

Postoperative Respiratory Failure Rate Technical Specifications

Pediatric Quality Indicators #9 (PDI #9) AHRQ Quality Indicators™, Version 4.5, May 2013 Provider-Level Indicator Type of Score: Rate

Description

Postoperative respiratory failure (secondary diagnosis), mechanical ventilation, or reintubation cases per 1,000 elective surgery discharges for patients ages 17 years and younger. Excludes 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, laryngeal or pharyngeal surgery, craniofacial anomalies that had a procedure for the face, esophageal resection, lung cancer, or degenerative neurological disorders; cases with a procedure on the nose, mouth, or pharynx; cases with respiratory or circulatory diseases; neonates with a birth weight less than 500 grams; 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; or
- 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); or
- 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); or
- 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)

ICD-9-CM Acute respiratory failure diagnosis codes¹:

| | | | |
|-------|--------------------------|-------|---------------------------|
| 51851 | AC RESP FLR FOL TRMA/SRG | 51881 | ACUTE RESPIRATORY FAILURE |
| 51853 | AC/CHR RSP FLR FOL TR/SG | 51884 | ACUTE & CHRONC RESP FAIL |

¹The 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 Mechanical ventilation for 96 consecutive hours or more procedure code:
9672 CONT INV MEC VEN 96+ HRS

ICD-9-CM Mechanical ventilation for less than 96 consecutive hours (or undetermined) procedure codes:

9670 CON INV MEC VEN-UNSP DUR 9671 CONT INV MEC VEN <96 HRS

ICD-9-CM Reintubation procedure code:
9604 INSERT ENDOTRACHEAL TUBE

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 DRG or MS-DRG codes with admission type recorded as elective (SID ATYPE=3).

See *Pediatric Quality Indicators Appendices*:

- Appendix A – Operating Room Procedure Codes
- Appendix B – Surgical DRGs
- Appendix C – Surgical MS-DRGs

Exclude cases:

- with a principal ICD-9-CM diagnosis code (or secondary diagnosis present on admission) of acute respiratory failure (see above)
- where the only operating room procedure is tracheostomy
- where a procedure for tracheostomy occurs before the first operating room procedure[†]
- with any-listed ICD-9-CM diagnosis codes for neuromuscular disorder
- with any-listed ICD-9-CM procedure codes for laryngeal or pharyngeal surgery
- with any-listed ICD-9-CM procedure codes for the face and any-listed ICD-9-CM diagnosis codes for craniofacial anomalies
- with any-listed ICD-9-CM procedure codes for esophageal resection
- with any-listed ICD-9-CM procedure codes for lung cancer
- 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
- 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)

[†] If day of procedure is not available in the input data file, the rate may be slightly lower than if the information was available.

See *Pediatric Quality Indicators Appendices*:

- Appendix I – Definitions of Neonate, Newborn, Normal Newborn, and Outborn
- Appendix L – Low Birth Weight Categories

ICD-9-CM Tracheostomy procedure codes:

| | | | |
|------|--------------------------|------|--------------------------|
| 3121 | MEDIASTINAL TRACHEOSTOMY | 3174 | REVISION OF TRACHEOSTOMY |
| 3129 | OTHER PERM TRACHEOSTOMY | | |

ICD-9-CM Neuromuscular disorder diagnosis codes¹:

| | | | |
|-------|---------------------------|-------|----------------------------|
| 3570 | AC INFECT POLYNEURITIS | 35921 | MYOTONIC MUSCULAR DYSTRPHY |
| 35800 | MYSTHNA GRVS W/O AC EXAC | 35922 | MYOTONIA CONGENITA |
| 35801 | MYASTHNA GRAVS W AC EXAC | 35923 | MYOTONIC CHONDRODYSTRPHY |
| 3581 | MYASTHENIA IN OTH DIS | 35929 | OTHER MYOTONIC DISORDER |
| 3582 | TOXIC MYONEURAL DISORDER | 3593 | PERIODIC PARALYSIS |
| 35830 | LAMBERT-EATON SYND NOS | 3594 | TOXIC MYOPATHY |
| 35831 | LAMBERT-EATON SYND NEOPL | 3595 | MYOPATHY IN ENDOCRIN DIS |
| 35839 | LAMBERT-EATON SYN OT DIS | 3596 | INFL MYOPATHY IN OTH DIS |
| 3588 | MYONEURAL DISORDERS NEC | 35971 | INCLUSION BODY MYOSITIS |
| 3589 | MYONEURAL DISORDERS NOS | 35979 | INFLM/IMMUNE MYOPATH NEC |
| 3590 | CONG HERED MUSC DYSTRPHY | 35981 | CRITICAL ILLNESS MYOPATHY |
| 3591 | HERED PROG MUSC DYSTRPHY | 35989 | MYOPATHIES NEC |
| 3592 | <i>MYOTONIC DISORDERS</i> | 3599 | MYOPATHY NOS |

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ICD-9-CM Laryngeal or pharyngeal surgery procedure codes:

| | | | |
|------|--------------------------|------|--------------------------|
| 253 | COMPLETE GLOSSECTOMY | 3022 | VOCAL CORDECTOMY |
| 254 | RADICAL GLOSSECTOMY | 3029 | OTHER PART LARYNGECTOMY |
| 2731 | LOC EXC BONY PALATE LES | 303 | COMPLETE LARYNGECTOMY |
| 290 | PHARYNGOTOMY | 304 | RADICAL LARYNGECTOMY |
| 2933 | PHARYNGECTOMY | 313 | INCIS LARYNX TRACHEA NEC |
| 2939 | EXCIS/DESTR LES PHAR NEC | 315 | LOCAL DESTRUC TRACH LES |
| 294 | PLASTIC OP ON PHARYNX | 3169 | OTHER LARYNGEAL REPAIR |
| 2953 | CLOS PHARYNX FISTULA NEC | 3173 | TRACHEA FISTULA CLOS NEC |
| 2959 | PHARYNGEAL REPAIR NEC | 3175 | TRACHEAL RECONSTRUCTION |
| 2991 | PHARYNGEAL DILATION | 3179 | OTHER TRACHEAL REPAIR |
| 3009 | DESTRUCT LARYNX LES NEC | 3198 | OTH LARYNGEAL OPERATION |
| 3021 | EPIGLOTTIDECTOMY | 3199 | OTHER TRACHEAL OPERATION |

ICD-9-CM Face procedure codes:

| | | | |
|------|--------------------------|------|--------------------------|
| 252 | PARTIAL GLOSSECTOMY | 2931 | CRICOPHARYNGEAL MYOTOMY |
| 2559 | REPAIR OF TONGUE NEC | 7646 | FACIAL BONE RECONSTR NEC |
| 2732 | WIDE EXC BONY PALATE LES | 7665 | SEG OSTEOPLASTY MAXILLA |
| 2762 | CLEFT PALATE CORRECTION | 7666 | TOT OSTEOPLASTY MAXILLA |
| 2763 | REVIS CLEFT PALAT REPAIR | 7669 | FACIAL BONE REPAIR NEC |
| 2769 | OTH PLASTIC REPAIR PALAT | 7691 | BONE GRAFT TO FACE BONE |

ICD-9-CM Craniofacial anomalies diagnosis codes:

| | | | |
|-------|-------------------------|------|--------------------------|
| 74483 | MACROSTOMIA | 7483 | LARYNGOTRACH ANOMALY NEC |
| 74484 | MICROSTOMIA | 7560 | ANOMAL SKULL/FACE BONES |
| 7449 | CONG FACE/NECK ANOM NOS | | |

ICD-9-CM Esophageal resection procedure codes¹:

| | | | |
|------|-----------------------------|------|--------------------------|
| 424 | <i>ESOPHAGECTOMY</i> | 4251 | THORAC ESOPHAGUESOPHAGOS |
| 4240 | ESOPHAGECTOMY NOS | 4252 | THORAC ESOPHAGOGASTROST |
| 4241 | PARTIAL ESOPHAGECTOMY | 4253 | THORAC SM BOWEL INTERPOS |
| 4242 | TOTAL ESOPHAGECTOMY | 4254 | THORAC ESOPHAGOENTER NEC |
| 425 | <i>THORAC ESOPHAG ANAST</i> | 4255 | THORAC LG BOWEL INTERPOS |

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| | | | |
|------|----------------------------|------|-------------------------|
| 4256 | THORAC ESOPHAGOCOLOS NEC | 4264 | STERN ESOPHAGOENTER NEC |
| 4258 | THORAC INTERPOSITION NEC | 4265 | STERN LG BOWEL INTERPOS |
| 4259 | THORAC ESOPHAG ANAST NEC | 4266 | STERN ESOPHAGOCOLOS NEC |
| 426 | <i>STERN ESOPHAG ANAST</i> | 4268 | STERN INTERPOSITION NEC |
| 4261 | STERN ESOPHAGUESOPHAGOST | 4269 | STERN ESOPHAG ANAST NEC |
| 4262 | STERN ESOPHAGOGASTROSTOM | 4399 | TOTAL GASTRECTOMY NEC |
| 4263 | STERN SM BOWEL INTERPOS | | |

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ICD-9-CM Lung cancer procedure codes:

| | | | |
|------|-------------------------|------|-------------------------|
| 3239 | OTH SEG LUNG RESECT NOS | 3259 | OTHER PNEUMONECTOMY NOS |
| 3249 | LOBECTOMY OF LUNG NEC | | |

ICD-9-CM Procedure on nose, mouth and pharynx procedure codes¹:

| | | | |
|------|--------------------------|------|--------------------------------|
| 214 | RESECTION OF NOSE | 2732 | WIDE EXC BONY PALATE LES |
| 2161 | DIATHER/CRYO TURBINECTOM | 2742 | WIDE EXCISION OF LIP LES |
| 2162 | TURBINATE FRACTURE | 2743 | EXCISION OF LIP LES NEC |
| 2169 | TURBINECTOMY NEC | 2749 | EXCISION OF MOUTH NEC |
| 2172 | OPEN REDUCTION NASAL FX | 2753 | CLOSURE OF MOUTH FISTULA |
| 2199 | NASAL OPERATION NEC | 2754 | REPAIR OF CLEFT LIP |
| 2231 | RADICAL MAXILLARY ANTROT | 2755 | FULL-THICK GRFT TO MOUTH |
| 2239 | EXT MAXILLARY ANTROT NEC | 2756 | SKIN GRAFT TO MOUTH NEC |
| 2241 | FRONTAL SINUSOTOMY | 2757 | PEDICLE ATTACH TO MOUTH |
| 2242 | FRONTAL SINUSECTOMY | 2759 | MOUTH REPAIR NEC |
| 2250 | SINUSOTOMY NOS | 2761 | SUTURE OF PALATE LACERAT |
| 2251 | ETHMOIDOTOMY | 2762 | CLEFT PALATE CORRECTION |
| 2252 | SPHENOIDOTOMY | 2763 | REVIS CLEFT PALAT REPAIR |
| 2253 | MULTIPLE SINUS INCISION | 2764 | INSERT PALATAL IMPLANT |
| 2260 | SINUSECTOMY NOS | 2769 | OTH PLASTIC REPAIR PALAT |
| 2261 | C-LUC EXC MAX SINUS LES | 2771 | INCISION OF UVULA |
| 2262 | EXC MAX SINUS LESION NEC | 2772 | EXCISION OF UVULA |
| 2263 | ETHMOIDECTOMY | 2773 | REPAIR OF UVULA |
| 2264 | SPHENOIDECTOMY | 2779 | OTHER UVULA OPERATIONS |
| 2271 | NASAL SINUS FISTULA CLOS | 2792 | MOUTH INCISION NOS |
| 2279 | NASAL SINUS REPAIR NEC | 2799 | ORAL CAVITY OPS NEC |
| 229 | OTHER NASAL SINUS OPS | 280 | PERITONSILLAR I & D |
| 242 | GINGIVOPLASTY | 284 | EXCISION OF TONSIL TAG |
| 251 | DESTRUCTION TONGUE LES | 285 | EXCISION LINGUAL TONSIL |
| 252 | PARTIAL GLOSSECTOMY | 2891 | INCIS TO REMOV TONSIL FB |
| 253 | COMPLETE GLOSSECTOMY | 2892 | EXCIS TONSIL/ADENOID LES |
| 254 | RADICAL GLOSSECTOMY | 2899 | TONSIL/ADENOID OPS NEC |
| 2559 | REPAIR OF TONGUE NEC | 290 | PHARYNGOTOMY |
| 2594 | OTHER GLOSSOTOMY | 292 | EXC BRANCHIAL CLEFT CYST |
| 2599 | TONGUE OPERATION NEC | 293 | <i>DESTRUCT PHARYNGEAL LES</i> |
| 2621 | SALIVARY CYST MARSUPIAL | 2931 | CRICOPHARYNGEAL MYOTOMY |
| 2629 | SALIV LESION EXCIS NEC | 2932 | PHARYNGEAL DIVERTICULEC |
| 2630 | SIALOADENECTOMY NOS | 2933 | PHARYNGECTOMY |
| 2631 | PARTIAL SIALOADENECTOMY | 2939 | EXCIS/DESTR LES PHAR NEC |
| 2632 | COMPLETE SIALOADENECTOMY | 294 | PLASTIC OP ON PHARYNX |
| 2641 | SUTURE OF SALIV GLND LAC | 2951 | SUTURE OF PHARYNGEAL LAC |
| 2642 | SALIVARY FISTULA CLOSURE | 2952 | CLOS BRANCH CLEFT FISTUL |
| 2649 | SALIVARY REPAIR NEC | 2953 | CLOS PHARYNX FISTULA NEC |
| 2699 | SALIVARY OPERATION NEC | 2954 | LYSIS PHARYNGEAL ADHES |
| 270 | DRAIN FACE & MOUTH FLOOR | 2959 | PHARYNGEAL REPAIR NEC |
| 271 | INCISION OF PALATE | 2992 | DIVIS GLOSSOPHARYNG NERV |
| 2731 | LOC EXC BONY PALATE LES | 2999 | PHARYNGEAL OPERATION NEC |

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ICD-9-CM Degenerative neurological disorder diagnosis codes¹:

| | | | |
|-------------|---------------------------------|-------------|---------------------------------|
| 2900 | SENILE DEMENTIA UNCOMP | 29411 | DEMENTIA W BEHAVIOR DIST |
| 29010 | PRESENILE DEMENTIA | 2948 | MENTAL DISOR NEC OTH DIS |
| 29011 | PRESENILE DELIRIUM | 2949 | MENTAL DISOR NOS OTH DIS |
| 29012 | PRESENILE DELUSION | 3100 | FRONTAL LOBE SYNDROME |
| 29013 | PRESENILE DEPRESSION | 3102 | POSTCONCUSSION SYNDROME |
| 29020 | SENILE DELUSION | <i>3108</i> | <i>NONPSYCHOT BRAIN SYN NEC</i> |
| 29021 | SENILE DEPRESSIVE | 31081 | PSEUDOBULBAR AFFECT |
| 2903 | SENILE DELIRIUM | 31089 | NONPSYCH MNTL DISORD NEC |
| 29040 | VASCULAR DEMENTIA,UNCOMP | 3109 | NONPSYCHOT BRAIN SYN NOS |
| 29041 | VASC DEMENTIA W DELIRIUM | 3310 | ALZHEIMER'S DISEASE |
| 29042 | VASC DEMENTIA W DELUSION | <i>3311</i> | <i>FRONTOTEMPORAL DEMENTIA</i> |
| 29043 | VASC DEMENTIA W DEPRESSN | 33111 | PICK'S DISEASE |
| 2908 | SENILE PSYCHOSIS NEC | 33119 | FRONTOTEMP DEMENTIA NEC |
| 2909 | SENILE PSYCHOT COND NOS | 3312 | SENILE DEGENERAT BRAIN |
| 2930 | DELIRIUM D/T OTHER COND | 3316 | CORTICOBASAL DEGENERATION |
| 2931 | SUBACUTE DELIRIUM | 33182 | DEMENTIA WITH LEWY BODIES |
| 2940 | AMNESTIC DISORD OTH DIS | 34882 | BRAIN DEATH |
| <i>2941</i> | <i>DEMENTIA IN OTH DISEASES</i> | 797 | SENILITY W/O PSYCHOSIS |
| 29410 | DEMENTIA W/O BEHAV DIST | | |

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