

Iatrogenic Pneumothorax Rate

Patient Safety Indicators #22

Technical Specifications

Area-Level Indicator

AHRQ Quality Indicators, Version 4.3, August 2011

Version 4.3a is a maintenance release of Version 4.3. The differences between the two versions are:

- Version 4.3a includes Version 29 of the Limited License edition of the 3M™ APR-DRG Grouper. This grouper corrects an issue found in Version 28 of the Limited License edition of the 3M™ APR-DRG Grouper. The grouper is only used with the Inpatient Quality Indicator (IQI) mortality measures. Version 4.3 includes Version 28 of the Limited License edition of the 3M™ APR-DRG Grouper, which was incorrectly assigning a Risk of Mortality (ROM) subclass for cases dated on or after 10/1/10.
- Version 4.3a allows users to calculate area-level indicators for years 2010 and 2011, correcting an issue previously identified in Version 4.3.

All other aspects of the software, including measure specifications, remain the same. Thus this document (related to Version 4.3) remains unchanged.

Numerator

Discharges 18 years and older with ICD-9-CM code for iatrogenic pneumothorax in any diagnosis field (principal or secondary) of medical and surgical discharges defined by specific DRGs or MS-DRGs.

ICD-9-CM Iatrogenic pneumothorax diagnosis code:

5121 IATROGENIC PNEUMOTHORAX

See *Patient Safety Indicators Appendices*:

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

Exclude cases:

- MDC 14 (pregnancy, childbirth, and puerperium)
- with diagnosis code of chest trauma or pleural effusion
- with an ICD-9-CM procedure code of diaphragmatic surgery repair
- with any code indicating thoracic surgery, lung or pleural biopsy, or cardiac surgery

ICD-9-CM Chest trauma diagnosis codes:

80700	FRACTURE RIB NOS-CLOSED	80704	FRACTURE FOUR RIBS-CLOSE
80701	FRACTURE ONE RIB-CLOSED	80705	FRACTURE FIVE RIBS-CLOSE
80702	FRACTURE TWO RIBS-CLOSED	80706	FRACTURE SIX RIBS-CLOSED
80703	FRACTURE THREE RIBS-CLOS	80707	FRACTURE SEVEN RIBS-CLOS

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80708	FX EIGHT/MORE RIB-CLOSED	86231	BRONCHUS INJURY-OPEN
80709	FX MULT RIBS NOS-CLOSED	86232	ESOPHAGUS INJURY-OPEN
80710	FRACTURE RIB NOS-OPEN	86239	INTRATHORAC INJ NEC-OPEN
80711	FRACTURE ONE RIB-OPEN	8628	INTRATHORACIC INJ NOS-CL
80712	FRACTURE TWO RIBS-OPEN	8629	INTRATHORAC INJ NOS-OPEN
80713	FRACTURE THREE RIBS-OPEN	8750	OPEN WOUND OF CHEST
80714	FRACTURE FOUR RIBS-OPEN	8751	OPEN WOUND CHEST-COMPL
80715	FRACTURE FIVE RIBS-OPEN	8760	OPEN WOUND OF BACK
80716	FRACTURE SIX RIBS-OPEN	8761	OPEN WOUND BACK-COMPL
80717	FRACTURE SEVEN RIBS-OPEN	9010	INJURY THORACIC AORTA
80718	FX EIGHT/MORE RIBS-OPEN	9011	INJ INNOMIN/SUBCLAV ART
80719	FX MULT RIBS NOS-OPEN	9012	INJ SUPERIOR VENA CAVA
8072	FRACTURE OF STERNUM-CLOS	9013	INJ INNOMIN/SUBCLAV VEIN
8073	FRACTURE OF STERNUM-OPEN	90140	INJ PULMONARY VESSEL NOS
8074	FLAIL CHEST	90141	INJURY PULMONARY ARTERY
8075	FX LARYNX/TRACHEA-CLOSED	90142	INJURY PULMONARY VEIN
8076	FX LARYNX/TRACHEA-OPEN	90181	INJ INTERCOSTAL ART/VEIN
8090	FRACTURE TRUNK BONE-CLOS	90182	INJ INT MAMMARY ART/VEIN
8091	FRACTURE TRUNK BONE-OPEN	90183	INJ MULT THORACIC VESSEL
8600	TRAUM PNEUMOTHORAX-CLOSE	90189	INJ THORACIC VESSEL NEC
8601	TRAUM PNEUMOTHORAX-OPEN	9019	INJ THORACIC VESSEL NOS
8602	TRAUM HEMOTHORAX-CLOSED	9110	ABRASION TRUNK
8603	TRAUM HEMOTHORAX-OPEN	9111	ABRASION TRUNK-INFECTED
8604	TRAUM PNEUMOHEMOTHOR-CL	9118	SUPERFIC INJU TRUNK NEC
8605	TRAUM PNEUMOHEMOTHOR-OPN	9119	SUPERFIC INJU TRUNK NEC-INF
86100	HEART INJURY NOS-CLOSED	9220	CONTUSION OF BREAST
86101	HEART CONTUSION-CLOSED	9221	CONTUSION OF CHEST WALL
86102	HEART LACERATION-CLOSED	9223	BACK CONTUSION
86103	HEART CHAMBER LACERAT-CL	92231	BACK CONTUSION
86110	HEART INJURY NOS-OPEN	92233	INTERSCPLR REG CONTUSION
86111	HEART CONTUSION-OPEN	9228	MULIPLE CONTUSION TRUNK
86112	HEART LACERATION-OPEN	9229	CONTUSION OF TRUNK
86113	HEART CHAMBER LACER-OPN	92611	CRUSHING INJURY BACK
86120	LUNG INJURY NOS-CLOSED	92619	CRUSHING INJ TRUNK NEC
86121	LUNG CONTUSION-CLOSED	9268	MULT CRUSHING INJ TRUNK
86122	LUNG LACERATION-CLOSED	9269	CRUSHING INJ TRUNK NOS
86130	LUNG INJURY NOS-OPEN	9290	CRUSH INJ MULT SITE NEC
86131	LUNG CONTUSION-OPEN	9299	CRUSHING INJURY NOS
86132	LUNG LACERATION-OPEN	9541	INJ SYMPA NERVE NEC
8620	DIAPHRAGM INJURY-CLOSED	9548	INJURY TRUNK NERVE NEC
8621	DIAPHRAGM INJURY-OPEN	9549	INJURY TRUNK NERVE NOS
86221	BRONCHUS INJURY-CLOSED	95911	INJURY OF CHEST WALL NEC
86222	ESOPHAGUS INJURY-CLOSED	95919	TRUNK INJURY-SITES NEC
86229	INTRATHORACIC INJ NEC-CL	9599	INJURY-SITE NOS
ICD-9-CM Pleural effusion diagnosis codes:			
0101	TUBERCULOUS PLEURISY IN PRIMARY PROGRESSIVE TUBERCULOSIS	01015	TPIPPT, TUBERCLE BACILI NOT FOUND BY BACTERIOLOGICAL BUT CONFIRMED HISTOLOGICALLY
01010	TUBERCULOUS PLEURISY IN PRIMARY PROGRESSIVE TUBERCULOSIS, UNSPECIFIED	01016	TPIPPT, TUBERCLE BACILI NOT FOUND BY BACTERIOLOGICAL OR HISTOLOGICAL BUT CONFIRMED OTHER METHODS
01011	TPIPPT, BACTERIAL OR HISTOLOGICAL EXAM NOT DONE	0117	TUBRCULOUS PNEUMOTHORAX
01012	TPIPPT, BACTERIAL OR HISTOLOGICAL EXAM UNKNOWN	01170	TUBRCULOUS PNEUMOTHORAX, UNSPECIFIED
01013	TPIPPT, TUBERCLE BACILI FOUND BY MICROSCOPY	01171	TPNEU, BACTERIAL OR HISTOLOGICAL EXAM NOT DONE
01014	TPIPPT, TUBERCLE BACILI NOT FOUND BY MICROSCOPY BUT BY BACTERIAL CULTURE	01172	TPNEU, BACTERIAL OR HISTOLOGICAL EXAM UNKNOWN

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01173	TPNEU, TUBERCLE BACILI FOUND BY MICROSCOPY	01204	TP, TUBERCLE BACILI NOT FOUND BY MICROSCOPY BUT BY BACTERIAL CULTURE
01174	TPNEU, TUBERCLE BACILI NOT FOUND BY MICROSCOPY BUT BY BACTERIAL CULTURE	01205	TP, TUBERCLE BACILI NOT FOUND BY BACTERIOLOGICAL BUT CONFIRMED HISTOLOGICALLY
01175	TPNEU, TUBERCLE BACILI NOT FOUND BY BACTERIOLOGICAL BUT CONFIRMED HISTOLOGICALLY	01206	TP, TUBERCLE BACILI NOT FOUND BY BACTERIOLOGICAL OR HISTOLOGICAL BUT CONFIRMED OTHER METHODS
01176	TPENU, TUBERCLE BACILI NOT FOUND BY BACTERIOLOGICAL OR HISTOLOGICAL BUT CONFIRMED OTHER METHODS	1972	SECOND MALIG NEO PLEURA
0120	TUBERCULOUS PLEURISY	5111	WITH EFUSION, WITH MENTION OF A BACTERIAL CAUSE OTHER THAN TUBERCULOSIS
01200	TUBERCULOUS PLEURISY, UNSPECIFIED	5118	OTHER SPECIFIED FORM OF EFFUSION, EXCEPT TUBERCULOUS
01201	TP, BACTERIAL OR HISTOLOGICAL EXAM NOT DONE	51181	MALIGNANT PLEURAL EFFUSION (OCT08)
01202	TP, BACTERIAL OR HISTOLOGICAL EXAM UNKNOWN	51189	OTHER SPECIFIED FORMS OF EFFUSION, EXCEPT TUBERCULOSIS (OCT08)
01203	TP, TUBERCLE BACILI FOUND BY MICROSCOPY	5119	UNSPECIFIED PLEURAL EFFUSION
ICD-9-CM Diaphragmatic surgery repair codes:			
537	ABD REPAIR-DIAPHR HERNIA	5380	THOR REP-DIAPH HERN NOS
5371	LAPAROSCOPIC REPAIR OF DIAPHRAGMATIC HERNIA, ABDOMINAL APPROACH (OCT08)	5381	DIAPHRAGMATIC PPLICATION
5372	OTHER AND OPEN REPAIR OF DIAPHRAGMATIC HERNIA, ABDOMINAL APPROACH (OCT08)	5382	PARASTERN HERNIA REPAIR
5375	REPAIR OF DIAPHRAGMATIC HERNIA, ABDOMINAL APPROACH, NOS (OCT08)	5583	LAPAROSCOPIC REPAIR OF DIAPHRAGMATIC HERNIA, WITH THORACIC APPROACH (OCT08)
		5584	OTHER AND OPEN REPAIR OF DIAPHRAGMATIC HERNIA, WITH THORACIC APPROACH (OCT08)
ICD-9-CM Thoracic surgery procedure codes:			
0522	SYMPATHECTOMY CERVICAL	3224	PERC ABLTN LUNG LES/TISS (OCT06)
0523	SYMPATHECTOMY LUMBAR	3225	THOR ABLTN LUNG LES/TISS (OCT06)
0529	OTHER SYMPATHECTOMY AND GANGLIONECTOMY	3226	ABLTN LUNG TISS NEC/NOS (OCT06)
0780	THYMECTOMY, NOT OTHERWISE SPECIFIED	3227	BRNC THRMPLSTY, ABLT MSCL
0781	OTHER PARTIAL EXCISION OF THYMUS	3228	ENDOSCOPIC EXCISION OR DESTRUCTION OF LESION OR TISSUE OF LUNG
0782	OTHER TOTAL EXCISION OF THYMUS	3229	OTHER LOCAL EXCISION OR DESTRUCTION OF LESION OR TISSUE OF LUNG
0783	THORACOSCOPIC PARTIAL EXCISION OF THYMUS	323	SEGMENTAL RESECTION OF LUNG
0784	THORACOSCOPIC TOTAL EXCISION OF THYMUS	3230	THORAC SEG LUNG RESECT
3121	MEDIASTINAL TRACHEOSTOMY	3239	OTH SEG LUNG RESECT NOS
3145	OPEN BIOPSY OF LARYNX OR TRACHEA	324	LOBECTOMY OF LUNG
3173	CLOSURE OF OTHER FISTULA OF TRACHEA	3241	THORAC LOBECTOMY LUNG
3179	OTHER REPAIR AND PLASTIC OPERATIONS ON TRACHEA	3249	OTHER LOBECTOMY OF LUNG
3199	OTHER OPERATIONS ON TRACHEA	325	COMPLETE PNEUMONECTOMY
3209	OTHER LOCAL EXCISION OR DESTRUCTION OF LESION OR TISSUE OF BRONCHUS	3250	THORACOSPC PNEUMONECTOMY
321	OTHER EXCISION OF BRONCHUS	3259	OTHER PNEUMONECTOMY NOS
3220	THORAC EXC LUNG LESION	326	RADICAL DISSECTION OF THORACIC STRUCTURES
<hr/>			
Local excision or destruction of lesion or tissue of lung		329	OTHER EXCISION OF LUNG
3221	PLICATION OF EMPHYSEMATIOUS BLEB	330	INCISION OF BRONCHUS
3222	LUNG VOLUME REDUCTION SURGERY	331	INCISION OF LUNG
3223	OPEN ABLTN LUNG LES/TISS (OCT06)	3320	THORACOSCOPC LUNG BIOPSY
		3325	OPEN BIOPSY OF BRONCHUS
		3326	CLOSE [PERCUTANEOUS][NEEDLE] BIOPSY OF LUNG

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3327	CLOSED ENDOSCOPIC BIOPSY OF LUNG	344	EXCISION OR DESTRUCTION OF LESION OF CHEST WALL
3328	OPEN BIOPSY OF LUNG	3451	DECORTICATION OF LUNG
3331	DESTRUCTION OF PHRENIC NERVE FOR COLLAPSE OF LUNG (NO LONGER PERFORMED)	3452	THORACOSCOPIC DECORT LUNG
3332	ARTIFICIAL PNEUMOTHORAX FOR COLLAPSE OF LUNG	3459	OTHER EXCISION OF PLEURA
3334	THORACOPLASTY	<hr/>	
3339	OTHER SURGICAL COLLAPSE OF LUNG	Repair of chest wall	
<hr/>		3471	SUTURE OF LACERATION OF CHEST WALL
Repair and plastic operation on lung and bronchus		3472	CLOSURE OF THORACOSTOMY
3341	SUTURE OF LACERATION OF BRONCHUS	3473	CLOSURE OF OTHER FISTULA OF THORAX
3342	CLOSURE OF BRONCHIAL FISTULA	3474	REPAIR OF PECTUS DEFORMITY
3343	CLOSURE OF LACERATION OF LUNG	3479	OTHER REPAIR OF CHEST WALL
3348	OTHER REPAIR AND PLASTIC OPERATIONS ON BRONCHUS	<hr/>	
3349	OTHER REPAIR AND PLASTIC OPERATIONS ON LUNG	Operations on diaphragm	
<hr/>		3481	EXCISION OF LESION OR TISSUE OF DIAPHRAGM
Lung transplant		3482	SUTURE OF LACERATION OF DIAPHRAGM
335	LUNG TRANSPLANTATION	3483	CLOSURE OF FISTULA OF DIAPHRAGM
3350	LUNG TRANSPLANTATION, NOS	3484	OTHER REPAIR OF DIAPHRAGM
3351	UNILATERAL LUNG TRANSPLANTATION	3485	IMPLANTATION OF DIAPHRAGMATIC PACEMAKER
3352	BILATERAL LUNG TRANSPLANTATION	3489	OTHER OPERATIONS ON DIAPHRAGM
336	COMBINED HEART-LUNG TRANSPLANTATION	3493	REPAIR OF PLEURA
3392	LIGATION OF BRONCHUS	3499	OTHER OPERATIONS ON THORAX, OTHER
3393	PUNCTURE OF LUNG	<hr/>	
3398	OTHER OPERATIONS ON BRONCHUS	Operations on thoracic duct	
3399	OTHER OPERATIONS ON LUNG	4061	CANNULATION OF THORACIC DUCT
3329	OTHER DIAGNOSTIC PROCEDURE ON LUNG AND BRONCHUS	4062	FISTULIZATION OF THORACIC DUCT
3333	PNEUMOPERITONEUM FOR COLLAPSE OF LUNG	4063	CLOSURE OF FISTULA OF THORACIC DUCT
3401	INCISION OF CHEST WALL	4064	LIGATION OF THORACIC DUCT
3402	EXPLORATORY THORACOTOMY	4069	OTHER OPERATIONS ON THORACIC DUCT
3403	REOPENING OF RECENT THORACOTOMY SITE	<hr/>	
3405	CREATION OF PLEUROPERITONEAL SHUNT	Esophagotomy	
3409	OTHER INCISION OF PLEURA	4201	INCISION OF ESOPHAGEAL WEB
341	INCISION OF MEDIASTINUM	4209	OTHER INCISION OF ESOPHAGUS
<hr/>		4210	ESOPHAGOSTOMY, NOS
Diagnostic procedures on chest wall, pleura, mediastinum, and diaphragm		4211	CERVICAL ESOPHAGOSTOMY
3420	THORACOSCOPIC PLEURAL BX	4212	EXTERIORIZATION OF ESOPHAGEAL POUCH
3421	TRANSPLEURAL THORACOSCOPY	4219	OTHER EXTERNAL FISTULIZATION OF ESOPHAGUS
3422	MEDIASTINOSCOPY	4221	OPERATIVE ESOPHAGOSCOPY BY INCISION
3423	BIOPSY OF CHEST WALL	4225	OPEN BIOPSY OF ESOPHAGUS
3424	PLEURAL BIOPSY	4231	LOCAL EXCISION OF ESOPHAGEAL DIVERTICULUM
3425	CLOSED [PERCUTANEOUS][NEEDLE] BIOPSY OF MEDIASTINUM	4232	LOCAL EXCISION OF OTHER LESION OR TISSUE OF ESOPHAGUS
3426	OPEN BIOPSY OF MEDIASTINUM	<hr/>	
3427	BIOPSY OF DIAPHRAGM	Excision of esophagus	
3428	OTHER DIAGNOSTIC PROCEDURES ON CHEST WALL, PLEURA, AND DIAPHRAGM	4239	OTHER DESTRUCTION OF LESION OR TISSUE OF ESOPHAGUS
3429	OTHER DIAGNOSTIC PROCEDURES ON MEDIASTINUM	4240	ESOPHAGECTOMY, NOS
343	EXCISION OR DESTRUCTION OF LESION OR TISSUE OF MEDIASTINUM	4241	PARTIAL ESOPHAGECTOMY
		4242	TOTAL ESOPHAGECTOMY
		<hr/>	
		Intrathoracic anastomosis of esophagus	
		4251	INTRATHORACIC ESOPHAGOESOPHAGOSTOMY
		4252	INTRATHORACIC ESOPHAGOGASTROSTOMY

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4253	INTRATHORACIC ESOPHAGEAL ANASTOMOSIS W/ INTERPOSITION OF SMALL BOWEL	4268	OTHER ANTESTERNAL ESOPHAGEAL ANASTOMOSIS W/ INTERPOSITION
4254	OTHER INTRATHORACIC ESOPHAGOENTEROSTOMY	4269	OTHER ANTESTERNAL ANASTOMOSIS OF ESOPHAGUS
4255	INTRATHORACIC ESOPHAGEAL ANASTOMOSIS W/ INTERPOSITION OF COLON	<hr/> Other repair of esophagus <hr/>	
4256	OTHER INTRATHORACIC ESOPHAGOCOLOSTOMY	427	ESOPHAGOMYOTOMY
4258	INTRATHORACIC ESOPHAGEAL ANASTOMOSIS W/ OTHER INTERPOSITION	4281	INSERTION OF PERMANENT TUBE INTO ESOPHAGUS
4259	OTHER INTRATHORACIC ANASTOMOSIS OF ESOPHAGUS	4282	SUTURE OF LACERATION OF ESOPHAGUS
<hr/> Antesternal anastomosis <hr/>		4283	CLOSURE OF ESOPHAGOSTOMY
4261	ANTESTERNAL ESOPHAGOESOPHAGOSTOMY	4284	REPAIR OF ESOPHAGEAL FISTULA, NEC
4262	ANTESTERNAL ESOPHAGOGASTROSTOMY	4285	REPAIR OF ESOPHAGEAL STRICTURE
4263	ANTESTERNAL ESOPHAGEAL ANASTOMOSIS W/ INTERPOSITION OF SMALL BOWEL	4286	PRODUCTION OF SUBCUTANEOUS TUNNEL W/O ESOPHAGEAL ANASTOMOSIS
4264	OTHER ANTESTERNAL ESOPHAGOENTEROSTOMY	4287	OTHER GRAFT OF ESOPHAGUS
4265	ANTESTERNAL ESOPHAGEAL ANASTOMOSIS W/ INTERPOSITION OF COLON	4289	OTHER REPAIR OF ESOPHAGUS
4266	OTHER ANTESTERNAL ESOPHAGOCOLOSTOMY	4465	ESOPHAGOGASTROPLASTY
		4466	OTHER PROCEDURES FOR CREATION OF ESOPHAGOGASTRIC SPHINCTERIC COMPETENCE
		8104	DORSAL AND DORSO-LUMBAR FUSION, ANTERIOR TECHNIQUE
		8134	REFUSION OF DORSAL AND DORSOLUMBAR SPINE, ANTERIOR TECHNIQUE
ICD-9-CM Lung or pleural biopsy procedure codes:			
3326	CLOSED [PERCUTANEOUS] [NEEDLE] BIOPSY OF LUNG	3328	OPEN BIOPSY OF LUNG
		3424	PLEURAL BIOPSY
ICD9-CM Cardiac procedure codes:			
3510	OPEN HEART VALVULOPLASTY WITHOUT REPLACEMENT, UNSPECIFIED VALVE	3525	REPLACEMENT OF PULMONARY VALVE WITH TISSUE GRAFT
3511	OPEN HEART VALVULOPLASTY OF AORTIC VALVE WITHOUT REPLACEMENT	3526	OTHER REPLACEMENT OF PULMONARY VALVE
3512	OPEN HEART VALVULOPLASTY OF MITRAL VALVE WITHOUT REPLACEMENT	3527	REPLACEMENT OF TRICUSPID VALVE WITH TISSUE GRAFT
3513	OPEN HEART VALVULOPLASTY OF PULMONARY VALVE WITHOUT REPLACEMENT	3528	OTHER REPLACEMENT OF TRICUSPID VALVE
3514	OPEN HEART VALVULOPLASTY OF TRICUSPID VALVE WITHOUT REPLACEMENT	3531	OPERATIONS ON PAPILLARY MUSCLE
3520	REPLACEMENT OF UNSPECIFIED HEART VALVE	3532	OPERATIONS ON CHORDAE TENDINEAE
3521	REPLACEMENT OF AORTIC VALVE WITH TISSUE GRAFT	3533	ANNULOPLASTY
3522	OTHER REPLACEMENT OF AORTIC VALVE	3534	INFUNDIBULECTOMY
3523	REPLACEMENT OF MITRAL VALVE WITH TISSUE GRAFT	3535	OPERATIONS ON TRABECULAE CARNEAE CORDIS
3524	OTHER REPLACEMENT OF MITRAL VALVE	3539	OPERATIONS ON OTHER STRUCTURES ADJACENT TO VALVES OF HEART
		3550	REPAIR OF UNSPECIFIED SEPTAL DEFECT OF HEART WITH PROSTHESIS
		3551	REPAIR OF ATRIAL SEPTAL DEFECT WITH PROSTHESIS, OPEN TECHNIQUE
		3553	REPAIR OF VENTRICULAR SEPTAL DEFECT WITH PROSTHESIS, OPEN TECHNIQUE
		3554	REPAIR OF ENDOCARDIAL CUSHION DEFECT WITH PROSTHESIS

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3560	REPAIR OF UNSPECIFIED SEPTAL DEFECT OF HEART WITH TISSUE GRAFT	3619	OTHER BYPASS ANASTOMOSIS FOR HEART REVASCULARIZATION
3561	REPAIR OF ATRIAL SEPTAL DEFECT WITH TISSUE GRAFT	362	HEART REVASCULARIZATION BY ARTERIAL IMPLANT
3562	REPAIR OF VENTRICULAR SEPTAL DEFECT WITH TISSUE GRAFT	3631	OPEN CHEST TRANSMYOCARDIAL REVASCULARIZATION
3563	REPAIR OF ENDOCARDIAL CUSHION DEFECT WITH TISSUE GRAFT	3632	OTHER TRANSMYOCARDIAL REVASCULARIZATION
3570	OTHER AND UNSPECIFIED REPAIR OF UNSPECIFIED SEPTAL DEFECT OF HEART	3639	OTHER HEART REVASCULARIZATION
3571	OTHER AND UNSPECIFIED REPAIR OF ATRIAL SEPTAL DEFECT	3691	REPAIR OF ANEURYSM OF CORONARY VESSEL
3572	OTHER AND UNSPECIFIED REPAIR OF VENTRICULAR SEPTAL DEFECT	3699	OTHER OPERATIONS ON VESSELS OF HEART
3573	OTHER AND UNSPECIFIED REPAIR OF ENDOCARDIAL CUSHION DEFECT	370	PERICARDIOCENTESIS
3581	TOTAL REPAIR OF TETRALOGY OF FALLOT	3710	INCISION OF HEART, NOT OTHERWISE SPECIFIED
3582	TOTAL REPAIR OF TOTAL ANOMALOUS PULMONARY VENOUS CONNECTION	3711	CARDIOTOMY
3583	TOTAL REPAIR OF TRUNCUS ARTERIOSUS	3712	PERICARDIOTOMY
3584	TOTAL CORRECTION OF TRANSPOSITION OF GREAT VESSELS, NOT ELSEWHERE CLASSIFIED	3731	PERICARDIECTOMY
3591	INTERATRIAL TRANSPOSITION OF VENOUS RETURN	3732	EXCISION OF ANEURYSM OF HEART
3592	CREATION OF CONDUIT BETWEEN RIGHT VENTRICLE AND PULMONARY ARTERY	3733	EXCISION OR DESTRUCTION OF OTHER LESION OR TISSUE OF HEART, OPEN APPROACH
3593	CREATION OF CONDUIT BETWEEN LEFT VENTRICLE AND AORTA	3735	PARTIAL VENTRICULECTOMY
3594	CREATION OF CONDUIT BETWEEN ATRIUM AND PULMONARY ARTERY	3736	EXCISION OR DESTRUCTION OF LEFT ATRIAL APPENDAGE (LAA) (OCT08)
3595	REVISION OF CORRECTIVE PROCEDURE ON HEART	3737	EXC/DESC HRT LES, THRSPC
3597	PERC MTRL VLV REPR W IMP	3741	IMPLANTATION OF PROSTHETIC CARDIAC SUPPORT DEVICE AROUND THE HEART
3598	OTHER OPERATIONS ON SEPTA OF HEART	3749	OTHER REPAIR OF HEART AND PERICARDIUM
3599	OTHER OPERATIONS ON VALVES OF HEART	3751	HEART TRANSPLANTATION
3603	OPEN CHEST CORONARY ARTERY ANGIOPLASTY	3752	IMPLANTATION OF TOTAL REPLACEMENT HEART SYSTEM
3610	AORTOCORONARY BYPASS FOR HEART REVASCULARIZATION, NOT OTHERWISE SPECIFIED	3753	REPLACEMENT OF REPAIR OF THORACIC UNIT OF TOTAL REPLACEMENT HEART SYSTEM
3611	(AORTO)CORONARY BYPASS OF ONE CORONARY ARTERY	3754	REPLACEMENT OR REPAIR OF OTHER IMPLANTABLE COMPONENT OF TOTAL REPLACEMENT HEART SYSTEM
3612	(AORTO)CORONARY BYPASS OF TWO CORONARY ARTERIES	3755	REMOVAL OF INTERNAL BIVENTRICULAR HEART REPLACEMENT SYSTEM (OCT08)
3613	(AORTO)CORONARY BYPASS OF THREE CORONARY ARTERIES	3760	IMPLANTATION OR INSERTION OF BIVENTRICULAR EXTERNAL HEART ASSIST SYSTEM (OCT08)
3614	(AORTO)CORONARY BYPASS OF FOUR OR MORE CORONARY ARTERIES	3761	IMPLANT OF PULSATION BALLOON
3615	SINGLE INTERNAL MAMMARY-CORONARY ARTERY BYPASS	3762	INSERTION OF NON-IMPLANTABLE HEART ASSIST SYSTEM
3616	DOUBLE INTERNAL MAMMARY-CORONARY ARTERY BYPASS	3763	REPAIR OF HEART ASSIST SYSTEM
3617	ABDOMINAL -CORONARY ARTERY BYPASS	3764	REMOVAL OF HEART ASSIST SYSTEM
		3765	IMPLANT OF EXTERNAL HEART ASSIST SYSTEM
		3766	INSERTION OF IMPLANTABLE HEART ASSIST SYSTEM
		3767	IMPLANTATION OF CARDIOMYOSTIMULATION SYSTEM
		3791	OPEN CHEST CARDIAC MASSAGE
		3804	INCISION OF VESSEL, AORTA

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3805	INCISION OF VESSEL, OTHER THORACIC	3885	LIGATION, DIVISION OF OTHER THORACIC VESSELS
3844	RESECTION OF ABDOMINAL AORTA WITH GRAFT REPLACEMENT	390	SYSTEMIC TO PULMONARY ARTERY SHUNT
3845	RESECTION OF THORACIC VESSEL WITH GRAFT REPLACEMENT	3921	CAVAL-PULMONARY ARTERY ANASTOMOSIS
3864	EXCISION OF LESION OF AORTA	3922	AORTA-SUBCLAVIAN-CAROTID BYPASS
3865	EXCISION OF LESION OTHER THORACIC VESSEL	3923	OTHER INTRATHORACIC VASCULAR SHUNT OR BYPASS
3884	LIGATION , DIVISION OF AORTA		

Denominator

Discharges in the numerator are assigned to the denominator based on the Metro Area¹ or county of the patient residence, not the Metro Area or county of the hospital where the discharge occurred.

Exclude cases:

- with any code indicating thoracic procedure, lung or pleural biopsy, or cardiac procedure
- with missing gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing), county (PSTCO=missing)

ICD-9-CM Thoracic Surgery procedure codes:

3227	BRNC THRMPLSTY, ANLT MSCL	4467	LAP CREAT ESOPH SPHINCT
435	PROXIMAL GASTRECTOMY	7781	OTH CEHST CAGE OSTECTOMY
4399	TOTAL GASTRECTOMY NEC	7791	TOT CHEST CAGE OSTECTOMY

ICD-9-CM Cardiac procedure codes:

3597	PERC MTRL VLV REPR W IMP	3737	EXC/DEST HRT LES, THRSPC
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¹ 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 3) 2003 OMB Metropolitan Statistical Area. Micropolitan Statistical Areas are not used in the QI software.