



## **Pediatric Quality Indicator 09 (PDI 09) Postoperative Respiratory Failure Rate**

**August 2017**

**Provider-Level Indicator**

**Type of Score: Rate**

### **Prepared by:**

Agency for Healthcare Research and Quality

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[www.qualityindicators.ahrq.gov](http://www.qualityindicators.ahrq.gov)

### **DESCRIPTION**

Postoperative respiratory failure (secondary diagnosis), prolonged mechanical ventilation, or reintubation cases per 1,000 elective surgical discharges for patients ages 17 and younger. Excludes cases with principal diagnosis for acute respiratory failure; cases with secondary diagnosis for acute respiratory failure present on admission; cases in which tracheostomy is the only operating room procedure or in which tracheostomy occurs before the first operating room procedure; cases with neuromuscular disorders or degenerative neurological disorders; cases with laryngeal, pharyngeal or craniofacial surgery; cases with craniofacial anomalies that had a procedure for the face; cases with esophageal resection, lung cancer, lung transplant cases; cases with respiratory or circulatory diseases; and obstetric discharges.

*[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.]*

## NUMERATOR

Discharges, among cases meeting the inclusion and exclusion rules for the denominator, with either

- any secondary ICD-9-CM diagnosis codes for acute respiratory failure
- any-listed ICD-9-CM procedure codes for a mechanical ventilation for 96 consecutive hours or more that occurs zero or more days after the first major operating room procedure code (based on days from admission to procedure)
- any-listed ICD-9-CM procedure codes for a mechanical ventilation for less than 96 consecutive hours (or undetermined) that occurs two or more days after the first major operating room procedure code (based on days from admission to procedure)
- any-listed ICD-9-CM procedure codes for a reintubation that occurs one or more days after the first major operating room procedure code (based on days from admission to procedure)

### *Acute respiratory failure diagnosis codes for discharges on or after October 1, 2011: (ACURF2D)*

51851	Acute Respiratory Failure Following Trauma and Surgery	51853	Acute And Chronic Respiratory Failure Following Trauma and Surgery
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### *Acute respiratory failure diagnosis codes for discharges prior to October 1, 2011: (ACURFID)*

51881	Acute Respiratory Failure	51884	Acute And Chronic Respiratory Failure
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### *Mechanical ventilation for 96 consecutive hours or more procedure code: (PR9672P)*

9672	Continuous Mechanical Ventilation For 96 Consecutive Hrs Or More
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### *Mechanical ventilation for undetermined duration procedure codes: (PR9670P)*

9670	Continuous Mechanical Ventilation Of Unspec Duration
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### *Mechanical ventilation for less than 96 consecutive hours procedure codes: (PR9671P)*

9671	Continuous Mechanical Ventilation For Less Than 96 Consecutive Hrs
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### *Reintubation procedure code: (PR9604P)*

9604	Insert Endotracheal Tube
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**DENOMINATOR**

Elective surgical discharges, for patients ages 17 years and younger, with any-listed ICD-9-CM procedure codes for an operating room procedure. Elective surgical discharges are defined by specific MS-DRG codes with admission type recorded as elective (SID ATYPE=3).

[\*Appendix A - Operating Room Procedure Codes\*](#)

[\*Appendix C - Surgical MS-DRGs\*](#)

## DENOMINATOR EXCLUSIONS

Exclude cases:

- with a principal ICD-9-CM diagnosis code (or secondary diagnosis present on admission) of acute respiratory failure, among patients otherwise qualifying for the numerator
- where the only operating room procedure is tracheostomy
- where a procedure for tracheostomy occurs before the first operating room procedure<sup>1</sup>
- with any-listed ICD-9-CM diagnosis codes for neuromuscular disorder
- with any-listed ICD-9-CM procedure codes for laryngeal, pharyngeal, nose, mouth, or facial surgery
- with any-listed ICD-9-CM procedure codes for esophageal resection
- with any-listed ICD-9-CM procedure codes for lung cancer resection
- with any-listed ICD-9-CM procedure codes for procedure on the nose, mouth and pharynx
- with any-listed ICD-9-CM diagnosis codes for degenerative neurological disorder
- with any-listed ICD-9-CM procedure codes for lung transplant
- neonates with birth weight less than 500 grams (Birth Weight Category 1)
- MDC 4 (diseases/disorders of respiratory system)
- MDC 5 (diseases/disorders of circulatory system)
- 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)

<sup>1</sup>If day of procedure is not available in the input data file, the rate may be slightly lower than if the information was available.

[Appendix I - Definitions of, Neonate, Newborn, Normal Newborn, and Outborn](#)  
[Appendix L - Low Birth Weight Categories](#)

### *Tracheostomy procedure codes: (TRACHIP)*

311	Temporary Tracheostomy	3129	Other Perm Tracheostomy
3121	Mediastinal Tracheostomy	3174	Revision Of Tracheostomy

### *Neuromuscular disorder diagnosis codes: (NEUROMD)*

3570	Ac Infect Polyneuritis	35800	Myasthna Grvs W/o Ac Exac
3581	Myasthenia In Oth Dis	35801	Myasthna Gravs W Ac Exac
3582	Toxic Myoneural Disorder	35830	Lambert-eaton Syndrome, Unspecified
3588	Myoneural Disorders Nec	35831	Lambert-eaton Syndrome In Neoplastic Disease
3589	Myoneural Disorders Nos	35839	Lambert-eaton Syndrome In Other Diseases Classified Elsewhere

3590	Cong Hered Musc Dystrophy	35921	Myotonic Muscular Dystrophy
3591	Hered Prog Musc Dystrophy	35922	Myotonia Congenita
3592	Myotonic Disorders	35923	Myotonic Chondrodystrophy
3593	Famil Periodic Paralysis	35929	Other Unspecified Myotonic Disorder
3594	Toxic Myopathy	35971	Inclusion Body Myositis
3595	Myopathy In Endocrin Dis	35979	Inflm/immune Myopath Nec
3596	Infl Myopathy In Oth Dis	35981	Critical Illness Myopathy
3599	Myopathy Nos	35989	Myopathies Nec

***Laryngeal, pharyngeal, nose, mouth and pharynx surgery procedure codes: (NUCRANP)***

214	Resection Of Nose	2743	Excision Of Lip Les Nec
229	Other Nasal Sinus Ops	2749	Excision Of Mouth Nec
251	Destruction Tongue Les	2753	Closure Of Mouth Fistula
252	Partial Glossectomy	2754	Repair Of Cleft Lip
253	Complete Glossectomy	2755	Full-thick Grft To Mouth
254	Radical Glossectomy	2756	Skin Graft To Mouth Nec
270	Drain Face & Mouth Floor	2757	Pedicle Attach To Mouth
271	Incision Of Palate	2759	Mouth Repair Nec
280	Peritonsillar I & D	2761	Suture Of Palate Lacerat
284	Excision Of Tonsil Tag	2762	Cleft Palate Correction
285	Excision Lingual Tonsil	2763	Revis Cleft Palat Repair
290	Pharyngotomy	2764	Insert Palatal Implant (begin 2004)
292	Exc Branchial Cleft Cyst	2769	Oth Plastic Repair Palat
293	Destruct Pharyngeal Les (begin 1980 End 1991)	2771	Incision Of Uvula
294	Plastic Op On Pharynx	2772	Excision Of Uvula
303	Complete Laryngectomy	2773	Repair Of Uvula
304	Radical Laryngectomy	2779	Other Uvula Operations
310	Laryngo-tracheal Operations	2792	Mouth Incision Nos
313	Other Incision Of Larynx Or Trachea	2799	Oral Cavity Ops Nec
315	Local Excision Or Destruction Of Lesion Or Tissue Of Trachea	2891	Incis To Remov Tonsil Fb
2161	Diather/cryo Turbinectom	2892	Excis Tonsil/adenoid Les
2162	Turbinate Fracture	2899	Tonsil/adenoid Ops Nec
2169	Turbinectomy Nec	2931	Cricopharyngeal Myotomy (begin 1991)
2172	Open Reduction Nasal Fx	2932	Pharyngeal Diverticulec (begin 1991)
2199	Nasal Operation Nec	2933	Pharyngectomy (begin 1991)
2231	Radical Maxillary Antrot	2939	Excis/destr Les Phar Nec (begin 1991)
2239	Ext Maxillary Antrot Nec	2951	Suture Of Pharyngeal Lac
2241	Frontal Sinusotomy	2952	Clos Branch Cleft Fistul

2242	Frontal Sinusectomy	2953	Clos Pharynx Fistula Nec
2250	Sinusotomy Nos	2954	Lysis Pharyngeal Adhes
2251	Ethmoidotomy	2959	Pharyngeal Repair Nec
2252	Sphenoidotomy	2991	Dilation Of Pharynx
2253	Multiple Sinus Incision	2992	Divis Glossopharyng Nerv
2260	Sinusectomy Nos	2999	Pharyngeal Operation Nec
2261	C-luc Exc Max Sinus Les	3009	Other Excision Or Destruction Of Lesion Or Tissue Of Larynx
2262	Exc Max Sinus Lesion Nec	3021	Epiglottidectomy
2263	Ethmoidectomy	3022	Vocal Cordectomy
2264	Sphenoidectomy	3029	Other Partial Laryngectomy
2271	Nasal Sinus Fistula Clos	3161	Laryngo-tracheal Operations
2279	Nasal Sinus Repair Nec	3162	Laryngo-tracheal Operations
2559	Repair Of Tongue Nec	3163	Laryngo-tracheal Operations
2594	Other Glossotomy	3164	Laryngo-tracheal Operations
2599	Tongue Operation Nec	3169	Other Repair Of Larynx
2621	Salivary Cyst Marsupial	3171	Laryngo-tracheal Operations
2629	Saliv Lesion Excis Nec	3172	Laryngo-tracheal Operations
2630	Sialoadenectomy Nos	3173	Closure Of Other Fistula Of Trachea
2631	Partial Sialoadenectomy	3175	Reconstruction Of Trachea And Construction Of Artificial Larynx
2632	Complete Sialoadenectomy	3179	Other Repair And Plastic Operations On Trachea
2641	Suture Of Saliv GlnD Lac	3191	Laryngo-tracheal Operations
2642	Salivary Fistula Closure	3192	Laryngo-tracheal Operations
2649	Salivary Repair Nec	3193	Laryngo-tracheal Operations
2699	Salivary Operation Nec	3194	Laryngo-tracheal Operations
2731	Loc Exc Bony Palate Les	3195	Laryngo-tracheal Operations
2732	Wide Exc Bony Palate Les	3198	Other Operations On Larynx
2742	Wide Excision Of Lip Les	3199	Other Operations On Trachea

***Lung transplant procedure codes: (LUNGTRANSP)***

0091	Transplant from live related donor	336	Combined heart-lung transplantation
0092	Transplant from live non-related donor	3350	Lung transplantation, not otherwise specified
0093	Transplant from cadaver	3351	Unilateral lung transplantation
		3352	Bilateral lung transplantation

***Craniofacial anomalies diagnosis codes: (CRANIID)***

74483	Macrostomia	7483	Congenital Anomalies Of Skull And Face Bones
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74484	Microstomia	7560	Tracheomalacia And Congenital Tracheal Stenosis
7449	Unspecified Anomalies Of Face And Neck		

***Esophageal resection procedure codes: (PRESOP)***

424	Esophagectomy	4254	Thorac Esophagoenter Nec
425	Thorac Esophag Anast	4255	Thorac Lg Bowel Interpos
426	Stern Esophag Anast	4256	Thorac Esophagocolos Nec
4210	Esophagostomy	4258	Thorac Interposition Nec
4211	Esophagostomy	4259	Thorac Esophag Anast Nec
4212	Esophagostomy	4261	Stern Esophagoesophagost
4219	Esophagostomy	4262	Stern Esophagogastrostom
4240	Esophagectomy Nos	4263	Stern Sm Bowel Interpos
4241	Partial Esophagectomy	4264	Stern Esophagoenter Nec
4242	Total Esophagectomy	4265	Stern Lg Bowel Interpos
4251	Thorac Esophagoesophagos	4266	Stern Esophagocolos Nec
4252	Thorac Esophagogastrost	4268	Stern Interposition Nec
4253	Thorac Sm Bowel Interpos	4269	Stern Esophag Anast Nec

***Lung cancer procedure codes: (LUNG CIP)***

3230	Thoracoscopic Surgery	3249	Lobectomy Of Lung Nec
3239	Oth Seg Lung Resect Nos	3250	Thoracoscopic Surgery
3241	Thoracoscopic Surgery	3259	Other Pneumonectomy Nos

***Degenerative neurological disorder diagnosis codes: (DGNEUID)***

2900	Senile Dementia Uncomp	29010	Presenile Dementia
2903	Senile Delirium	29011	Presenile Delirium
2908	Senile Psychosis Nec	29012	Presenile Delusion
2909	Senile Psychot Cond Nos	29013	Presenile Depression
2930	Acute Delirium	29020	Senile Delusion
2931	Subacute Delirium	29021	Senile Depressive
2940	Amnestic Syndrome	29040	Arterioscler Dement Nos
2941	Dementia In Oth Diseases	29041	Arterioscler Delirium
2948	Organic Brain Synd Nec	29042	Arterioscler Delusion
2949	Organic Brain Synd Nos	29043	Arterioscler Depressive
3100	Frontal Lobe Syndrome	29410	Dementia In Oth Diseases W0 Behavioral Oct00-
3102	Postconcussion Syndrome	29411	Dementia In Oth Diseases Wbehavioral Oct00-
3108	Nonpsychot Brain Syn Nec	31081	Psedobulbar Affect
3109	Nonpsychot Brain Syn Nos	31089	Other Specified Nonpsychotic
3310	Alzheimers Disease	33111	Picks Disease

3311	Frontotemporal Dementia	33119	Other Frontotemporal Dementia
3312	Senile Degenerat Brain	33182	Dementia With Lewy Bodies
3316	Corticobasal Degeneration	34882	Brain Death

***Acute respiratory failure diagnosis codes (exclusion only) for discharges on or after October 1, 2011: (ACURF3D)***

51851	Acute Respiratory Failure Following Trauma And Surgery	51883	Chronic Respiratory Failure
51853	Acute And Chronc Respiratory Failure Following Trauma And Surgery	51884	Acute And Chronic Respiratory Failure
51881	Acute Respiratory Failure		

***Acute respiratory failure diagnosis codes for discharges prior to October 1, 2010: (ACURFID)***

51881	Acute Respiratory Failure	51884	Acute And Chronic Respiratory Failure
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