

Iatrogenic Pneumothorax Rate

Patient Safety Indicators #22

Technical Specifications

Area-Level Indicator

AHRQ Quality Indicators, Version 4.4, March 2012

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
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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 codes¹:

80700	FRACTURE RIB NOS-CLOSED	8072	FRACTURE OF STERNUM-CLOS
80701	FRACTURE ONE RIB-CLOSED	8073	FRACTURE OF STERNUM-OPEN
80702	FRACTURE TWO RIBS-CLOSED	8074	FLAIL CHEST
80703	FRACTURE THREE RIBS-CLOS	8075	FX LARYNX/TRACHEA-CLOSED
80704	FRACTURE FOUR RIBS-CLOSE	8076	FX LARYNX/TRACHEA-OPEN
80705	FRACTURE FIVE RIBS-CLOSE	8090	FRACTURE TRUNK BONE-CLOS
80706	FRACTURE SIX RIBS-CLOSED	8091	FRACTURE TRUNK BONE-OPEN
80707	FRACTURE SEVEN RIBS-CLOS	8600	TRAUM PNEUMOTHORAX-CLOSE
80708	FX EIGHT/MORE RIB-CLOSED	8601	TRAUM PNEUMOTHORAX-OPEN
80709	FX MULT RIBS NOS-CLOSED	8602	TRAUM HEMOTHORAX-CLOSED
80710	FRACTURE RIB NOS-OPEN	8603	TRAUM HEMOTHORAX-OPEN
80711	FRACTURE ONE RIB-OPEN	8604	TRAUM PNEUMOHEMOTHOR-CL
80712	FRACTURE TWO RIBS-OPEN	8605	TRAUM PNEUMOHEMOTHOR-OPN
80713	FRACTURE THREE RIBS-OPEN	86100	HEART INJURY NOS-CLOSED
80714	FRACTURE FOUR RIBS-OPEN	86101	HEART CONTUSION-CLOSED
80715	FRACTURE FIVE RIBS-OPEN	86102	HEART LACERATION-CLOSED
80716	FRACTURE SIX RIBS-OPEN	86103	HEART CHAMBER LACERAT-CL
80717	FRACTURE SEVEN RIBS-OPEN	86110	HEART INJURY NOS-OPEN
80718	FX EIGHT/MORE RIBS-OPEN	86111	HEART CONTUSION-OPEN
80719	FX MULT RIBS NOS-OPEN	86112	HEART LACERATION-OPEN

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86113	HEART CHAMBER LACER-OPN	90181	INJ INTERCOSTAL ART/VEIN
86120	LUNG INJURY NOS-CLOSED	90182	INJ INT MAMMARY ART/VEIN
86121	LUNG CONTUSION-CLOSED	90183	INJ MULT THORACIC VESSEL
86122	LUNG LACERATION-CLOSED	90189	INJ THORACIC VESSEL NEC
86130	LUNG INJURY NOS-OPEN	9019	INJ THORACIC VESSEL NOS
86131	LUNG CONTUSION-OPEN	9110	ABRASION TRUNK
86132	LUNG LACERATION-OPEN	9111	ABRASION TRUNK-INFECTED
8620	DIAPHRAGM INJURY-CLOSED	9118	SUPERFIC INJ TRUNK NEC
8621	DIAPHRAGM INJURY-OPEN	9119	SUPERFIC INJ TRUNK NEC-INF
86221	BRONCHUS INJURY-CLOSED	9220	CONTUSION OF BREAST
86222	ESOPHAGUS INJURY-CLOSED	9221	CONTUSION OF CHEST WALL
86229	INTRATHORACIC INJ NEC-CL	9223	<i>BACK CONTUSION</i>
86231	BRONCHUS INJURY-OPEN	92231	BACK CONTUSION
86232	ESOPHAGUS INJURY-OPEN	92233	INTERSCPLR REG CONTUSION
86239	INTRATHORAC INJ NEC-OPEN	9228	MULIPLE CONTUSION TRUNK
8628	INTRATHORACIC INJ NOS-CL	9229	CONTUSION TRUNK NOS
8629	INTRATHORAC INJ NOS-OPEN	92611	CRUSHING INJURY BACK
8750	OPEN WOUND OF CHEST	92619	CRUSHING INJ TRUNK NEC
8751	OPEN WOUND CHEST-COMPL	9268	MULT CRUSHING INJ TRUNK
8760	OPEN WOUND OF BACK	9269	CRUSHING INJ TRUNK NOS
8761	OPEN WOUND BACK-COMPL	9290	CRUSH INJ MULT SITE NEC
9010	INJURY THORACIC AORTA	9299	CRUSHING INJURY NOS
9011	INJ INNOMIN/SUBCLAV ART	9541	INJ SYMPATH NERVE NEC
9012	INJ SUPERIOR VENA CAVA	9548	INJURY TRUNK NERVE NEC
9013	INJ INNOMIN/SUBCLAV VEIN	9549	INJURY TRUNK NERVE NOS
90140	INJ PULMONARY VESSEL NOS	95911	INJURY OF CHEST WALL NEC
90141	INJURY PULMONARY ARTERY	95919	TRUNK INJURY-SITES NEC
90142	INJURY PULMONARY VEIN	9599	INJURY-SITE NOS

¹ Italicized codes are not active in the current fiscal year.

ICD-9-CM Pleural effusion diagnosis codes¹:

0101	<i>TUBERCULOUS PLEURISY IN PRIMARY PROGRESSIVE TUBERCULOSIS</i>	01176	TB PNEUMOTHORAX-OTH TEST
01010	PRIM TB PLEURISY-UNSPEC	0120	<i>TUBERCULOUS PLEURISY</i>
01011	PRIM TB PLEURISY-NO EXAM	01200	TB PLEURISY-UNSPEC
01012	PRIM TB PLEUR-EXAM UNKN	01201	TB PLEURISY-NO EXAM
01013	PRIM TB PLEURIS-MICRO DX	01202	TB PLEURISY-EXAM UNKN
01014	PRIM TB-PLEURISY-CULT DX	01203	TB PLEURISY-MICRO DX
01015	PRIM TB PLEURIS-HISTO DX	01204	TB PLEURISY-CULT DX
01016	PRIM TB PLEURIS-OTH TEST	01205	TB PLEURISY-HISTOLOG DX
0117	<i>TUBERCULOUS PNEUMOTHORAX</i>	01206	TB PLEURISY-OTH TEST
01170	TB PNEUMOTHORAX-UNSPEC	1972	SECOND MALIG NEO PLEURA
01171	TB PNEUMOTHORAX-NO EXAM	5111	BACT PLEUR/EFFUS NOT TB
01172	TB PNEUMOTHORAX-EXAM UNKN	5118	<i>OTHER SPECIFIED FORM OF EFFUSION, EXCEPT TUBERCULOUS</i>
01173	TB PNEUMOTHORAX-MICRO DX	51181	MALIGNANT PLEURAL EFFUSN
01174	TB PNEUMOTHORAX-CULT DX	51189	EFFUSION NEC EXC TB
01175	TB PNEUMOTHORAX-HISTO DX	5119	PLEURAL EFFUSION NOS

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ICD-9-CM Diaphragmatic surgery repair procedure codes¹:

537	<i>ABD REPAIR-DIAPHR HERNIA</i>	5381	DIAPHRAGMATIC PPLICATION
5371	LAP ABD REP-DIAPHR HERN	5382	PARASTERN HERNIA REPAIR
5372	OPN ABD DIAPHRM HERN NEC	5383	LAP THORC APP-DIAPH HERN
5375	ABD REP-HAPHR HERN NOS	5384	OPN THORC DIAPH HERN NEC
5380	THOR REP-DIAH HERN NOS		

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ICD-9-CM Thoracic surgery procedure codes¹:

0522	CERVICAL SYMPATHECTOMY	0781	OTH PART EXCISION THYMUS
0523	LUMBAR SYMPATHECTOMY	0782	OTH TOTL EXCISION THYMUS
0529	OTHER SYMPATHECTOMY	0783	THORAC PART EXISN THYMUS
0780	THYMECTOMY NOS	0784	THORAC TOTAL EXC THYMUS

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3121	MEDIASTINAL TRACHEOSTOMY	3405	PIEUOPERITONEAL SHUNT
3145	OPN BX LARYNX OR TRACHEA	3409	OTHER PLEURAL INCISION
3173	TRACHEA FUSTYLA CLOS NEC	341	INCISION OF MEDIASTINUM
3179	OTHER TRACHEAL REPAIR	Diagnostic procedures on chest wall, pleura, mediastinum, and diaphragm	
3199	OTHER TRACHEAL OPERATION	3420	THORACOSCOPIC PLEURAL BX
3209	OTHER DESTRUC BRONC LES	3421	TRANSPLEURA THORACOSOCOPY
321	OTHER BRONCHIAL EXCISION	3422	MEDIASTINOSCOPY
3220	THORAC EXC LUNG LESION	3423	CHEST WALL BIOPSY
Local excision or destruction of lesion or tissue of lung		3424	PLEURAL BIOPSY NEC
3221	EMPHYSEMA BLEB PPLICATION	3425	CLOS MEDIASTINAL BIOPSY
3222	LUNG VOL REDUCTION SURG	3426	OPEN MEDIASTINAL BIOPSY
3223	OPEN ABLTN LUNG LES/TISS	3427	BIOPSY OF DIAPHRAGM
3224	PERC ABLTN LUNG LES/TISS	3428	DX PROCEDURE THORAX NEC
3225	THOR ABLTN LUNG LES/TISS	3429	DX PROC MEDIASTINUM NEC
3226	ABLTN LUNG TISS NEC/NOS	343	DESTRUCT MEDASTIN LES
3227	BRNC THRMPSTY,ABLT MSCL	344	DESTRUCT CHEST WALL LES
3228	ENDOSC DESTRUC LUNG LES	3451	DECORTICATION OF LUNG
3229	DESTROY LOC LUNG LES NEC	3452	THORACOSCOPC DECORT LUNG
323	SEGMENTAL RESECTION OF LUNG	3459	OTHER PLEURAL EXCISION
3230	THORAC SEG LUNG RESECT	Repair of chest wall	
3239	OTH SEG LUNG RESECT NOS	3471	SUTURE CEHST WALL LACER
324	LOBECTOMY OF LUNG	3472	THORACOSTOMY CLOSURE
3241	THORAC LOBECTOMY LUNG	3473	CLOS THORACIC FISTUL NEC
3249	LOBECTOMY OF LUNG NEC	3474	PECTUS DEFORMITY REPAIR
325	COMPLETE PNEUMONECTOMY	3479	OTHER CEHST WALL REPAIR
3250	THORACOSPC PNEUMONECTOMY	Operations on diaphragm	
3259	OTHER PNEUMONECTOMY NOS	3481	EXCISE DIAPHRAGM LESION
326	RAD DISSEC THORAC STRUCT	3482	SUTURE DIAPHRAGM LACERAT
329	OTHER EXCISION OF LUNG	3483	CLOSE DIAPHRAGM FISTULA
330	INCISION OF BRONCHUS	3484	OTHER DIAPHRAGM REPAIR
331	INCISION OF LUNG	3485	IMPLANT DIAPHRA PACEMAKE
3320	THORACOSCOPC LUNG BIOPSY	3489	DIAPHRAGM OPERATION NEC
3325	OPEN BRONCHIAL BIOPSY	3493	REPAIR OF PLEURA
3326	BLOSED LUNG BIOPSY	3499	THORACIC OPERATION NEC
3327	CLOS ENDOSCOPIC LUNG BX	Operations on thoracic duct	
3328	OPEN LUNG BIOPSY	4061	THORAC DUCT CANNULATION
3329	BRONCH/LUNG DX PROC NEC	4062	THORACIC DUCT FISTULIZAT
3331	DESTR PHRENUNG COLLAPS	4063	CLOSE THORACIC DUCT FIST
3332	PNEMOTHORAX-LUNG COLLAPS	4064	LIGATE THORACIC DUCT
3333	PNEUMOPERIT-LUNG COLLAPS	4069	THROACIC DUCT OP NEC
3334	PNEUMOPERIT-LUNG COLLAPS	Esophagotomy	
3339	SURG COLLAPS OF LUNG NEC	4201	ESOPHAGEAL WEB INCISION
Repair and plastic operation on lung and bronchus		4209	ESOPHAGEAL INCISION NEC
3341	BRONCHIAL LACERAT SUTURE	4210	ESOPHAGOSTOMY NOS
3342	BRONCHIAL FISTULA CLOS	4211	CERVIAL ESOPHAGOSTOMY
3343	LUNG LACERATION CLOSURE	4212	ESOPH POUCH EXTERIORIZAT
3348	BRONCHIAL REPAIR NEC	4219	EXT FISTULIZAT ESOPH NEC
3349	LUNG REPAIR NEC	4221	ESOPHAGOSCOPY BY INCIS
Lung transplant		4225	OPEN BIOPSY OF ESOPHAGUS
335	LUNG TRANSPLANTATION	4231	LOC EXCIS ESOPH DIVERTIC
3350	LUNG TRANSPLANT NOS	4232	LOCAL EXCIS ESOPHAG NEC
3351	UNILAT LUNG TRANSPLANT	Excision of esophagus	
3352	BILAT LUNG TRANSPLANT	4239	DESTRUCT ESOPHAG LES NEC
336	COMB HEART/LUNG TRANSPLA	4240	ESOPHAGECTOMY NOS
3392	BRONCHIAL LIGATION	4241	PARTIAL ESOPHAGECTOMY
3393	PUNCTURE OF LUNG	4242	TOTAL ESOPHAGECTOMY
3398	BRONCHIAL OPERATION NEC	Intrathoracic anastomosis of exophagus	
3399	LUNG OPERATION NEC	4251	THORAC ESOPHAGUESOPHAGOS
3401	INCISION OF CHEST WALL	4252	THROAC ESOPHAGOGASTROST
3402	EXPLORATORY THORACOTOMY		
3403	REOPEN THORACOTOMY SITE		

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4253	THORAC SM BOWEL INTERPOS
4254	THORAC ESOPHAGOENTER NEC
4255	THORAC LG BOWEL INTERPOS
4256	THORAC ESOPHAGOCOLOS NEC
4258	THORAC INTERPOSITION NEC
4259	THORAC ESOPHAG ANAST NEC

Antesternal anastomosis

4261	STERN ESOPHAGUESOPHAGOST
4262	STERN ESOPHAGOGASTREOSTOM
4263	STERN SM BOWEL INTERPOS
4264	STERN ESOPHAGOENTER NEC
4265	STERN LG BOWEL INTERPOS
4266	STERN ESOPHAGOCOLOS NEC
4268	STERN INTERPOSITION NEC
4269	STERN ESOPHAG ANAST NEC

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ICD-9-CM Lung or pleural biopsy procedure codes:

3326	CLOSED LUNG BIOPSY
3328	OPEN LUNG BIOPSY

Other repair of esophagus

427	ESOPHAGOMYOTOMY
4281	INSERT PERM TUBE ESOPHAG
4282	SUTURE ESOPHAGEAL LACER
4283	ESOPHAGOSTOMY CLOSURE
4284	ESOPH FISTULA REPAIR NEC
4285	ESOPHAG STRICTURE REPAIR
4286	PROD SUBQ TUNNEL NO ANAS
4287	ESOPHAGEAL GRAFT NEC
4289	ESOPHAGEAL REPAIR NEC
4465	ESOPHAGOGASTROPLASTY
4466	CREAT ESOPHAGASTRO SPHINB
8104	DRSL/DRSLUMB DUS ANT/ANT
8134	REFUS DRS/DRSLM ANT/ANT

ICD-9-CM Cardiac procedure codes¹:

3506	TRNSAPCL REP AORTC VALVE
3508	TRNSAPCL REP PULM VALVE
3510	OPEN VALVULOPLASTY NOS
3511	OPN AORTIC VALVULOPLASTY
3512	OPN MITRAL VALVULOPLASTY
3513	OPN PULMON VALVULOPLASTY
3514	OPN TRICUS VALVULOPLASTY
3520	OPN/OTH REP HRT VLV NOS
3521	OPN/OTH REP AORT VLV-TIS
3522	OPN/OTH REP AORTIC VALVE
3523	OPN/OTH REP MTRL VLV-TIS
3524	OPN/OTH REP MITRAL VALVE
3525	OPN/OTH REP PULM VLV0TIS
3526	OPN/OTH REPL PUL VALVE
3527	OPN/OTH REP TCSPD VLV-TS
3528	OPN/OTH REPL TCSPD VALVE
3531	PAPILLARY MUSCLE OPS
3532	CHORDAE TENDINEAE OPS
3533	ANNULOPLASTY
3534	INFUNDIBULECTOMY
3535	TRABECUL CARNEAE CORD OP
3539	TISS ADH TO VALV OPS NEC
3550	PROSTH REP HRT SEPTA NOS
3551	PROS REP ATRIAL DEF-OPN
3553	PROS REP VENTRIC DEF-OPN
3554	PROS REP ENDOCAR CUSHION
3560	GRFT REPAIR HRT SEPT NOS
3561	GRAFT REPAIR VENTRIC DEF
3562	GRAFT REPAIR VENTRIC DEF
3563	GRFT REP ENDOCAR CUSION
3570	HEART SEPTA REPAIR NOS
3571	ATRIA SEPTA DEF REP NEC
3572	VENTR SEPTA DEF REP NEC
3573	ENDOCAR CUSION REP NEC
3581	TOT REPAIR TETRAL FALLOW
3582	TOTAL REPAIR OF TAPVC
3583	TOT REP TRUNCUS ARTERIOS
3584	TOT COR TRASNPOS GRT VES
3591	INTERAT VEN RETRN TRANSP
3592	CONDUIT RT VENT-PUL ART

3424	PLEURAL BIOPSY NEC
3593	CONDUIT LEFT VENTR-AORTA
3594	CONDUIT ARTIUM-PULM ART
3595	HEART REPAIR REVISION
3597	PERC MTRL VLV REPR W IMP
3598	OTHER HEART SEPTA OPS
3599	OTHER HEART VALVE OPS
3603	OPEN CORONRY ANGIOPLASTY
3610	AORTOCORONARY BYPASS NOS
3611	AOROTOCO BYPAS-1 COR ART
3612	AORTOCOR BYPAS-2 COR ART
3613	AORTOCOR BYPAS-3 COR ART
3614	AORTCOR BYPAS-4+ COR ART
3615	1 INT MAM-COR ART BYPASS
3616	2 INTO MAM-COR ART BYPASS
3617	ABD-CORON ARTERY BYPASS
3619	HRT REVAS BYPS ANAS NEC
362	ARTERIAL IMPLANT REVASC
3631	OPEN CHEST TRANS REVASC
3632	OTH TRANSMYO REVASCULAR
3639	OTH HEART REVASCULAR
3691	CORON VESS ANEURYSM REP
3699	HEART VESSEL OP NEC
370	PERICARDIOCENTESIS
3710	INCISION OF HEART NOS
3711	CARDIOTOMY
3712	PERICARDIOTOMY
3731	PERICARDIECTOMY
3732	HEART ANEURYSM EXCISION
3733	EXC/DEST HRT LESION OPEN
3735	PARTIAL VENTRICULECTOMY
3736	EXC,DESTRCT,EXCLUS LAA
3737	EXC/DEST HRT LEC, THRSPC
3741	IMPL CARDIAC SUPPORT DEV
3749	HEART/PERICARD REPR NEC
3751	HEART TRANSPLANTATION
3752	IMP TOT INT BI HT RP SYS
3753	REPL/REP THR UNT TOT HRT
3754	REPL/REP OTH TOT HRT SYS
3755	REM INT BIVENT HRT SYS
3760	IMP BIVN EXT HRT AST SYS

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3761	PULSATION BALLOON IMPLAN	3844	RESECT ABDOM AORTA W REPL
3762	INSRT NONIMPL CIRC DEV	3845	RESECT THORAC VES W REPL
3763	REPAIR HEART ASSIST SYS	3864	EXCISION OF AORTA
3764	REMOV EXT HRT ASSIST SYS	3865	THORACIC VESSEL EXCISION
3765	IMP VENT EXT HRT AST SYS	3884	OCCLUDE AORTA NEC
3766	IMPLANTABLE HRT ASSIST	3885	OCCLUDE THORACIC VES NEC
3767	IMP CARDIOMYOSTIMUL SYS	390	SYSTEMIC-PULM ART SHUNT
3791	OPEN CHEST CARDIAC MASSAG	3921	CAVAL-PULMON ART ANASTOM
3804	INCISION OF AORTA	3922	AORTA-SUBCLV-CAROT BYPAS
3805	THORACIC VESSEL INC NEC	3923	INTRATHORACIC SHUNT NEC

¹ Bolded codes are new to the current fiscal year.

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,ABLT MSCL	4467	LAP CREAT ESOPH SPHINCT
435	PROXIMAL GASTRECTOMY	7781	OTH CHEST 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.