)” value for the T variable means that the record was not in the population of interest, either because it did not meet the denominator definition, or because it met one or more of the exclusion criteria.

The Observed Rate

For provider-level indicators, the observed rate is simply the arithmetic mean of the T variable over all of the provider’s discharge records.

Consequence of Ignoring POA Data

When POA data are ignored, the observed rate calculation will include records where the outcome of interest was indeed present on admission, and so will inflate the numerator, the denominator, and the observed rate, compared with an **unknown but true underlying rate** that excludes records from population at interest when the outcome was truly POA.

Chapter 8. Calculating Provider-Level Observed Rates – With POA Data

Consideration of POA should improve the accuracy of QI rate calculation because pre-existing comorbidities can be distinguished from complications that develop during the hospital stay of interest. Records with outcomes that were POA will no longer appear erroneously in the numerator, denominator, or observed rate, and the risk adjustment models will no longer erroneously treat complications as comorbidities, thus yielding improvement in the comparative expected, risk-adjusted, and smoothed rates above and beyond that in the numerator, denominator, and observed rates.

The degree of improvement attained when accounting for POA will vary depending on the number of records where the outcomes were POA, and with the accuracy of POA coding. This document does not address the topic of POA accuracy. The QI software treats eligible values in the DX_POA data elements as if they were completely accurate. Values that are ineligible or missing are treated as if they were coded as “not present on admission”. In other words missing or ineligible values lead to a condition being treated as a complication.

Discharge Level POA Exclusion Data Element (Q)

When accounting for POA, the QI software codes the discharge level indicator data element, T, in the same manner described in [Chapter 7](#), using technical specifications to define which records are included in the denominator, numerator, and which should be excluded for one or more reasons. The meaning and possible values of T are described in [Chapter 7](#).

A second, POA-related binary flag is calculated, also. The **discharge level POA exclusion data element** is abbreviated with the letter Q.³ Put simply, Q records whether the outcome of interest was present on admission or not. The outcome of interest is considered present on admission (Q is assigned “1”) if any of the diagnosis codes that define the outcome of interest are coded as present on admission. Otherwise a value of “0” is assigned to Q. For every record that includes POA data in the SID DX_POA data elements, Q will have a value of “0” or “1” and will not be “missing (.)”.

The Observed Rate

Before calculating the observed rate, Q is used to correct the value of T if the condition of interest was POA. If the value of Q is “1” (outcome was POA) then the record is removed from the population at risk by setting T to “missing (.)”. The observed rate is simply the arithmetic mean of the T variable after this correction. Note that if POA had been ignored, as in [Chapter 7](#), every

³ The letter P was not available, having been used already for the notion of population at risk. In this document the variables are denoted simply as T and Q, but each discharge record has a binary T variable and a binary Q variable for each QI, so the variables have longer names to clarify which QI they describe. (e.g., The variables for PSI 08 are called TPPS08 and QPPS08.)

record removed from the population at risk by the Q variable would have appeared as a “1” in both the numerator and the denominator. So accounting for POA data yields lower observed rates than when the POA data are ignored. The magnitude of the difference between the rate estimated when POA are ignored and when POA are incorporated will depend on the proportion of records that are flagged as POA that do not meet any of the other indicator exclusion criterion. The accuracy of the difference between the rate estimated when POA are ignored and the rate estimated when POA are incorporated (via the Q flag) depends both on the magnitude of the difference, and the accuracy of the POA coding.

Chapter 9. Risk Adjustment for Provider-Level Indicators

This chapter describes risk-adjustment for provider-level QIs. Provider-level indicators are risk-adjusted in a manner similar to that described in Chapters [4](#) and [5](#) for area-level indicators. One important difference is that the list of covariates for provider-level indicators differs from indicator to indicator more than those for the area-level indicators. The next section describes the types of data elements that are considered as potential risk-adjusters.

Where possible, the logistic regression models use a generalized estimating equations (GEE) approach to account for correlation at the provider level. When GEE models do not converge during the annual AHRQ QI software update, then multivariable logistic regression models are employed that do not account for that correlation. See [Chapter 11](#) for more details.

Risk-adjustment Covariates

Each risk-adjusted QI (listed in [Appendix A](#)) has a set of covariates that have been identified as useful covariates in a logistic regression risk-adjustment model. [Chapter 11](#) describes the variable selection process.

For the PSIs, covariates indicate whether the discharge record meets the technical specification for gender, age, modified Diagnosis-Related Group (MDRG) and at least one of twenty-five (25) co-morbidities that are used as covariates in the risk-adjustment model.

For the IQIs, covariates indicate whether the discharge record meets the technical specification for gender, age, All Patient Refined Diagnosis Related Groups (APR-DRG) and risk-of-mortality subclass (minor, moderate, major, extreme) that are used as covariates in the risk-adjustment model.

For the PDIs, covariates indicate whether the discharge record meets the technical specification for birth weight, age in days, age in years, modified Diagnosis-Related Group (MDRG), at least one of forty-six (46) clinical classification software (CCS) co-morbidities and some indicator-specific risk categories that are used as covariates in the risk-adjustment model.

Risk Adjustment Parameters CSV File

Each risk-adjusted provider-level indicator has its risk adjustment parameter estimates stored in a comma separated values (.csv) file that accompanies the QI software.

The Expected Rate

Using the risk adjustment parameters, each eligible discharge (i.e. one that is included in the denominator of the indicator) is scored for its expected (or predicted) rate using PROC SCORE.

This output score is simply the sum across all covariates in the risk adjustment model of the scalar multiplication of the presence or absence of a covariate (one or zero) times the value of the coefficient from the risk adjustment model for that covariate. This score is the logit of the predicted value (denoted MHAT in the software). The predicted probability for the discharge is computed as:

$$\text{EHAT} = \exp(\text{MHAT}) / (1 + \exp(\text{MHAT}))$$

The discharge-level predicted probabilities are used to compute an expected rate for the indicator by:

$$\text{Expected Rate} = \frac{\text{Sum of the predicted rates for each discharge}}{\text{Count of discharges in the population at risk}}$$

The Risk-Adjusted Rate

The AHRQ QI use indirect standardization to calculate the risk-adjusted rate.

$$\text{Risk adjusted Rate} = \text{Reference Population} \times (\text{Observed Rate} / \text{Expected Rate})$$

Note that for the reference population, the observed rate, the expected rate, the reference population rate, and the risk-adjusted rate are equivalent.

The software estimates the standard error of the risk adjusted rate for each provider or area using a method recommended by Iezzoni and described by Hosmer and Lemeshow that represents the amount of within provider or area variance due to sampling (i.e. as the number of patients per provider or persons per area increases this variance tends to zero). This standard error is used to calculate lower and upper bound 95% confidence intervals around the risk adjusted rate as [risk adjusted rate +/- 1.96 * risk adjusted rate SE] (stored in a data element with a “L” and “U” prefix). (See the note below entitled: Computing the Risk-Adjusted Rate Variance. See also http://qualityindicators.ahrq.gov/Downloads/Resources/Publications/2011/Calculating_Confidence_Intervals_for_the_AHRQ_QI.pdf).

The Smoothed Rate

The formula for the smoothed rate is:

$$\begin{aligned} \text{Smoothed Rate} = & (\text{Risk Adjusted Rate} \times \text{Shrinkage Weight}) \\ & + \text{Reference Population Rate} \times (1 - \text{Shrinkage Weight}) \end{aligned}$$

where

$$\text{Shrinkage Weight} = \frac{\text{Signal Variance}}{\text{Signal Variance} + \text{Noise Variance}}$$

The noise variance is calculated for each hospital based on the user’s data. The signal variance is a

parameter calculated from the reference population. Beginning in Version 4.3, there are two signal variance estimates: one using POA and one ignoring POA data.

$$\begin{aligned} \text{Noise Variance } \hat{\sigma}_h^2 &= \left(\frac{\bar{Y}}{n_h E_h} \right)^2 \sum_{i \in A_h} \hat{Y}_i (1 - \hat{Y}_i) \\ \text{Signal Variance } \hat{\tau}^2 &= \frac{\sum_{h=1}^H \frac{1}{(\hat{\tau}^2 + \sigma_h^2)^2} \{ (RAR_h - \overline{RAR})^2 - \hat{\sigma}_h^2 \}}{\sum_{h=1}^H \frac{1}{(\hat{\tau}^2 + \sigma_h^2)^2}} \end{aligned}$$

where H is the number of hospitals with patients at risk for the QI, \bar{Y} is the observed rate for all discharges in the reference population; \hat{Y}_i is the patient-level predicted probability; and for hospital h , A_h is the collection of patients, n_h is the number of patients, E_h is the expected rate, and RAR_h is the risk-adjusted rate. Note that $\hat{\tau}^2$ appears on both sides of the signal variance equation; it is estimated in an iterative fashion (Morris, 1983).

For purposes of confidence interval estimation, the smoothed rate is assumed to follow a Gamma distribution $G(shape, scale)$ where

$$\begin{aligned} shape &= \frac{(\text{Smoothed Rate})^2}{\text{Posterior Variance}} \\ scale &= \frac{\text{Posterior Variance}}{\text{Smoothed Rate}} \end{aligned}$$

$$\text{Posterior Variance} = \text{Signal Variance} - (\text{Shrinkage Weight} * \text{Signal Variance})$$

When there is a fixed comparative rate of interest, it is possible to parameterize the smoothed rate posterior probability based on the Gamma distribution and calculate the probability that the smoothed area rate falls below or above the comparative rate that is of interest.

Computing the Risk-Adjusted Rate Variance

Let

- Y_i be the observed (0, 1) outcome for patient i
- E_i be the expected (predicted) rate;
- n_h be the number of discharges at hospital h ; and
- α be the reference population rate (average outcome in the entire sample).

We define the observed rate at hospital h as

$$O_h = \frac{1}{n_h} \sum_{i=1}^{n_h} Y_i$$

the expected rate at hospital h as

$$E_h = \frac{1}{n_h} \sum_{i=1}^{n_h} E_i$$

and the Risk Adjusted Rate

$$RAR_h = \alpha \times \frac{O_h}{E_h}$$

Using a Taylor expansion for the formula for the variance of the ratio of two stochastic variables R, S (delta method)

$$Var\left(\frac{R}{S}\right) \cong \frac{E[R]^2}{E[S]^2} \left(\frac{Var(R)}{E[R]^2} - 2 \frac{Cov(R, S)}{E[R]E[S]} + \frac{Var(S)}{E[S]^2} \right)$$

We compute the variance on the risk-adjusted rate

$$Var(RAR_h) \cong \alpha^2 \frac{E[O_h]^2}{E_h^2} \left(\frac{Var(O_h)}{E[O_h]^2} - 2 \frac{Cov(O_h, E_h)}{E[O_h]E_h} + \frac{Var(E_h)}{E_h^2} \right)$$

It is common practice in these calculations to neglect the variance of the predictor E_h (Hosmer & Lemeshow, 1995) and to consider a normal distribution for the Risk Adjusted Rate (only true in the limit $n_h \rightarrow \infty$). In this case the above formula simplifies to

$$Var(RAR_h) \cong \alpha^2 \frac{Var(O_h)}{E_h^2}$$

and the 95% confidence intervals are calculated assuming normality. However, arguments to support using non-approximate equations (see Luft & Brown, 1993 for an example) for the RAR confidence intervals (in particular when n_h is small) may be considered in future releases of the AHRQ QI software.

Computing the Smoothed Rate Variance

The detailed formula for calculating the probability interval around the smoothed rate is described in [Chapter 10](#) on composite measures. Calculation of the smoothed rate is a step in the process of computing the composite measures. However, the basic formula is:

$$\text{Smoothed Rate} = (\text{Risk Adjusted Rate} \times \text{Shrinkage Weight})$$

$$+ \text{Reference Population Rate} \times (1 - \text{Shrinkage Weight})$$

$$\text{Shrinkage Weight} = \frac{\text{Signal Variance}}{\text{Signal Variance} + \text{Noise Variance}}$$

$$\text{Posterior Variance} = \text{Signal Variance} - (\text{Shrinkage Weight} \times \text{Signal Variance})$$

The *smoothed rate* follows a Gamma distribution $G(shape, scale)$ where

$$shape = \frac{(Smoothed\ Rate)^2}{Posterior\ Variance}$$

$$scale = \frac{Posterior\ Variance}{Smoothed\ Rate}$$

When there is a fixed comparative rate of interest, it is possible to parameterize the posterior probability based on the Gamma distribution and calculate the probability that the smoothed area rate falls below or above the comparative rate that is of interest.

Chapter 10. Estimating Composite Measures

The general methodology for the AHRQ QI **composite measures** might be described as constructing a “composite of composites.” The first “composite” is the reliability-adjusted ratio, which is a weighted average of the risk-adjusted ratio and the reference population ratio, where the weight is determined empirically as described below. The second “composite” is a weighted average of the component indicators, where the weights are selected based on the intended use of the composite measure. These weights might be determined empirically or based on non-empirical considerations.

Composite Value

The basic steps for computing the composite are as follows:

Step 1. Compute the risk-adjusted rate and confidence interval

The AHRQ QI risk-adjusted rate and confidence interval are computed as described above.

Step 2. Scale the risk-adjusted rate using the reference population

The levels of the rates vary from indicator to indicator. To combine the component indicators using a common scale, each indicator’s risk-adjusted rate is first divided by the reference population rate to yield a ratio. The components of the composite are therefore defined in terms of a ratio to the reference population rate for each indicator. The component indicators are scaled by the reference population rate so that each indicator reflects the degree of deviation from the overall average performance.

Step 3. Compute the reliability-adjusted ratio

The reliability-adjusted ratio is computed as the weighted average of the risk-adjusted ratio and the reference population ratio, where the weights vary from 0 to 1, depending on the degree of reliability for the indicator and provider (or other unit of analysis).

$$\begin{aligned} & \text{Reliability Adjusted Ratio (risk – adjusted ratio} \times \text{weight)} \\ & + \text{reference population ratio} \times (1 - \text{weight}) \end{aligned}$$

For small providers, the weight is closer to 0. For large providers, the weight is closer to 1. For a given provider, if the denominator is 0, then the weight assigned is 0 (i.e., the reliability-adjusted ratio is the reference population ratio).

Step 4. Select the component weights

The composite measure is the weighted average of the scaled and reliability-adjusted ratios for the component indicators. The AHRQ QI software user has the ability to modify these weights in the software, either in the SAS code, or in the WinQI user interface. Options for weights include:

Single indicator weight. In this case, the composite is simply the reliability-adjusted ratio for a

single indicator. The reference population rate is the same among all providers.

Equal weight. In this case, each component indicator is assigned an identical weight based on the number of indicators. That is, the weight equals 1 divided by the number of indicators in the composite (e.g., $1/11 = 0.0909$).

Numerator weight. A numerator weight is based on the relative frequency of the numerator for each component indicator in the reference population. In general, a numerator weight reflects the amount of harm in the outcome of interest, in this case a potentially preventable adverse event. One might also use weights that reflect the amount of excess mortality or complications associated with the adverse event, or the amount of confidence one has in identifying events (i.e., the positive predictive value).

Denominator weight. A denominator weight is based on the relative frequency of the denominator for each component indicator in the reference population. In general, a denominator weight reflects the degree of risk of experiencing the outcome of interest in a given population. For example, the denominator weight might be based on the demographic composition of a health plan, the employees of a purchaser, a state, an individual hospital, or a single patient.

Factor weight. A factor weight is based on an analysis that assigns each component indicator a weight that reflects the contribution of that indicator to the common variation among the indicators. The component indicator that is most predictive of that common variation is assigned the highest weight. The weights for each composite are based on a principal components factor analysis of the reliability-adjusted ratios.

Note: The IQI composites (IQI 90 and 91) use denominator weights and the PSI and PDI composites (PSI 90 and PDI 19) use numerator weights.

Step 5. Construct the composite measure

The composite measure is the weighted average of the component indicators using the selected weights and the scaled and reliability-adjusted indicators.

$$\begin{aligned} \text{Composite} = & (\text{indicator}_1 \text{RAR} \times \text{weight}_1) \\ & + (\text{indicator}_2 \text{RAR} \times \text{weight}_2) + \cdots + (\text{indicator}_N \text{RAR} \times \text{weight}_N) \end{aligned}$$

Composite Variance

The probability interval of the composite measure is based on its standard error, which is the square root of the variance. The variance is computed based on the signal variance-covariance matrix and the reliability weights.

Let M be a $1 \times K$ vector of observed quality measures (for a given hospital, suppress hospital subscript for convenience), noisy measures of the true underlying $1 \times K$ quality vector μ , such that:

$$M = \mu + \epsilon \quad (11.1)$$

where ϵ is a $1 \times K$ noise vector with zero mean and $K \times K$ variance-covariance matrix $\text{Var}(\epsilon) =$

Ω_ϵ . Let the $K \times K$ signal variance-covariance be $\text{Var}(\mu) = \Omega_\mu$.

Let $\hat{\mu}$ a $1 \times K$ vector indicating the posterior (filtered) estimate of μ , such that:

$$\hat{\mu} = \mu + v \quad (11.2)$$

where v is a $1 \times K$ vector with zero mean and $K \times K$ variance-covariance matrix $\text{Var}(v)$ representing the prediction error of the posterior estimates.

The goal is to estimate the variance for any weighted average of the posterior estimates. For a given $1 \times K$ weighting vector w , this is given by:

$$\text{Var}(vw) = w' \text{Var}(v) w$$

where w' indicates the transpose of w .

Thus, we need an estimate of $\text{Var}(v)$. We simplify the calculation by assuming that the filtered estimates are formed in isolation for each measure (univariate) and the estimation error is assumed not correlated across measures (e.g., each measure is based on a different sample of patients or independent patient outcomes).

Forming each measure in isolation, using superscripts $k = 1, \dots, K$ to indicate the measure, we have:

$$\begin{aligned} \hat{u}^k &= M^k \hat{\beta}^k = M^k (\Omega_\mu^{kk} + \Omega_\epsilon^{kk})^{-1} \Omega_\mu^{kk} \\ \text{Var}(v^k) &= \Omega_\mu^{kk} (1 - \hat{\beta}^k) = \Omega_\mu^{kk} - \Omega_\mu^{kk} (\Omega_\mu^{kk} + \Omega_\epsilon^{kk})^{-1} \Omega_\mu^{kk} \end{aligned}$$

where

$$\hat{\beta}^k = (\Omega_\mu^{kk} + \Omega_\epsilon^{kk})^{-1} \Omega_\mu^{kk}$$

is the signal ratio of measure k , the reliability of the measure, and is the r-squared which measures how much of the variation in the true measure can be explained with the filtered measure. Note that in this simplified case the filtered estimate is a univariate shrinkage estimator. For the non-diagonal elements of the covariance matrix (for $j \neq k$):

$$\text{Cov}(v^j, v^k) = E[(\mu^j - \hat{\mu}^j)(\mu^k - \hat{\mu}^k)]$$

assuming independent estimation error in the two measures, one gets the following simplified expression (see supplemental notes below for the derivation):

$$\text{Cov}(v^j, v^k) = \Omega_\mu^{jk} [(1 - \hat{\beta}^j)(1 - \hat{\beta}^k)]$$

Note that this is just the signal covariance times 1 minus the signal ratio for each of the measures. Thus, if the signal ratio is 0 for each measure, the covariance in the estimates is simply the signal covariance. As either measure gets a stronger signal ratio (becomes more precise), the covariance in the estimates shrinks to 0.

Also note that if one measure is missing, then the signal ratio is simply set to 0. The filtered estimate is shrunk all the way back to the (conditional) mean, and the variance and covariance are as defined above.

The standard error on the composite is the square root of the variance, which is then used to compute the 95% probability interval.

The composite value to follows a Gamma distribution $G(\text{shape}, \text{scale})$ where

$$\text{shape} = \frac{(\text{Composite Value})^2}{\text{Posterior Variance}}$$
$$\text{scale} = \frac{\text{Posterior Variance}}{\text{Composite Value}}$$

A 95% probability interval can be calculated using the inverse CDF of the gamma distribution as

$$\text{lowerbound} = \text{inv_cdf_gamma}(0.025, \text{shape}, \text{scale})$$

$$\text{lowerbound} = \text{inv_cdf_gamma}(0.975, \text{shape}, \text{scale})$$

Supplemental Notes:

To derive formula (11.6), we substitute

$$\hat{\mu} = M\hat{\beta} = (\mu + \epsilon)\hat{\beta}$$

into (11.5) and obtain (for $j \neq k$)

$$\begin{aligned} Cov(v^j, v^k) &= E[(\mu^j - (\mu^j + \epsilon^j)\hat{\beta}^j)(\mu^k - (\mu^k + \epsilon^k)\hat{\beta}^k)] = \\ &= E[(\mu^j(1 - \hat{\beta}^j) - \epsilon^j\hat{\beta}^j)(\mu^k(1 - \hat{\beta}^k) - \epsilon^k\hat{\beta}^k)] = \\ &= E[\mu^j\mu^k(1 - \hat{\beta}^j)(1 - \hat{\beta}^k) + \mu^k\epsilon^j(1 - \hat{\beta}^k)\hat{\beta}^j + \mu^j\epsilon^k(1 - \hat{\beta}^j)\hat{\beta}^k + \epsilon^j\epsilon^k\hat{\beta}^j\hat{\beta}^k] = \\ &= E[\mu^j\mu^k](1 - \hat{\beta}^j)(1 - \hat{\beta}^k) + E[\mu^k\epsilon^j](1 - \hat{\beta}^k)\hat{\beta}^j + E[\mu^j\epsilon^k](1 - \hat{\beta}^j)\hat{\beta}^k + E[\epsilon^j\epsilon^k]\hat{\beta}^j\hat{\beta}^k \end{aligned}$$

Assuming $E[\mu^j\mu^k] = E[\epsilon^j\mu^k] = E[\epsilon^j\epsilon^k] = 0$ and $E[\mu] = 0$, we have

$$\begin{aligned} Cov(v^j, v^k) &= E[\mu^j\mu^k](1 - \hat{\beta}^j)(1 - \hat{\beta}^k) = \\ &= Cov(\mu^j, \mu^k)(1 - \hat{\beta}^j)(1 - \hat{\beta}^k) - E[\mu^j]E[\mu^k](1 - \hat{\beta}^j)(1 - \hat{\beta}^k) = \\ &= Cov(\mu^j, \mu^k)(1 - \hat{\beta}^j)(1 - \hat{\beta}^k). \end{aligned}$$

QED.

Chapter 11. Software Maintenance – Updating the Reference Population

In order to maintain the scientific acceptability of the AHRQ QI, the indicators are updated annually to reflect the Uniform Bill (UB-04) coding updates effective each year on July 1st, and the International Classification of Diseases- Ninth Revision- Clinical Modification (ICD-9-CM) and Medicare Severity Diagnosis-related Group (MS-DRG) coding updates effective each fiscal year on October 1st of the prior year. In addition, the annual updates include new Census data on the population of counties and new Healthcare Cost and Utilization Project (HCUP) data for the reference population and risk-adjustment covariate coefficients. This chapter describes the methods employed to update the QI reference population and the associated risk-adjustment covariate coefficients.

For the version 5.0 release (May, 2015), the AHRQ QI program used the Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID) for 2012 to compute reference population data. HCUP is a family of health care databases and related software tools and products developed through a Federal-State-Industry partnership and sponsored by the Agency for Healthcare Research and Quality (AHRQ). HCUP databases bring together the data collection efforts of State data organizations, hospital associations, private data organizations, and the Federal government to create a national information resource of encounter-level health care data. HCUP includes the largest collection of longitudinal hospital care data in the United States, with all-payer, encounter-level information beginning in 1988. These databases enable research on a broad range of health policy issues, including cost and quality of health services, medical practice patterns, access to health care programs, and outcomes of treatments at the national, State, and local market levels. The HCUP SID encompass about 97 percent of all annual inpatient discharges in the United States.

The reference population file was limited to community hospitals, excluding rehabilitation and long-term acute care hospitals. Information on the type of hospital was obtained by the American Hospital Association (AHA) Annual Survey of Hospitals. AHA defines community hospitals as "all non-Federal, short-term, general, and other specialty hospitals, excluding hospital units of institutions." Included among community hospitals are specialty hospitals such as obstetrics-gynecology, ear-nose-throat, orthopedic, and pediatric institutions. Also included are public hospitals and academic medical centers.

The 2012 HCUP State Inpatient Databases (SID) includes information on all inpatient discharges from hospitals in 45 participating States (excluding Mississippi and New Hampshire). In 2012, 36 of the SID include indicators of the diagnoses being present on admission (POA) and included the PRDAY data element. Edit checks on POA were developed during a HCUP task that examined POA coding in the 2011 SID at hospitals that were required to report POA to CMS. The edits identify general patterns of suspect reporting of POA. The edits do not evaluate whether a valid POA value (e.g., Y or N) is appropriate for the specific diagnosis. There are three hospital-level edit checks:

1. Indication that a hospital has POA reported as Y on all diagnoses on all discharges
2. Indication that a hospital has POA reported as missing on all non-Medicare discharges

3. Indication that a hospital reported POA as missing on all nonexempt diagnoses for 15 percent or more of discharges. The cut-point of 15 percent was determined by 2 times the standard deviation plus the mean of the percentage for hospitals required to report POA to CMS.

There are several important steps in the annual update process upstream from risk-adjustment and rate estimation. Changes may be made to QI technical specifications for one reason or another. Those must be implemented in the software. ICD-9 (and soon ICD-10) code sets may be modified. Those need to be updated in the software as well. The software is designed to be backward compatible, applying the appropriate sets of codes to older datasets. This work is accomplished before risk-adjustment models are calculated. Those steps are described briefly in [Appendix C](#).

Estimating risk-adjustment models and calculating QI rates in the reference population involves running the QI software on the reference population dataset.

Assemble the Reference Population Dataset

The user should prepare the input dataset according to the software instructions.

- SID data from all available states are appended together and processed in the manner described in [Chapter 1](#).
- The APR-DRG grouper is run on the adult dataset for the purpose of calculating IQIs. The grouper is run once considering all secondary diagnoses to be POA, and run a second time with POA diagnoses removed. This difference captures the fact that when POA is ignored, complications are treated like comorbidities for risk adjustment, and the risk of mortality is probably overstated compared to the risk if the patient were classified using only the conditions that were truly present on admission.
- Beginning with version 5.0, sex not assumed to be male if the value is missing. In versions of the QI software before 5.0, missing values of SEX are set to “0” (Male) so they will not be dropped by the QI software.
- Beginning in Version 4.3, discharges from non-community hospitals are deleted from the adult and pediatric analysis data. Community hospitals, as defined by American Hospital Association (AHA), include "all nonfederal, short-term, general and other specialty hospitals, excluding hospital units of institutions." Included among community hospitals are academic medical centers and specialty hospitals such as obstetrics, gynecology, ear nose throat, short-term rehabilitation, orthopedic, and pediatric hospitals. Non- community hospitals include federal hospitals (Veterans Administration, Department of Defense, and Indian Health Service hospitals), long-term hospitals, psychiatric hospitals, alcohol/chemical dependency treatment facilities and hospitals units within institutions such as prisons. (See http://hcup-us.ahrq.gov/db/state/siddist/siddist_hospital.jsp#2008).
- No other edits are applied to the State Inpatient Databases (SID).

Calculate Discharge Level Flags

The discharge level T and Q flags are calculated as described in Chapters 3-8.

Estimate Risk-adjustment Models

There are several steps involved in estimating the QI risk-adjustment models.

1. Construct candidate covariates
2. Select model covariates
3. Estimate the models
4. Evaluate the models

Construct Candidate Covariates for Risk-adjustment

Models for version 5.0 of the software were unchanged from version 4.5(a).

For the PSIs, potential risk-adjustment covariates indicate whether the discharge record meets the technical specification for gender, age, modified Diagnosis-Related Group (MDRG) and at least one of twenty-five (25) co-morbidities that are used as covariates in the risk-adjustment model.

For the IQIs, potential risk-adjustment covariates indicate whether the discharge record meets the technical specification for gender, age, All Patient Refined Diagnosis Related Groups (APR- DRG) and risk-of-mortality subclass (minor, moderate, major, extreme) that are used as covariates in the risk-adjustment model.

For the PDIs, potential risk-adjustment covariates indicate whether the discharge record meets the technical specification for birth weight, age in days, age in years, modified Diagnosis-Related Group (MDRG), at least one of forty-six (46) clinical classification software (CCS) co- morbidities and some indicator-specific risk categories that are used as covariates in the risk- adjustment model.

For the PQIs, potential risk-adjustment indicate whether the discharge record meets the technical specification for gender, age in 5-year groups and poverty category that are used as covariates in the risk-adjustment model.

Covariates are coded for each discharge record based on the data elements, data values, and logic described in the technical specifications and the appendices of the risk-adjustment coefficient tables. For a given covariate, if the discharge meets the technical specification for that covariate a value of “1” is assigned to the discharge level covariate data element. Otherwise a value of “0” is assigned to the discharge level covariate data element. For discharge records with POA data, the software creates a second set of data elements (i.e., the **Z** data elements used in the modeling described in [Appendix C](#)) that do not consider secondary diagnosis codes that are not present on admission when assigning comorbidity or risk-of-mortality flags.

Select Model Covariates

For the provider level indicators, each module has a standard set of covariates grouped into four categories: demographics, severity of illness, comorbidities and other (see [Appendix B](#)). The standard set is tailored to each indicator to create a parsimonious set of covariates for each indicator. Based on cross tabulations between each covariate and the outcome of interest, only those covariates with at least 30 cases with the outcome of interest are retained. For categories that

are mutually exclusive, covariates with fewer than 30 cases are pooled into the next covariate along the risk gradient. For example, age 70 to 74 is combined with age 65 to 69, or risk of mortality subclass 3 is combined with subclass 2. For categories with no risk gradient, covariates are pooled into broader covariates. For example, MS-DRGs are pooled into MDCs.

The omitted covariate within mutually exclusive categories is the reference group for those categories. Reference categories are usually 1) the most common and/or 2) the least risk. The choice of omitted reference category does affect how one might use the model coefficients or odds ratios in an English language sentence, but it does not affect predicted probabilities or model performance.

Once the preliminary multivariable model is specified, it is estimated on the adult or pediatric analytic data, as appropriate. Only those covariates that are statistically significant ($p < .05$) are retained. For covariates that are not statistically significant in categories that are mutually exclusive, the pooling process described above is repeated until a complete, parsimonious model is specified.

For the area level indicators, the models use the complete set of covariates for gender, age in 5-year age groups, an interaction with gender * age. There is also an optional set of covariates for poverty category based on the county of patient residence.

The final multivariable model parameters are published on the AHRQ website in Risk Adjustment Coefficient Tables. (See [links](#) in the Overview chapter.)

Estimate the Models

When possible, provider-level models are estimated using generalized estimating equations (GEE) to account for within-hospital correlation. These models are run with PROC GENMOC and use a logit link with an exchangeable covariance matrix. If the GEE model does not converge then a more logistic regression model is fit (i.e. PROC LOGISTIC) that ignores that extra correlation. Whether the model is a GEE or not may be inferred by the final column in the .CSV file for the QI. Area-level indicators use logistic models. Each provider-level module includes a sas program named like *QI50_MakeVars_PSI.sas* (e.g. for the PSI module in version 5.0) that contains a set of macros to construct the covariate set for the risk adjustment model. These covariates are passed as list of variables with the names XCV1 – XCV n , with the set of variables changing from indicator to indicator.

Calculate Rates

After the new risk-adjustment models are fit, PROC SCORE is run on the data to calculate expected values so that observed rates may be calculated for the reference population. Reference population rates and signal variances are calculated both ignoring POA altogether and with POA as recorded. These rates are stored in .TXT files that are part of the SAS AHRQ QI software package. The rates and variances are entered directly into WinQI program code, and do not appear as separate files in the WinQI package. Updating the risk-adjustment .CSV files and the population rate and signal variance .TXT files are a substantial milestone in the annual update process.

Update Software

In addition to the aforementioned .CSV and .TXT files, the AHRQ QI software must be updated to generate and combine the correct set of covariate variables for each risk adjusted QI. These covariates are generated in the so-called ~SAS3.SAS programs, and whenever the list of covariates in a risk-adjustment model changes, that code must be changed accordingly. Note that it is possible to fit new risk-adjustment model coefficients without updating the list of covariates. In that case, the ~SAS3.SAS program may need very little revision, if any.

Evaluate Models

Two desirable qualities of risk-adjustment models are that they discriminate well between discharge records that experience the outcome of interest and those that do not, and that they be well calibrated, predicting that the outcome will occur in approximately the right proportions, over a wide range of predicted probability.

Discrimination

One common scalar measure of logistic regression discrimination is the c-statistic. This may be calculated by computing the area under the Receiver Operating Characteristic (ROC) curve. Alternatively, it may be calculated by forming every possible pair in a dataset where one member of the pair is a discharge with the outcome of interest and the other member is a discharge without the outcome of interest. The c-statistic is the proportion of such pairs where the predicted probability for the member with the outcome of interest is higher than the predicted probability for the other record. Pairs with tied probabilities each contribute one-half to the numerator and denominator of the proportion. A c-statistic of 0.5 is the same discrimination performance as flipping a coin. A c-statistic of 1.0 indicates perfect discrimination. Hosmer and Lemeshow (2000, p.162) have coined three widely adopted labels for discrimination performance based on the c-statistic:

- $0.70 \leq \text{c-statistic} < 0.80$ indicates **acceptable discrimination**
- $0.80 \leq \text{c-statistic} < 0.90$ indicates **excellent discrimination**
- $0.90 \leq \text{c-statistic}$ indicates **outstanding discrimination**

The c-statistics for the AHRQ QI risk-adjustment models are published in on the AHRQ QI website in the Risk Adjustment Coefficient Tables. (See [links](#) in the Overview chapter.)

Calibration

Calibration is often described by sorting the dataset based on predicted probability and dividing it into deciles of risk. It is meaningful to compare the proportion of records in each decile that were observed to have the outcome of interest with the proportion of records that are expected to have that outcome. Hosmer and Lemeshow's logistic regression goodness-of-fit statistic (1980) is based on a chi-square test statistic calculated using the observed and expected counts across the ten deciles. Unfortunately that statistic always rejects the null hypothesis good calibration when the number of observations is large, as is the case with the AHRQ QI reference population. Although the test statistic and its p-value are not informative for these models, the models are sometimes characterized by publishing or plotting the observed and expected counts in the ten deciles of risk.

Chapter 12. Software Maintenance – Other Updates

The AHRQ QI software uses several other files or datasets that are updated periodically. This chapter lists those, and either describes the methods used to generate them, or references other stand-alone documents that do so.

Population Reference File

The file that contains stratified population counts by county and metropolitan statistical area is crucial for calculating the denominators of the area-level measures. That file and the method to construct it are described in a file entitled *AHRQ QI Population File Documentation* on the AHRQ website: (<http://www.qualityindicators.ahrq.gov/software/SAS.aspx>)

Condition-Specific Population File

The AHRQ QI program includes ongoing research into options for estimating condition-specific denominators. At this time, the only condition-specific denominators are related to diabetes. There is a file name QICTYC14.TXT that is included with the v5.0 AHRQ PQI module. That file was calculated using the following steps:

1. Use the census population denominator reference file to estimate 2014 population for each combination of state and age category. In the QI software, age categories are coded as:

VALUE AGECCAT

0 = '00 to 17'

1 = '18 to 44'

2 = '45 to 64'

3 = '65 to 74'

4 = '75+'

2. Obtain the latest diabetes prevalence figures broken out by state and age category from the Centers for Disease Control at <http://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html>
3. Apply the diabetes proportions to the populations, to estimate the number of adults in each state in each of the four age categories who would have diabetes in 2014. (Population data from 2014 and proportion data from 2012.)

References

Dempster AP; Laird NM; Rubin DB (1977). Maximum Likelihood from Incomplete Data via the EM Algorithm. *Journal of the Royal Statistical Society, Series B (Methodological)* 39 (1):1–38.

Dimick JB, Staiger DO, Birkmeyer JD. (2006) Are Mortality Rates for Different Operations Related? Implications for measuring the quality of noncardiac surgery. *Med Care* Aug;44(8):774-8

Fitzmaurice GM, Laird NM and Ware JH. *Applied Longitudinal Analysis*. John Wiley & Sons, Inc., Thirteenth edition, 2004.

Hammersley JM & Handscomb DC, (1964) *Monte Carlo Methods*. Methuen & Co Ltd, London. Hosmer DW & Lemeshow S. (2000) *Applied Logistic Regression*, 2nd ed., Wiley, Inc., New York.

Hosmer DW & Lemeshow S. (1980) A goodness-of-fit test for the multiple logistic regression model. *Communications in Statistics*, A10, 1043-1069.

Hosmer DW & Lemeshow S. (1995). Confidence interval estimates of an index of quality performance based on logistic regression. *Statistics in Medicine*, Vol 14, Issue 19, 2161-2172

Iezzoni, Lisa, ed. (2013) *Risk Adjustment for Measuring Health Care Outcomes*, 4th ed. Health Administration Press, Chicago.

Liang KY & Zeger SL. Longitudinal Data Analysis Using Generalized Linear Models. *Biometrika*, 73(1):13-22, April 1986

Little RJA & Rubin DB (2002). *Statistical Analysis with Missing Data*. Wiley, Hoboken, NJ. Luft, HS & Brown, BW Jr. (1993). Calculating the Probability of Rare Events: Why Settle for an Approximation? *Health Services Research* 28:4, 419-439

McClellan M & Staiger D. (1999) The quality of health care providers. Cambridge, MA: National Bureau of Economic Research. NBER Working Paper #7327. Available at: <http://www.nber.org/papers/w7327>.

Morris, CN (1983) Parametric Empirical Bayes Inference: Theory and Applications, *Journal of the American Statistical Association*, Vol. 78, No. 381 (Mar., 1983), pp. 47-55.

Press WH., Teukolsky SA, Vetterling WT, Flannery BP, (1992) *Numerical recipes in C (2nd ed.)*: the art of scientific computing. Cambridge University Press New York, NY, USA.

Robert CP & Casella G. (2004). *Monte Carlo Statistical Methods*, 2nd Ed. Springer, New York, NY.

Ripley BD, (1987) *Stochastic Simulation*. New York: Wiley & Sons, NY

Rubinstein BY, (1981) *Simulation and the Monte Carlo Method*. Wiley & Sons., NY

Zeger SL & Liang KY. Longitudinal Data Analysis for Discrete and Continuous Outcomes. *Biometrics*, 42(1):121-130, March 1986.

Appendix A. Table of AHRQ QI Risk-adjustment / POA

Appendix Table A.1 denotes which AHRQ QI are risk-adjusted and which use POA data and for what purpose (i.e., for technical specifications or risk-adjustment).

An entry of ‘X’ in the column entitled ‘Calculate Risk Adjusted Rate’ means that the indicator is risk adjusted using PROC SCORE in SAS with coefficients from the risk-adjustment models estimated using GEE or LOGISTIC models.

An X in the column marked ‘Technical Specifications’ means that the indicator has an exclusion that explicitly references the POA data element. A QI software user may tell the software to ignore the DX_POA data element for purposes of risk-adjustment, but the software will never ignore DX_POA if it is referenced in the technical specifications for the purpose of defining exclusions, and if the data element is present in the discharge record. When a discharge record is missing the DX_POA data element, the Q flag will be set to “missing (.)” and the software will ignore it

An X in the column marked ‘Risk Adjustment’ means that the risk adjustment logistic regression model includes covariates for conditions that are comorbidities if they are POA and are complications if they are not POA. When the discharge record is missing the DX_POA data element, the risk adjustment model will treat the condition as if it was a complication that was not POA.

See [Chapter 9](#) for additional details on risk adjustment.

Appendix Table A.1. AHRQ QI Risk-adjustment and Uses of POA

Inpatient Quality Indicators (IQIs)	Calculate Risk-adjusted Rate	Use POA?	
		Technical Specifications	Risk-adjustment
IQI 01 - Esophageal Resection Volume			
IQI 02 - Pancreatic Resection Volume			
IQI 04 - Abdominal Aortic Aneurysm (AAA) Repair Volume			
IQI 05 - Coronary Artery Bypass Graft (CABG) Volume			
IQI 06 - Percutaneous Coronary Intervention (PCI) Volume			
IQI 07 - Carotid Endarterectomy Volume			
IQI 08 - Esophageal Resection Mortality Rate			X
IQI 09 - Pancreatic Resection Mortality Rate	X		X
IQI 11 - AAA Repair Mortality Rate	X		X
IQI 12 - CABG Mortality Rate	X		X
IQI 13 - Craniotomy Mortality Rate	X		X

IQI 14 - Hip Replacement Mortality Rate	X		X
IQI 15 - Acute Myocardial Infarction (AMI) Mortality Rate	X		X
IQI 16 - Heart Failure Mortality Rate	X		X
IQI 17 - Acute Stroke Mortality Rate	X		X
IQI 18 - Gastrointestinal Hemorrhage Mortality Rate	X		X
IQI 19 - Hip Fracture Mortality Rate	X		X
IQI 20 - Pneumonia Mortality Rate	X		X
IQI 21 - Cesarean Delivery Rate, Uncomplicated			
IQI 22 - Vaginal Birth After Cesarean (VBAC) Delivery Rate, Uncomplicated			
IQI 23 - Laparoscopic Cholecystectomy Rate			
IQI 24 - Incidental Appendectomy in the Elderly Rate			
IQI 25 - Bi-lateral Cardiac Catheterization Rate			
IQI 26 - Coronary Artery Bypass Graft (CABG) Rate	X		
IQI 27 - Percutaneous Coronary Intervention (PCI) Rate	X		
IQI 28 - Hysterectomy Rate	X		
IQI 29 - Laminectomy or Spinal Fusion Rate	X		
IQI 30 - Percutaneous Coronary Intervention (PCI) Mortality Rate	X		X
IQI 31 - Carotid Endarterectomy Mortality Rate	X		X
IQI 32 - Acute Myocardial Infarction (AMI) Mortality Rate, Without Transfer Cases	X		X
IQI 33 - Primary Cesarean Delivery Rate, Uncomplicated			
Patient Safety Indicators (PSIs)	Calculate Risk-adjusted Rate	Use POA?	
		Technical Specifications	Risk-adjustment
PSI 02 - Death Rate in Low-Mortality Diagnosis Related Groups (DRGs)	X		X
PSI 03 - Pressure Ulcer Rate	X	X	X
PSI 04 - Death Rate among Surgical Inpatients with Serious Treatable Complications	X		X
PSI 05 - Retained Surgical Item or Unretrieved Device Fragment Count		X	
PSI 06 - Iatrogenic Pneumothorax Rate	X	X	X
PSI 07 - Central Venous Catheter-Related Blood Stream Infection Rate	X	X	X
PSI 08 - Postoperative Hip Fracture Rate	X	X	X
PSI 09 - Perioperative Hemorrhage or Hematoma Rate	X	X	X
PSI 10 - Postoperative Physiologic and Metabolic Derangement Rate	X	X	X
PSI 11 - Postoperative Respiratory Failure Rate	X	X	X

PSI 12 - Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate	X	X	X
PSI 13 - Postoperative Sepsis Rate	X	X	X
PSI 14 - Postoperative Wound Dehiscence Rate	X		X
PSI 15 - Accidental Puncture or Laceration Rate	X	X	X
PSI 16 - Transfusion Reaction Count		X	
PSI 17 - Birth Trauma Rate – Injury to Neonate			
PSI 18 - Obstetric Trauma Rate – Vaginal Delivery With Instrument			
PSI 19 - Obstetric Trauma Rate – Vaginal Delivery Without Instrument			
Pediatric Quality Indicators (PDIs)	Calculate Risk-adjusted Rate	Use POA?	
		Technical Specifications	Risk-adjustment
PDI 01 - Accidental Puncture or Laceration Rate	X	X	X
PDI 02 - Pressure Ulcer Rate	X	X	X
PDI 03 - Retained Surgical Item or Unretrieved Device Fragment Count		X	
PDI 05 - Iatrogenic Pneumothorax Rate	X	X	X
PDI 06 - RACHS-1 Pediatric Heart Surgery Mortality Rate	X		X
PDI 07 - RACHS-1 Pediatric Heart Surgery Volume			
PDI 08 - Perioperative Hemorrhage or Hematoma Rate	X	X	X
PDI 09 - Postoperative Respiratory Failure Rate	X	X	X
PDI 10 - Postoperative Sepsis Rate	X	X	X
PDI 11 - Postoperative Wound Dehiscence Rate			X
PDI 12 - Central Venous Catheter-Related Blood Stream Infection Rate	X	X	X
PDI 13 - Transfusion Reaction Count		X	
PDI 14 – Asthma Admission Rate	X		
PDI 15 – Diabetes Short-Term Complications Admission Rate	X		
PDI 16 – Gastroenteritis Admission Rate	X		
PDI 17 – Perforated Appendix Admission Rate	X		
PDI 18 – Urinary Tract Infection Admission Rate	X		
NQI 01 - Neonatal Iatrogenic Pneumothorax Rate		X	X
NQI 02 - Neonatal Mortality Rate	X		X
NQI 03 - Neonatal Blood Stream Infection Rate	X	X	X
Prevention Quality Indicators (PDIs)	Calculate Risk-adjusted Rate	Use POA?	
		Technical Specifications	Risk-adjustment

QI Empirical Methods

PQI 01 - Diabetes Short-Term Complications Admission Rate	X		
PQI 02 - Perforated Appendix Admission Rate	X		
PQI 03 - Diabetes Long-Term Complications Admission Rate	X		
PQI 05 - Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate	X		
PQI 07 - Hypertension Admission Rate	X		
PQI 08 - Heart Failure Admission Rate	X		
PQI 09 - Low Birth Weight Rate	X		
PQI 10 - Dehydration Admission Rate	X		
PQI 11 - Bacterial Pneumonia Admission Rate	X		
PQI 12 - Urinary Tract Infection Admission Rate	X		
PQI 13 - Angina Without Procedure Admission Rate	X		
PQI 14 - Uncontrolled Diabetes Admission Rate	X		
PQI 15 - Asthma in Younger Adults Admission Rate	X		
PQI 16 - Lower-Extremity Amputation Among Patients With Diabetes Rate	X		

Appendix B. Table of AHRQ QI Provider-Level Risk-adjustment Covariates

The categories highlighted in blue are mutually exclusive and exhaustive, meaning that every discharge is assigned a value of “1” for one and only one covariate and there must be an omitted covariate (usually the most common or the least risk). If covariates within a highlighted category are excluded because $N < 30$ or $p < 0.05$ then the covariate is combined with another along the risk gradient. For example, combine birth weight 500-999g with 1000-1499g, age 18-24 with age 25-29 or combine ROM subclass “4” with ROM subclass “3”.

Appendix Table B.1 Table of AHRQ QI Risk-adjustment Covariates for Provider Level Indicators

Category	MutuallyExclusive	IQI	PSI	PDI	NQI
Demographics		Sex	Sex	Sex	Sex
		Age (5-year age groups)	Age (5-year age groups)	Birth weight (500g groups)	Birth weight (500g groups)
				Age in days (90 days to 1 year)	
				Age in years (1 year and above)	
Severity of Illness	DRGs pool into MDCs	APR-DRG	Modified MS-DRG*	Modified MS-DRG*	Modified MS-DRG*
		Major Diagnosis Categories (MDC)	Major Diagnosis Categories (MDC)	Major Diagnosis Categories (MDC)	Major Diagnosis Categories (MDC)
Comorbidities		APR-DRG	AHRQ Comorbidities	AHRQ Clinical Classification Software	Congenital anomalies
		Risk of mortality subclass			
		(1 – minor; 2 - moderate; 3 – major; 4 – extreme)			

QI Empirical Methods

Category	MutuallyExclusive	IQI	PSI	PDI	NQI
Other		Transfer-in status	Transfer-in status	Transfer-in status	Transfer-in status
		Point of Origin status	Point of Origin status	Point of Origin status	Point of Origin status
			Days to Procedure status	Days to Procedure status	Days to Procedure status
				Indicator-specific risk stratifiers	

* Prior to October 1, 2007 use CMS-DRGs; highlighted cateories are mutually exclusive with an omitted covariate.

Appendix C. Helpful Background Information

This appendix includes some helpful information on both annual coding updates and software that is related to, or used by the AHRQ QI software. This information is not specifically statistical in nature, but does inform and affect the methods described in the main body of the document.

A. Fiscal year coding updates

Each fiscal year there are new ICD-9-CM and MS-DRG codes and revisions to existing codes. These changes are effective on October 1st. For example, Version 32 (fiscal year 2014) codes were effective October 1, 2011 and were incorporated in the version 5.0 release of the QI software. Diagnosis and procedure codes are used in the numerator and denominator specifications for the Patient Safety Indicators (PSIs), Prevention Quality Indicators (PQIs), Pediatric Quality Indicators (PDIs), and Inpatient Quality Indicators (IQIs). ICD-9-CM procedure codes affect the Centers for Medicare and Medicaid Services (CMS) classification of “major operating room procedure” for postoperative PSIs and PDIs. Another use of ICD-9-CM is in risk stratification used in the AHRQ Comorbidity Software, AHRQ’s Clinical Classification System, and 3M’s All Patient Refined Diagnosis Related Groups (APR-DRGs). Diagnosis codes are maintained by the Centers for Disease Control and Prevention’s (CDC) National Center for Health Statistics (NCHS). Procedure and MS-DRG codes are maintained by the CMS. The activities of both agencies are conducted jointly through the ICD-9-CM Coordination and Maintenance Committee (the Committee). The Committee meets in September and March to consider proposals for new codes and revisions to existing codes.

The Committee has implemented a partial freeze of the ICD-9-CM and ICD-10-CM/PCS codes in preparation for the implementation of ICD-10 codes on October 1, 2013. As a result, the last regular, annual updates to both ICD-9-CM and ICD-10-CM/PCS codes were made on October 1, 2011 (fiscal year 2012). Following October 1, 2012 only limited coding updates were made to both the ICD-9-CM and ICD-10-CM/PCS codes to capture new technologies and diseases. The Committee meeting agendas and ICD-9-CM timeline is located at the [CMS site](#).

Information on ICD-10-CM coding updates is located on both the NCHS (<http://www.cdc.gov/nchs/icd/icd10cm.htm>) and CMS (http://www.cms.gov/ICD10/11b14_2012_ICD10CM_and_GEMs.asp and http://www.cms.gov/ICD10/11b15_2012_ICD10PCS.asp#TopOfPage) web sites.

APR-DRG codes are maintained by 3M.

A.1 ICD-9-CM coding updates and coding guidelines

Information on ICD-9-CM coding updates is located on both the NCHS and CMS web sites:

(<http://www.cdc.gov/nchs/icd/icd9cm.htm>)
(www.cdc.gov/nchs/data/icd/icd9cm_guidelines_2011.pdf)
(http://www.cms.gov/ICD9ProviderDiagnosticCodes/01_overview.asp)

The anticipated coding updates for the subsequent version of the AHRQ QIs will consist of:

- New codes, if released.
- Limited ICD-9-CM coding revisions or deletions.
- NQF related updates, which may affect one or more indicators (This activity is performed in collaboration with task C.08. A set of NQF requested refinements have been submitted by AHRQ).

In general, updates to diagnosis and procedure codes are available on the NCHS or CMS web site. Preliminary updates are posted in March and final updates are posted in July. Diagnosis code updates are reported in Volume 1 (a tabular listing containing a numerical list of the disease code numbers) and Volume 2 (an alphabetical index to the disease entries).

Procedure code updates are reported in Volume 3 (an alphabetic index and tabular list for surgical, diagnostic, and therapeutic procedures in hospitals and inpatient settings).

The meeting calendar of the Committee will be monitored on an ongoing basis for meeting status and updates to the meeting minutes, and the published coding changes (Volumes 1 and 2 for the diagnosis codes and Volume 3 for the procedure codes) and errata, both preliminary and final, will be reviewed.

The processes for evaluating the updates are described within each subsection below.

Diagnosis Codes

An update consists of three documents.

- ICD-9-CM Index to Diseases Addenda – lists changes to the indexing of codes to diseases.
- ICD-9-CM Diagnosis Tabular Addenda – lists changes to the codes and code categories (defined as the first three digits).
- Conversion Table of New ICD-9-CM Codes – maps current codes to previous codes.

The update process consists of reviewing these documents to identify any coding changes that impact the numerator, denominator or exclusion logic of the AHRQ QI. There are two types of changes:

- A current code is split into two or more sub-codes and the current code is retired. Cases previously assigned to the current code are now assigned to the sub-codes.
- A new code or code category is created. Some cases previously assigned to a current code are now assigned to the new code.

Each change is evaluated to determine whether cases assigned to the codes belong in the numerator, denominator or exclusion logic of one or more AHRQ QI.

Procedure Codes

An update consists of two documents.

- ICD-9-CM Procedure Tabular Addenda – lists changes to the codes and code categories
- Conversion Table of New ICD-9-CM Codes – maps current codes to previous codes.

The update process consists of reviewing these documents to identify any coding changes that impact the numerator, denominator or exclusion logic of the AHRQ QI. There are two types of changes.

- A current code is split into two or more sub-codes and the current code is retired. Cases previously assigned to the current code are now assigned to the sub-codes.
- A new code or code category is created. Some cases previously assigned to a current code are now assigned to the new code.

Each change is evaluated to determine whether cases assigned to the codes belong in the numerator, denominator or exclusion logic of one or more AHRQ QI.

A.2 DRG coding updates

There are two editions of the DRGs. The first edition uses CMS-DRGs and the second edition uses MS-DRGs. The first edition is Version 24 and earlier; the second edition is Version 25 and later.

Updates to CMS-DRG are no longer supported by CMS.

Updates to MS-DRG codes are available on the CMS web site and in the Federal Register. Preliminary updates are posted in May and final updates or corrections are posted by August. (See <http://www.cms.gov/AcuteInpatientPPS>).

The update process consists of reviewing Table 5, which is a list of MS-DRGs, Relative Weighting Factors and Geometric and Arithmetic Mean Length of Stay and is one of the data tables from the fiscal year Inpatient Prospective Payment System from CMS. Ambiguity around the content of any update may usually be resolved through a review of the Federal Register notice. Prior to the implementation of the MS-DRGs, CMS would add and revise many DRGs annually. However, with the implementation of the MS-DRGs, changes are less frequent.

3M APR-DRG coding updates

There is no public posting of updates to the APR-DRG. The commercial product is released in October with an update in April. A research license for the commercial product is available from AHRQ. The limited license grouper used in the AHRQ QI software is available on an ad hoc basis under a voluntary arrangement with 3M.

Along with the limited license grouper, 3M provides documentation on changes to the APR-DRG logic. APR-DRG uses the same version numbering system used by NCHS and CMS. Prior to Version 23 (fiscal year 2006), 3M released a new version of the APR-DRG only once every five fiscal years with an ICD-9-CM mapping to maintain compatibility. Currently 3M releases a new version each fiscal year.

Updating the APR-DRG consists of the following steps:

1. Running the commercial product on the most recent year of Healthcare Cost and Utilization Project (HCUP) data available.

2. AHRQ has “pre-grouped” the HCUP data for selected states and made APR-DRG and risk-of-mortality subclass data elements available on the HCUP intramural databases. Step number 1 does not need to be done for these states.
3. Tabulating the frequency of APR-DRGs in the denominator of each IQI that uses the APR-DRG for risk-adjustment.
4. Retaining those APR-DRGs with at least 30 cases in the numerator.
5. Ensuring that those retained APR-DRGs are included in the covariate tables.

B. Related software maintained by HCUP at AHRQ

The AHRQ QI software uses other AHRQ software as components of the indicator specifications or risk-adjustment covariate specifications. These software components are also updated annually to reflect coding changes. The AHRQ QI support team does not independently review these changes; rather the coding changes are implemented without further review.

B.1 Comorbidity software

There are two editions of the comorbidity software. The first edition uses CMS-DRGs and the second edition uses MS-DRGs. The comorbidity software has its own version numbering system. The first edition is version 3.4 and earlier; the second edition is version 3.5 and later. (See <http://www.hcup-us.ahrq.gov/toolssoftware/comorbidity/comorbidity.jsp>).

The comorbidity software consists of two SAS programs. The first program, Creation of Format Library for Comorbidity Groups (Comformat.txt), creates a SAS format library that maps diagnosis codes into comorbidity indicators. Additional formats are also created to exclude conditions that may be complications or that may be related to the principal diagnosis. The second SAS program, Creation of Comorbidity Variables (Comoanaly.txt), applies the formats created above to a data set containing administrative data and then creates the comorbidity variables used to define the risk-adjustment covariates.

Updating the comorbidity software as used in the AHRQ QI software consists of the following steps:

- Comparing the current format program with the previous format program to identify any changes.
- Comparing the current analysis program with the analysis format program to identify any changes.
- Determine whether any of the changes present a problem for backwards compatibility and, if there is such a problem, design a solution.
- Implement any changes and solutions in the AHRQ QI software.

B.2 Clinical Classification Software (CCS)

The CCS for ICD-9-CM is a diagnosis and procedure categorization scheme that collapses individual codes into a smaller number of clinically meaningful categories. The AHRQ QI uses the single-level edition of the CCS for diagnoses and procedures. The software consists of a SAS formats program.

(See <http://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp>).

Updating the clinical classification software as used in the AHRQ QI software consists of the following steps:

- Comparing the current format program with the previous format program to identify any changes.
- Determine whether any of the changes present a problem for backwards compatibility and, if there is such a problem, design a solution.
- Implement any changes and solutions in the AHRQ QI software.

B.3 Procedure classes

The procedure classes assign ICD-9-CM procedure codes to one of four categories:

- Minor Diagnostic - Non-operating room procedures that are diagnostic.
- Minor Therapeutic - Non-operating room procedures that are therapeutic.
- Major Diagnostic - All procedures considered valid operating room procedures by the DRG grouper and that are performed for diagnostic reasons.
- Major Therapeutic - All procedures considered valid operating room procedures by the DRG grouper and that are performed for therapeutic reasons.

(See <http://www.hcup-us.ahrq.gov/toolssoftware/procedure/procedure.jsp>).

There is one file per fiscal year (PC.csv) that includes three elements: ICD-9-CM procedure codes, ICD-9-CM code labels, and procedure class assignments. In general, most of the changes relate to new procedure codes. However, sometimes the procedure class changes for an existing code. In these circumstances, the most recent assignment is used.

Updating the procedure classes as used in the AHRQ QI software consists of the following steps:

- Comparing the current procedure class assignments with the previous procedure class assignments to identify any changes.
- Special attention is given to operating room procedures in classes 3 and 4 (used to identify surgical discharges).
- Implement any changes in the AHRQ QI software.

C. Related classifications maintained by the AHRQ QI support team

The AHRQ QI software also uses other classifications as a component of the indicator specification or risk-adjustment covariate specification. These classification components are updated annually to reflect coding changes. The classifications include the Modified DRGs (MDRGs), birth weight (BWHTCAT), Congenital Anomalies (CONGCAT), and indicator-specification stratifications for the PDIs (HPPD01, GPPD02, GPPD10, HPPD10 and GPPD12).

C.1 Modified DRGs (MDRGs)

The purpose of the MDRG is to maintain a consistent mapping between CMS DRGs and MS-DRGs, and to pool MS-DRGs with and without CCs and MCCs. A new MS-DRG code either divides an existing MS-DRG into sub-MS-DRGs or re-assigns cases from multiple existing MS-DRGs. The MDRG is a four digit code. The first two digits are the Major Diagnosis Category (MDC), and the second two digits are a sequence number (e.g., 01-04) within the MDC.

Updating the modified DRGs consists of the following steps:

- Identify the relevant AHRQ QIs for which the fiscal year MS-DRG changes apply. The MS-DRG changes are identified in the CMS Table 5 (a list of MS-DRGs, Relative Weighting Factors and Geometric and Arithmetic Mean Length of Stay) from the fiscal year Inpatient Prospective Payment System.
- Use the CMS crosswalk to pool CMS-DRGs and MS-DRGs into a single MDRG and compare with the MDRG categories table in the relevant risk adjustment tables document.
- Implement any changes in the AHRQ QI software.

C.2 Birth weight (BWHTCAT)

BWHTCAT in 250g increments are defined by ICD-9-CM codes. Occasionally new codes are derived from existing codes.

Updating the birth weight categories consists of the following steps:

- Identify the relevant ICD-9-CM coding updates that pertain to the definition of the birth weight categories.
- Update the specifications, appendix and change log for the PDIs.
- Implement any changes in the AHRQ QI software.

C.3 Congenital anomalies (CONGCAT)

CONGCAT for gastrointestinal, genitourinary, central nervous system, pulmonary, cardiovascular, skeletal, chromosomal syndromes and selected other congenital anomalies are defined by ICD-9-CM codes (Original source Phibbs, et. al.⁴). Occasionally new codes are derived from existing codes.

Updating the CONGCATs consists of the following steps:

Identify the relevant ICD-9-CM coding updates that pertain to the definition of the congenital

⁴ Phibbs CS, Baker LC, Caughey AB, Danielsen B, Schmitt SK, Phibbs RH. Level and volume of neonatal intensive care and mortality in very-low-birth-weight infants. *New England Journal of Medicine*. 2007;356(21):2165-2175 & Supplement.

anomalies.

- Update the specifications and change log for the relevant AHRQ QIs.
- Implement any changes in the AHRQ QI software.

C.4 Indicator-specific

Some PDIs have classifications used in stratification and as covariates in risk-adjustment. These classifications are procedure type risk category (HPPD01), pressure ulcer risk category (GPPD02), wound class procedure type (GPPD10), immune-compromised risk category (HPPD10) and bloodstream infection risk category (GPPD12). Occasionally new codes are derived from existing codes.

Updating the indicator-specific classifications consists of the following steps:

- Identify the relevant ICD-9-CM coding updates that pertain to the definition of the classifications.
- Update the specifications, appendix and change log for the relevant AHRQ QIs.
- Implement any changes in the AHRQ QI software.

D. Risk-adjustment for Congenital Heart Surgery (RACHS-1) software

RACHS-1 is a type of specification (the numerator and denominator inclusion and exclusion rules). The Pediatric Heart Surgery Mortality (PDI 06) measure uses the RACHS-1 software to assign pediatric heart surgery cases to risk strata depending on the type of surgery (HPPD06). The stratification occurs upon running the RACHS-1 syntax which is embedded in the software. The RACHS-1 software is maintained on an ad hoc basis by Children's Hospital in Boston. (See <http://www.ncbi.nlm.nih.gov/pubmed/15283367>).

Updating the RACHS-1 software consists of confirming the coding updates that apply to RACHS-1 from the Children's Hospital in Boston.