Supplementary Table 1

Codes used to define symptoms and complications

|  |  |  |  |
| --- | --- | --- | --- |
| **Symptom** | **Code type** | **Code** | **Description** |
| *Acute bronchitis* | | | |
|  | ICD-9 | 466.0 | BRONCHITIS, ACUTE |
|  | ICD-9 | 466.11 | BRONCHIOLITIS, ACUTE, D/T RSV |
|  | ICD-9 | 466.19 | BRONCHIO ACUTE D/T OTH INFCT ORGNSM |
|  | ICD-10 | J20.0 | ACUTE BRONCH D/T MYCOPLASMA PNEU |
|  | ICD-10 | J20.1 | ACUTE BRONCH D/T HEMOPHILUS FLU |
|  | ICD-10 | J20.2 | ACUTE BRONCH D/T STREPTOCOCCUS |
|  | ICD-10 | J20.3 | ACUTE BRONCH D/T COXSACKIEVIRUS |
|  | ICD-10 | J20.4 | ACUTE BRONCH D/T PARAINFLUENZA V |
|  | ICD-10 | J20.5 | ACUTE BRONCH D/T RESP SYNCY VIR |
|  | ICD-10 | J20.6 | ACUTE BRONCHITIS DUE TO RHINOVIRUS |
|  | ICD-10 | J20.7 | ACUTE BRONCHITIS DUE TO ECHOVIRUS |
|  | ICD-10 | J20.8 | ACUTE BRONCHITIS D/T OTH SPEC ORGAN |
|  | ICD-10 | J20.9 | ACUTE BRONCHITIS, UNSPECIFIED |
| *Acute cold* | | | |
|  | ICD-9 | 460 | NASOPHARYNGITIS, ACUTE |
|  | ICD-9 | 464.00 | LARYNGITIS, ACUTE, W/O OBST |
|  | ICD-9 | 464.01 | LARYNGITIS, ACUTE, W/OBSTRUCTION |
|  | ICD-9 | 464.10 | TRACHEITIS, ACUTE, W/O OBSTRUCTION |
|  | ICD-9 | 464.11 | TRACHEITIS, ACUTE W/OBSTRUCTION |
|  | ICD-9 | 464.20 | LARYNGOTRACHEITIS, ACUTE W/O OBST |
|  | ICD-9 | 464.21 | LARYNGOTRACHEITIS, ACUTE W/OBST |
|  | ICD-9 | 464.30 | EPIGLOTTITIS, ACUTE W/O OBST |
|  | ICD-9 | 464.31 | EPIGLOTTITIS, ACUTE W/OBSTRUCTION |
|  | ICD-9 | 464.4 | CROUP |
|  | ICD-9 | 464.50 | SUPRAGLOTTITIS NOS, W/O OBST |
|  | ICD-9 | 464.51 | SUPRAGLOTTITIS NOS, W/OBST |
|  | ICD-10 | J00 | ACUTE NASOPHARYNGITIS [COMMON COLD] |
|  | ICD-10 | J04.0 | ACUTE LARYNGITIS |
|  | ICD-10 | J04.10 | ACUTE TRACHEITIS W/O OBSTRUCTION |
|  | ICD-10 | J04.11 | ACUTE TRACHEITIS WITH OBSTRUCTION |
|  | ICD-10 | J04.2 | ACUTE LARYNGOTRACHEITIS |
|  | ICD-10 | J04.30 | SUPRAGLOTTITIS UNS W/O OBSTRUCTION |
|  | ICD-10 | J04.31 | SUPRAGLOTTITIS UNS W/OBSTRUCTION |
| *Acute Sinusitis* | | | |
|  | ICD-9 | 461.0 | SINUSITIS, ACUTE MAXILLARY |
|  | ICD-9 | 461.1 | SINUSITIS, ACUTE FRONTAL |
|  | ICD-9 | 461.2 | SINUSITIS, ACUTE ETHMOIDAL |
|  | ICD-9 | 461.3 | SINUSITIS, ACUTE SPHENOIDAL |
|  | ICD-9 | 461.8 | SINUSITIS, ACUTE NEC |
|  | ICD-9 | 461.9 | SINUSITIS, ACUTE NOS |
|  | ICD-10 | J01.00 | ACUTE MAX SINUSITIS, UNS |
|  | ICD-10 | J01.01 | ACUTE RECURRENT MAXILLARY SINUSITIS |
|  | ICD-10 | J01.10 | ACUTE FRONTAL SINUSITIS, UNS |
|  | ICD-10 | J01.11 | ACUTE RECURRENT FRONTAL SINUSITIS |
|  | ICD-10 | J01.20 | ACUTE ETHMOIDAL SINUSITIS, UNS |
|  | ICD-10 | J01.21 | ACUTE RECURRENT ETHMOIDAL SINUSITIS |
|  | ICD-10 | J01.30 | ACUTE SPHENOIDAL SINUSITIS, UNS |
|  | ICD-10 | J01.31 | ACUTE RECURRENT SPHENOIDAL SINUSITS |
|  | ICD-10 | J01.40 | ACUTE PANSINUSITIS, UNSPECIFIED |
|  | ICD-10 | J01.41 | ACUTE RECURRENT PANSINUSITIS |
|  | ICD-10 | J01.80 | OTHER ACUTE SINUSITIS |
|  | ICD-10 | J01.81 | OTHER ACUTE RECURRENT SINUSITIS |
|  | ICD-10 | J01.90 | ACUTE SINUSITIS, UNSPECIFIED |
|  | ICD-10 | J01.91 | ACUTE RECURR SINUSITIS, UNS |
| *Acute upper respiratory* | | | |
|  | ICD-9 | 518.81 | Failure, acute respiratory |
|  | ICD-9 | 465.0 | LARYNGOPHARYNGITIS, ACUTE |
|  | ICD-9 | 465.8 | INFCT UP RSPRT MLT SITES, ACUTE NEC |
|  | ICD-9 | 465.9 | INFCT UP RSPRT MLT SITES, ACUTE NOS |
|  | ICD-10 | J06.0 | ACUTE LARYNGOPHARYNGITIS |
|  | ICD-10 | J06.9 | ACUTE URI UNSPECIFIED |
| *Chronic bronchitis* | | | |
|  | ICD-9 | 490 | BRONCHITIS NOS |
|  | ICD-9 | 491.0 | BRONCHITIS, SIMPLE CHRONIC |
|  | ICD-9 | 491.1 | BRONCHITIS, MUCOPURULENT CHRONIC |
|  | ICD-9 | 491.20 | BRONCHITIS, OBSTR CHRN W/O EXACRB |
|  | ICD-9 | 491.21 | BRONCHITIS, OBSTR CHRN W/EXACRB |
|  | ICD-9 | 491.22 | BRONCH, OBSTR CHRN W/ACUTE BRONCH |
|  | ICD-9 | 491.8 | BRONCHITIS, CHRONIC NEC |
|  | ICD-9 | 491.9 | BRONCHITIS, CHRONIC NOS |
|  | ICD-10 | J42 | UNSPECIFIED CHRONIC BRONCHITIS |
|  | ICD-10 | J44.0 | CHRON OBSTR PULM DZ W/ACUT LWR RESP |
|  | ICD-10 | J44.1 | CHRON OBSTR PULM DZ W/EXACERBATION UNS |
|  | ICD-10 | J44.9 | CHRO OBSTRUC PULM DZ UNS |
| *Chronic sinusitis* | | | |
|  | ICD-9 | 473.0 | SINUSITIS, CHRONIC MAXILLARY |
|  | ICD-9 | 473.1 | SINUSITIS, CHRONIC FRONTAL |
|  | ICD-9 | 473.2 | SINUSITIS, CHRONIC ETHMOIDAL |
|  | ICD-9 | 473.3 | SINUSITIS, CHRONIC SPHENOIDAL |
|  | ICD-9 | 473.8 | SINUSITIS, CHRONIC NEC |
|  | ICD-9 | 473.9 | SINUSITIS, CHRONIC NOS |
|  | ICD-10 | J32.0 | CHRONIC MAXILLARY SINUSITIS |
|  | ICD-10 | J32.1 | CHRONIC FRONTAL SINUSITIS |
|  | ICD-10 | J32.2 | CHRONIC ETHMOIDAL SINUSITIS |
|  | ICD-10 | J32.3 | CHRONIC SPHENOIDAL SINUSITIS |
|  | ICD-10 | J32.4 | CHRONIC PANSINUSITIS |
|  | ICD-10 | J32.8 | OTHER CHRONIC SINUSITIS |
|  | ICD-10 | J32.9 | CHRONIC SINUSITIS, UNSPECIFIED |
| *Contracture* | | | |
|  | ICD-9 | 718.47 | CONTRACTURE, JOINT, ANKLE/FOOT |
|  | ICD-10 | M24.571 | CONTRACTURE, RIGHT ANKLE |
|  | ICD-10 | M24.572 | CONTRACTURE, LEFT ANKLE |
|  | ICD-10 | M24.573 | CONTRACTURE, UNSPECIFIED ANKLE |
|  | ICD-10 | M24.574 | CONTRACTURE, RIGHT FOOT |
|  | ICD-10 | M24.575 | CONTRACTURE, LEFT FOOT |
|  | ICD-10 | M24.576 | CONTRACTURE, UNSPECIFIED FOOT |
|  | ICD-9 | 718.42 | CONTRACTURE, JOINT, UPPER ARM |
|  | ICD-10 | M24.521 | CONTRACTURE, RIGHT ELBOW |
|  | ICD-10 | M24.522 | CONTRACTURE, LEFT ELBOW |
|  | ICD-10 | M24.529 | CONTRACTURE, UNSPECIFIED ELBOW |
|  | ICD-9 | 718.45 | CONTRACTURE, JOINT, PELVIS/THIGH |
|  | ICD-10 | M24.551 | CONTRACTURE, RIGHT HIP |
|  | ICD-10 | M24.552 | CONTRACTURE, LEFT HIP |
|  | ICD-10 | M24.559 | CONTRACTURE, UNSPECIFIED HIP |
|  | ICD-9 | 718.46 | CONTRACTURE, JOINT, LOWER LEG |
|  | ICD-10 | M24.561 | CONTRACTURE, RIGHT KNEE |
|  | ICD-10 | M24.562 | CONTRACTURE, LEFT KNEE |
|  | ICD-10 | M24.569 | CONTRACTURE, UNSPECIFIED KNEE |
|  | ICD-9 | 718.41 | CONTRACTURE, JOINT, SHOULDER |
|  | ICD-10 | M24.511 | CONTRACTURE, RIGHT SHOULDER |
|  | ICD-10 | M24.512 | CONTRACTURE, LEFT SHOULDER |
|  | ICD-10 | M24.519 | CONTRACTURE, UNSPECIFIED SHOULDER |
| *Cough* | | | |
|  | ICD-9 | 786.2 | SYMPTOM, COUGH |
|  | ICD-10 | R05 | COUGH |
| *Dislocation/subluxation* | | | |
|  | ICD-9 | 835.00 | DISLOCATION HIP NOS, CLOSED |
|  | ICD-9 | 835.01 | DSLOC, POSTERIOR HIP, CLOSED |
|  | ICD-9 | 835.02 | DSLOC, OBTURATOR HIP, CLOSED |
|  | ICD-9 | 835.03 | DSLOC, ANTERIOR HIP NEC, CLOSED |
|  | ICD-9 | 835.10 | DISLOCATION HIP NOS, OPEN |
|  | ICD-9 | 835.11 | DSLOC, POSTERIOR HIP, OPEN |
|  | ICD-9 | 835.12 | DSLOC, OBTURATOR HIP, OPEN |
|  | ICD-9 | 835.13 | DSLOC, ANTERIOR HIP NEC, OPEN |
|  | ICD-10 | S73.001A | UNSPEC SUBLUXATION RT HIP, IE |
|  | ICD-10 | S73.001D | UNSPEC SUBLUXATION RT HIP, SE |
|  | ICD-10 | S73.001S | UNSPEC SUBLUXATION RT HIP, SQ |
|  | ICD-10 | S73.002A | UNSPEC SUBLUXATION LT HIP, IE |
|  | ICD-10 | S73.002D | UNSPEC SUBLUXATION LEFT HIP, SE |
|  | ICD-10 | S73.002S | UNSPEC SUBLUXATION LEFT HIP, SQ |
|  | ICD-10 | S73.003A | UNSP SUBLUXATION UNSP HIP, IE |
|  | ICD-10 | S73.003D | UNSP SUBLUXATION UNSP HIP, SE |
|  | ICD-10 | S73.003S | UNSP SUBLUXATION UNSP HIP, SQ |
|  | ICD-10 | S73.004A | UNSPEC DISLOCAT RT HIP, IE |
|  | ICD-10 | S73.004D | UNSPEC DISLOCATION RT HIP, SE |
|  | ICD-10 | S73.004S | UNSPEC DISLOCATION RT HIP, SQ |
|  | ICD-10 | S73.005A | UNSP DISLOCATION OF LEFT HIP, IE |
|  | ICD-10 | S73.005D | UNSP DISLOCATION OF LEFT HIP, SE |
|  | ICD-10 | S73.005S | UNSP DISLOCATION OF LT HIP, SQ |
|  | ICD-10 | S73.006A | UNSP DISLOCATION UNSP HIP, IE |
|  | ICD-10 | S73.006D | UNSP DISLOCATION UNSP HIP, SE |
|  | ICD-10 | S73.006S | UNSP DISLOCATION UNSP HIP, SQ |
|  | ICD-10 | S73.011A | POSTERIOR SUBLUXATION RT HIP, IE |
|  | ICD-10 | S73.011D | POSTERIOR SUBLUXATION RT HIP, SE |
|  | ICD-10 | S73.011S | POSTER SUBLUXATION RT HIP, SQ |
|  | ICD-10 | S73.012A | POSTERIOR SUBLUXATION LT HIP, IE |
|  | ICD-10 | S73.012D | POSTERIOR SUBLUXATION LT HIP, SE |
|  | ICD-10 | S73.013A | POSTERIOR SUBLUXATION UNSP HIP, IE |
|  | ICD-10 | S73.014A | POSTERIOR DISLOCATION RT HIP, IE |
|  | ICD-10 | S73.014D | POSTERIOR DISLOCATION RT HIP, SE |
|  | ICD-10 | S73.014S | POSTER DISLOCATION RT HIP, SQ |
|  | ICD-10 | S73.015A | POSTERIOR DISLOCATION LT HIP, IE |
|  | ICD-10 | S73.015D | POSTERIOR DISLOCATION LT HIP, SE |
|  | ICD-10 | S73.015S | POSTER DISLOCATION LT HIP, SQ |
|  | ICD-10 | S73.016A | POSTERIOR DISLOCATION UNSP HIP, IE |
|  | ICD-10 | S73.016D | POSTERIOR DISLOCATION UNSP HIP, SE |
|  | ICD-10 | S73.021A | OBTURATOR SUBLUXATION RT HIP, IE |
|  | ICD-10 | S73.021D | OBTURATOR SUBLUXATION RT HIP, SE |
|  | ICD-10 | S73.022A | OBTURATOR SUBLUXATION LEFT HIP, IE |
|  | ICD-10 | S73.023S | OBTURAT SUBLUXAT UNSP HIP, SQ |
|  | ICD-10 | S73.024A | OBTURATOR DISLOCATION RIGHT HIP, IE |
|  | ICD-10 | S73.024D | OBTURATOR DISLOCATION RIGHT HIP, SE |
|  | ICD-10 | S73.025A | OBTURATOR DISLOCATION LEFT HIP, IE |
|  | ICD-10 | S73.031A | OTH ANTERIOR SUBLUXATION RT HIP, IE |
|  | ICD-10 | S73.031D | OTH ANTERIOR SUBLUXATION RT HIP, SE |
|  | ICD-10 | S73.032A | OTH ANTERIOR SUBLUXATION LT HIP, IE |
|  | ICD-10 | S73.032D | OTH ANTERIOR SUBLUXATION LT HIP, SE |
|  | ICD-10 | S73.033A | OTH ANTER SUBLUXATION UNSP HIP, IE |
|  | ICD-10 | S73.034A | OTH ANTERIOR DISLOCATION RT HIP, IE |
|  | ICD-10 | S73.034D | OTH ANTERIOR DISLOCATION RT HIP, SE |
|  | ICD-10 | S73.034S | OTH ANTER DISLOCATION RT HIP, SQ |
|  | ICD-10 | S73.035A | OTH ANTERIOR DISLOCATION LT HIP, IE |
|  | ICD-10 | S73.035D | OTH ANTERIOR DISLOCATION LT HIP, SE |
|  | ICD-10 | S73.035S | OTH ANTER DISLOCATION LT HIP, SQ |
|  | ICD-10 | S73.036A | OTH ANTERIOR DISLOCAT UNSP HIP, IE |
|  | ICD-10 | S73.036D | OTH ANTERIOR DISLOCAT UNSP HIP, SE |
|  | ICD-10 | S73.041A | CENTRAL SUBLUXATION OF RIGHT HIP, IE |
|  | ICD-10 | S73.041S | CENTRAL SUBLUXATION RT HIP, SQ |
|  | ICD-10 | S73.042A | CENTRAL SUBLUXATION OF LEFT HIP, IE |
|  | ICD-10 | S73.042D | CENTRAL SUBLUXATION LEFT HIP, SE |
|  | ICD-10 | S73.044A | CENTRAL DISLOCATION OF RIGHT HIP, IE |
|  | ICD-10 | S73.044D | CENTRAL DISLOCATION OF RIGHT HIP, SE |
|  | ICD-10 | S73.044S | CENTRAL DISLOCATION RT HIP, SQ |
|  | ICD-10 | S73.045A | CENTRAL DISLOCATION LEFT HIP, IE |
|  | ICD-10 | S73.046A | CENTRAL DISLOCATION UNSP HIP, IE |
|  | ICD-10 | S73.046S | CENTRAL DISLOCATION UNSP HIP, SQ |
|  | ICD-10 | S73.101A | UNSP SPRAIN OF RIGHT HIP, IE |
|  | ICD-10 | S73.101D | UNSP SPRAIN OF RIGHT HIP, SE |
|  | ICD-10 | S73.101S | UNSP SPRAIN OF RIGHT HIP, SQ |
|  | ICD-10 | S73.102A | UNSP SPRAIN OF LEFT HIP, IE |
|  | ICD-10 | S73.102D | UNSP SPRAIN OF LEFT HIP, SE |
|  | ICD-10 | S73.102S | UNSP SPRAIN OF LEFT HIP, SQ |
|  | ICD-10 | S73.109A | UNSP SPRAIN UNSP HIP, IE |
|  | ICD-10 | S73.109D | UNSP SPRAIN OF UNSP HIP, SE |
|  | ICD-10 | S73.109S | UNSP SPRAIN OF UNSP HIP, SQ |
|  | ICD-10 | S73.111A | ILIOFEMORAL LIGAM SPRAIN RT HIP, IE |
|  | ICD-10 | S73.111D | ILIOFEMORAL LIGAM SPRAIN RT HIP, SE |
|  | ICD-10 | S73.111S | ILIOFEMORAL LIGAM SPRAIN RT HIP, SQ |
|  | ICD-10 | S73.112A | ILIOFEMORAL LIGAM SPRAIN LT HIP, IE |
|  | ICD-10 | S73.112D | ILIOFEMORAL LIGAM SPRAIN LT HIP, SE |
|  | ICD-10 | S73.112S | ILIOFEMORAL LIGAM SPRAIN LT HIP, SQ |
|  | ICD-10 | S73.119A | ILIOFEMORAL LIGAM SPRAIN UNS HIP, IE |
|  | ICD-10 | S73.119D | ILIOFEMORAL LIGAM SPRAIN UNS HIP, SE |
|  | ICD-10 | S73.119S | ILIOFEMORAL LIGAM SPRAIN UNS HIP, SQ |
|  | ICD-10 | S73.121A | ISCHIOCAPSULAR LIG SPRAIN RT HIP, IE |
|  | ICD-10 | S73.121D | ISCHIOCAPSULAR LIG SPRAIN RT HIP, SE |
|  | ICD-10 | S73.122A | ISCHIOCAPSULAR LIG SPRAIN LT HIP, IE |
|  | ICD-10 | S73.122D | ISCHIOCAPSULAR LIG SPRAIN LT HIP, SE |
|  | ICD-10 | S73.129A | ISCHIOCAPSUL LIG SPRAIN UNSP HIP, IE |
|  | ICD-10 | S73.129D | ISCHIOCAPSUL LIG SPRAIN UNSP HIP, SE |
|  | ICD-10 | S73.191A | OTHER SPRAIN RT HIP, IE |
|  | ICD-10 | S73.191D | OTHER SPRAIN RT HIP, SE |
|  | ICD-10 | S73.191S | OTHER SPRAIN OF RIGHT HIP, SQ |
|  | ICD-10 | S73.192A | OTHER SPRAIN LEFT HIP, IE |
|  | ICD-10 | S73.192D | OTHER SPRAIN LEFT HIP, SE |
|  | ICD-10 | S73.192S | OTHER SPRAIN OF LEFT HIP, SQ |
|  | ICD-10 | S73.199A | OTHER SPRAIN OF UNSPECIFIED HIP, IE |
|  | ICD-10 | S73.199D | OTHER SPRAIN OF UNSPECIFIED HIP, SE |
|  | ICD-10 | S73.199S | OTHER SPRAIN OF UNSP HIP, SQ |
| *Dysphagia* | | | |
|  | ICD-9 | 787.2 | DYSPHAGIA |
|  | ICD-9 | 787.20 | DYSPHAGIA, UNSPECIFIED |
|  | ICD-9 | 787.21 | DYSPHAGIA, ORAL PHASE |
|  | ICD-9 | 787.22 | DYSPHAGIA, OROPHARYNGEAL PHASE |
|  | ICD-9 | 787.23 | DYSPHAGIA, PHARYNGEAL PHASE |
|  | ICD-9 | 787.24 | DYSPHAGIA, PHARYNGOESOPHAGEAL PHASE |
|  | ICD-9 | 787.29 | OTHER DYSPHAGIA |
|  | ICD-10 | R13.10 | DYSPHAGIA, UNSPECIFIED |
|  | ICD-10 | R13.11 | DYSPHAGIA, ORAL PHASE |
|  | ICD-10 | R13.12 | DYSPHAGIA, OROPHARYNGEAL PHASE |
|  | ICD-10 | R13.13 | DYSPHAGIA, PHARYNGEAL PHASE |
|  | ICD-10 | R13.14 | DYSPHAGIA, PHARYNGOESOPHAGEAL PHASE |
|  | ICD-10 | R13.19 | OTHER DYSPHAGIA |
| *Feeding problems* | | | |
|  | ICD-9 | 783.3 | SYMPTOM, FEEDING PROBLEM |
|  | ICD-10 | R63.3 | FEEDING DIFFICULTIES |
| *Fever* | | | |
|  | ICD-9 | 780.6 | FEVER |
|  | ICD-9 | 780.60 | SYMPTOM, FEVER, UNSPECIFIED |
|  | ICD-10 | R50.9 | FEVER, UNSPECIFIED |
| *Gastronomy tube feeding* | | | |
|  | ICD-9 | 43.1\* | Gastrostomy |
|  | ICD-9 | V55.1 | Attention to gastrostomy |
|  | ICD-9 | 97.51 | Removal of gastrostomy tube |
|  | ICD-9 | 97.02 | Replacement of gastrostomy tube |
|  | HCPCS | K0147 | Gastronomy tube silicone ring |
|  | CPT | 49440 | place gastrostomy tube perc |
|  | CPT | 49441 | place duod/jej tube perc |
|  | CPT | 49446 | change g-tube to g-j perc |
|  | CPT | 49450 | replace g/c tube perc |
|  | CPT | 49451 | replace duod/jej tube perc |
|  | CPT | 43246 | place gastrostomy tube |
|  | CPT | 44372 | small bowel endoscopy |
|  | CPT | 44373 | small bowel endoscopy |
|  | CPT | 43653 | laparoscopy gastrostomy |
|  | CPT | 43760 | change gastrostomy tube |
| *Gastro/reflux* | | | |
|  | ICD-9 | 530.10 | ESOPHAGITIS NOS |
|  | ICD-9 | 530.11 | ESOPHAGITIS, REFLUX |
|  | ICD-9 | 530.12 | ESOPHAGITIS, ACUTE |
|  | ICD-9 | 530.13 | EOSINOPHILIC ESOPHAGITIS |
|  | ICD-9 | 530.19 | ESOPHAGITIS, OTHER |
|  | ICD-9 | 530.81 | REFLUX, ESOPHAGEAL |
|  | ICD-9 | 787.1 | SYMPTOM, HEARTBURN |
|  | ICD-10 | K21.0 | GASTRO-ESOPHAGEAL REFLUX DZ W/ESOPH |
|  | ICD-10 | K21.9 | GASTRO-ESOPHAGEAL REFLUX DZ W/O ESO |
| *Influenza* | | | |
|  | ICD-9 | 487.0 | INFLUENZA W/PNEUMONIA |
|  | ICD-9 | 487.1 | INFLUENZA W/RSPRT MNFST NEC |
|  | ICD-9 | 487.8 | INFLUENZA W/MANIFESTATION NEC |
|  | ICD-10 | J11.00 | INFLU D/T UNIDNT FLU VRS W/UNSP PNM |
|  | ICD-10 | J11.08 | INFLU D/T UNIDNT FLU VRS W/SPEC PNM |
|  | ICD-10 | J11.1 | INFLU D/T UNIDNT FLU VRS W/OTH RESP |
|  | ICD-10 | J11.2 | INFLU D/T UNIDNT FLU VRS W/OTH GAST |
|  | ICD-10 | J11.81 | INFLU D/T UNIDENT FLU W/ENCEPHALOP |
|  | ICD-10 | J11.82 | INFLU D/T UNIDENT FLU W/MYOCARDITIS |
|  | ICD-10 | J11.83 | INFLU D/T UNIDENT FLU W/OTITIS MEDI |
|  | ICD-10 | J11.89 | INFL D/T UNIDENT FLU W/OTH MANIFEST |
| *Lack of coordination* | | | |
|  | ICD-9 | 781.3 | SYMPTOM, LACK OF COORDINATION |
|  | ICD-10 | R27.9 | UNSPECIFIED LACK OF COORDINATION |
| *Muscle weakness* | | | |
|  | ICD-9 | 728.87 | WEAKNESS, MUSCLE |
|  | ICD-10 | M62.81 | MUSCLE WEAKNESS (GENERALIZED) |
| *Occupational therapy* | | | |
|  | ICD-9 | 93.83 | Occupational therapy |
|  | CPT | 97003 | ot evaluation |
|  | CPT | 97004 | ot re-evaluation |
|  | CPT | 97140 | manual therapy 1/> regions |
|  | CPT | 97535 | self care mngment training |
|  | CPT | 97110 | therapeutic exercises |
|  | CPT | 97112 | neuromuscular reeducation |
|  | CPT | 97116 | gait training therapy |
|  | CPT | 97530 | therapeutic activities |
|  | CPT | 97532 | cognitive skills development |
|  | CPT | 97537 | community/work reintegration |
|  | CPT | 97542 | wheelchair mngment training |
|  | HCPCS | G0129 | Occupational therapy services requiring the skills of a qualified occupational therapist, furnished as a component of a partial hospitalization treatment program, per session (45 minutes or more) |
|  | HCPCS | G0152 | HHCP-serv of ot, ea 15 min |
|  | HCPCS | G0160 | HHC Occup Therapy ea 15 |
|  | HCPCS | S9129 | Occupational therapy, in the home |
|  | HCPCS | G0158 | HHC OT assistant ea 15 |
| *Orthopedic procedures* | | | |
| Orthopedic surgery (hips) | ICD-9 | 00.85 | Resurfacing hip, total, acetabulum and femoral head |
|  | ICD-9 | 00.86 | Resurfacing hip, partial, femoral head |
|  | ICD-9 | 00.87 | Resurfacing hip, partial, acetabulum |
|  | ICD-9 | 81.51 | Total hip replacement |
|  | ICD-9 | 81.52 | Partial hip replacement |
|  | ICD-9 | 00.70 | Revision of hip replacement, both acetabular and femoral components |
|  | ICD-9 | 00.71 | Revision of hip replacement, acetabular component |
|  | ICD-9 | 00.72 | Revision of hip replacement, femoral component |
|  | ICD-9 | 00.73 | Revision of hip replacement, acetabular liner and/or femoral head only |
|  | ICD-9 | 81.53 | Revision of hip replacement, not otherwise specified |
|  | CPT | 27125 | partial hip replacement |
|  | CPT | 27130 | total hip arthroplasty |
|  | CPT | 27236 | treat thigh fracture |
|  | CPT | 27299 | pelvis/hip joint surgery |
|  | CPT | S2118 | Total hip resurfacing |
|  | CPT | 27120 | reconstruction of hip socket |
|  | CPT | 27122 | reconstruction of hip socket |
|  | CPT | 27132 | total hip arthroplasty |
|  | CPT | 27134 | revise hip joint replacement |
|  | CPT | 27137 | revise hip joint replacement |
|  | CPT | 27138 | revise hip joint replacement |
|  | CPT | 27146 | incision of hip bone |
| Orthopedic surgery (scoliosis) |  |  |  |
| Laminectomy | ICD-9 | 03.0 | Exploration and decompression of spinal canal structures |
|  | ICD-9 | 03.09 | Other exploration and decompression of spinal canal |
| Discectomy | ICD-9 | 80.5 | Excision or destruction of intervertebral disc |
|  | ICD-9 | 80.50 | Excision or destruction of intervertebral disc unspecified |
|  | ICD-9 | 80.51 | Excision of intervertebral disc |
|  | ICD-9 | 80.52 | Intervertebral chemonucleolysis |
|  | ICD-9 | 80.59 | Other destruction of intervertebral disc |
| Fusion | ICD-9 | 81.00, 81.0 | Spinal fusion, not otherwise specified |
|  | ICD-9 | 81.04 | Dorsal/dorsolumbar fusion, anterior technique |
|  | ICD-9 | 81.05 | Dorsal/dorsolumbar fusion, posterior technique |
|  | ICD-9 | 81.06 | Lumbar and lumbosacral spinal fusion, anterior technique |
|  | ICD-9 | 81.07 | Lumbar and lumbosacral fusion of the posterior column, posterior technique |
|  | ICD-9 | 81.08 | Lumbar and lumbosacral fusion of the anterior column, posterior technique |
|  | ICD-9 | 81.09 | Refusion of spine, any level, any technique |
| Spinal arthrodesis | ICD-9 | 03.59 | Other repair and plastic operations on spinal cord structures |
|  | CPT | 22800 – 22812 | Arthrodesis, for spinal  deformity |
|  | CPT | 22800 | post fusion </6 vert seg |
|  | CPT | 22802 | post fusion 7-12 vert seg |
|  | CPT | 22804 | post fusion 13/> vert seg |
|  | CPT | 22808 | ant fusion 2-3 vert seg |
|  | CPT | 22810 | ant fusion 4-7 vert seg |
|  | CPT | 22812 | ant fusion 8/> vert seg |
| Other | ICD-9 | 84.59 | Insertion of other spinal devices |
|  | ICD-9 | 84.8x | Insertion, Replacement And Revision Of Posterior Spinal Motion Preservation Device(s) |
|  | CPT | 22818 | kyphectomy 1-2 segments |
|  | CPT | 22819 | kyphectomy 3 or more |
|  | CPT | 22840 | insert spine fixation device |
|  | CPT | 22841 | insert spine fixation device |
|  | CPT | 22842 | insert spine fixation device |
|  | CPT | 22843 | insert spine fixation device |
|  | CPT | 22844 | insert spine fixation device |
|  | CPT | 22845 | insert spine fixation device |
|  | CPT | 22846 | insert spine fixation device |
|  | CPT | 22847 | insert spine fixation device |
| *Osteoporosis* | | | |
|  | ICD-9 | 733.00 | OSTEOPOROSIS NOS |
|  | ICD-9 | 733.01 | OSTEOPOROSIS, SENILE |
|  | ICD-9 | 733.02 | OSTEOPOROSIS, IDIOPATHIC |
|  | ICD-9 | 733.03 | OSTEOPOROSIS, DISUSE |
|  | ICD-9 | 733.09 | OSTEOPOROSIS NEC |
|  | ICD-9 | 733.10 | FX, PATHOLOGIC, UNSPECIFIED SITE |
|  | ICD-9 | 733.11 | FX, PATHOLOGIC, HUMERUS |
|  | ICD-9 | 733.12 | FX, PATHOLOGIC, DISTAL RADIUS/ULNA |
|  | ICD-9 | 733.13 | FX, PATHOLOGIC, VERTEBRAE |
|  | ICD-9 | 733.14 | FX, PATHOLOGIC, FEMUR NECK |
|  | ICD-9 | 733.15 | FX, PATHOLOGIC, FEMUR NOS |
|  | ICD-9 | 733.16 | FX. PATHOLOGIC, TIBIA/FIBULA |
|  | ICD-9 | 733.19 | FX, PATHOLOGIC, OTHER SPEC SITE |
|  | ICD-9 | 733.20 | CYST, BONE NOS |
|  | ICD-9 | 733.21 | CYST, SOLITARY BONE |
|  | ICD-9 | 733.22 | CYST, ANEURYSMAL BONE |
|  | ICD-9 | 733.29 | CYST, BONE NEC |
|  | ICD-9 | 733.3 | HYPEROSTOSIS, SKULL |
|  | ICD-9 | 733.40 | NECROSIS, ASEPTIC, BONE, UNSPC SITE |
|  | ICD-9 | 733.41 | NECROSIS, ASEPTIC, HEAD OF HUMERUS |
|  | ICD-9 | 733.42 | NECROSIS, ASEPTIC, FEMUR HEAD/NECK |
|  | ICD-9 | 733.43 | NECROSIS, ASEPTIC, FEMORAL CONDYLE |
|  | ICD-9 | 733.44 | NECROSIS, ASEPTIC, TALUS |
|  | ICD-9 | 733.45 | NECROSIS, ASEPTIC, JAW BONE |
|  | ICD-9 | 733.49 | NECROSIS, ASEPTIC, BONE NEC |
|  | ICD-9 | 733.5 | OSTEITIS CONDENSANS |
|  | ICD-9 | 733.6 | TIETZE'S DISEASE |
|  | ICD-9 | 733.7 | ALGONEURODYSTROPHY |
|  | ICD-9 | 733.81 | MALUNION, FRACTURE |
|  | ICD-9 | 733.82 | NONUNION, FRACTURE |
|  | ICD-9 | 733.90 | DISORDER, BONE/CARTILAGE NOS |
|  | ICD-9 | 733.91 | ARREST, BONE GROWTH |
|  | ICD-9 | 733.92 | CHONDROMALACIA |
|  | ICD-9 | 733.93 | FX, STRESS, TIBIA OR FIBULA |
|  | ICD-9 | 733.94 | FX, STRESS, METATARSALS |
|  | ICD-9 | 733.95 | FX, STRESS, OTHER BONE |
|  | ICD-9 | 733.96 | STRESS FRACTURE, FEMORAL NECK |
|  | ICD-9 | 733.97 | STRESS FRACTURE, SHAFT OF FEMUR |
|  | ICD-9 | 733.98 | STRESS FRACTURE OF PELVIS |
|  | ICD-10 | M81.0 | AR OSTEO W/O CURRENT PATHOLOGIC FX |
|  | ICD-10 | M81.6 | LOCALIZED OSTEOPOROSIS [LEQUESNE] |
|  | ICD-10 | M81.8 | OTH OSTEO W/O CURRENT PATHOLOGIC FX |
| *Pneumonia* | | | |
|  | ICD-9 | 480.0 | PNEUMONIA, ADENOVIRUS |
|  | ICD-9 | 480.1 | PNEUMONIA D/T RSPRT SYNCYTIAL VIRUS |
|  | ICD-9 | 480.2 | PNEUMONIA D/T PARAINFLUENZA VIRUS |
|  | ICD-9 | 480.3 | PNEUM D/T SARS-ASSOC CORONAVIRUS |
|  | ICD-9 | 480.8 | PNEUMONIA D/T VIRUS NEC |
|  | ICD-9 | 480.9 | PNEUMONIA D/T VIRUS NOS |
|  | ICD-9 | 481 | PNEUMONIA D/T PNEUMOCOCCAL |
|  | ICD-9 | 482.0 | PNEUMONIA D/T KLEBSIELLA PNEUMONIAE |
|  | ICD-9 | 482.1 | PNEUMONIA D/T PSEUDOMONAS |
|  | ICD-9 | 482.2 | PNEUMONIA D/T HEMOPHILUS INFLUENZAE |
|  | ICD-9 | 482.30 | PNEUMONIA D/T STREPTOCOCCUS NOS |
|  | ICD-9 | 482.31 | PNEUMONIA D/T STREPTOCOCCUS GROUP A |
|  | ICD-9 | 482.32 | PNEUMONIA D/T STREPTOCOCCUS GROUP B |
|  | ICD-9 | 482.39 | PNEUMONIA D/T STREPTOCOCCUS NEC |
|  | ICD-9 | 482.40 | PNEUNONIA D/T STAPHYLOCOCCUS NOS |
|  | ICD-9 | 482.41 | METHCLLN SUSP PNEU D/T STAPH AUREUS |
|  | ICD-9 | 482.42 | METHCLLN REST PNEU D/T STAPH AUREUS |
|  | ICD-9 | 482.49 | PNEUMONIA D/T STAPHYLOCOCCUS NEC |
|  | ICD-9 | 482.81 | PNEUMONIA D/T ANAEROBES |
|  | ICD-9 | 482.82 | PNEUMONIA D/T ESCHERICHIA COLI |
|  | ICD-9 | 482.83 | PNEUMONIA D/T GRAM-NEGATIVE NEC |
|  | ICD-9 | 482.84 | PNEUMONIA D/T LEGIONNAIRES' DISEASE |
|  | ICD-9 | 482.89 | PNEUMONIA, BACTERIAL NEC |
|  | ICD-9 | 482.9 | PNEUMONIA, BACTERIAL NOS |
|  | ICD-9 | 483.0 | PNEUMONIA D/T MYCOPLASMA PNEUMONIAE |
|  | ICD-9 | 483.1 | PNEUMONIA D/T CHLAMYDIA |
|  | ICD-9 | 483.8 | PNEUMONIA D/T ORGANISM NEC |
|  | ICD-9 | 484.1 | PNEUMONIA IN CYTOMEGALIC INCLS DIS |
|  | ICD-9 | 484.3 | PNEUMONIA IN WHOOPING COUGH |
|  | ICD-9 | 484.5 | PNEUMONIA IN ANTHRAX |
|  | ICD-9 | 484.6 | PNEUMONIA IN ASPERGILLOSIS |
|  | ICD-9 | 484.7 | PNEUMONIA IN SYSTEMIC MYCOSES |
|  | ICD-9 | 484.8 | PNEUMONIA IN OTH INFCT DISEASE CE |
|  | ICD-9 | 485 | BRONCHOPNEUMONIA, ORGANISM NOS |
|  | ICD-9 | 486 | PNEUMONIA, ORGANISM NOS |
|  | ICD-10 | J18.0 | BRONCHOPNEUMONIA UNS ORGANISM |
|  | ICD-10 | J18.1 | LOBAR PNEUMONIA, UNS ORGANISM |
|  | ICD-10 | J18.2 | HYPOSTATIC PNEU, UNS ORGANISM |
|  | ICD-10 | J18.8 | OTHER PNEU, UNS ORGANISM |
|  | ICD-10 | J18.9 | PNEUMONIA, UNSPECIFIED ORGANISM |
| *Respiratory abnormalities* | | | |
|  | ICD-9 | 786.00 | SYMP ABNORMALITY, RESPIRATORY NOS |
|  | ICD-9 | 786.01 | SYMPTOM, HYPERVENTILATION |
|  | ICD-9 | 786.02 | SYMPTOM, ORTHOPNEA |
|  | ICD-9 | 786.03 | SYMPTOM, APNEA |
|  | ICD-9 | 786.04 | SYMPTOM, CHEYNE-STOKES RESPIRATION |
|  | ICD-9 | 786.05 | SYMPTOM, SHORTNESS OF BREATH |
|  | ICD-9 | 786.06 | SYMPTOM, TACHYPNEA |
|  | ICD-9 | 786.07 | SYMPTOM, WHEEZING |
|  | ICD-9 | 786.09 | SYMP ABNORMALITY, RESPIRATORY NEC |
|  | ICD-9 | 786.1 | SYMPTOM, STRIDOR |
|  | ICD-9 | 786.3 | SYMPTOM, HEMOPTYSIS |
|  | ICD-9 | 786.30 | SYMPTOM, HEMOPTYSIS, UNSP |
|  | ICD-9 | 786.31 | SYMPTOM, ACUTE IDIOPATH PULM HEMOR |
|  | ICD-9 | 786.39 | SYMPTOM, OTHER HEMOPTYSIS |
|  | ICD-9 | 786.4 | SYMPTOM, ABNORMAL SPUTUM |
|  | ICD-9 | 786.50 | SYMPTOM, PAIN, CHEST NOS |
|  | ICD-9 | 786.51 | SYMPTOM, PAIN, PRECORDIAL |
|  | ICD-9 | 786.52 | SYMPTOM, PAINFUL RESPIRATION |
|  | ICD-9 | 786.59 | SYMPTOM, PAIN, CHEST NEC |
|  | ICD-9 | 786.6 | SYMP SWELLING/MASS/LUMP IN CHEST |
|  | ICD-9 | 786.7 | SYMPTOM, ABNORMAL CHEST SOUNDS |
|  | ICD-9 | 786.8 | SYMPTOM, HICCOUGH |
|  | ICD-9 | 786.9 | SYMP INV RESPIRATORY SYST/CHEST NEC |
|  | ICD-10 | R06.00 | DYSPNEA, UNSPECIFIED |
|  | ICD-10 | R06.01 | ORTHOPNEA |
|  | ICD-10 | R06.02 | SHORTNESS OF BREATH |
|  | ICD-10 | R06.09 | OTHER FORMS OF DYSPNEA |
|  | ICD-10 | R06.1 | STRIDOR |
|  | ICD-10 | R06.2 | WHEEZING |
|  | ICD-10 | R06.3 | PERIODIC BREATHING |
|  | ICD-10 | R06.4 | HYPERVENTILATION |
|  | ICD-10 | R06.5 | MOUTH BREATHING |
|  | ICD-10 | R06.6 | HICCOUGH |
|  | ICD-10 | R06.7 | SNEEZING |
|  | ICD-10 | R06.81 | APNEA, NOT ELSEWHERE CLASSIFIED |
|  | ICD-10 | R06.82 | TACHYPNEA, NOT ELSEWHERE CLASSIFIED |
|  | ICD-10 | R06.83 | SNORING |
|  | ICD-10 | R06.89 | OTHER ABNORMALITIES OF BREATHING |
|  | ICD-10 | R06.9 | UNS ABNORMALITIES OF BREATHING |
| *Respiratory infection* | | | |
|  | ICD-9 | 519.8 | DISEASE, RESPIRATORY SYSTEM NEC |
|  | ICD-10 | J98.8 | OTHER SPECIFIED RESPIRATORY DISORDR |
| *Scoliosis* | | | |
|  | ICD-9 | 737.30 | SCOLIOSIS, IDIOPATHIC |
|  | ICD-9 | 737.31 | SCOLIOSIS, RESOLVING IDIOPATHIC |
|  | ICD-9 | 737.32 | SCOLIOSIS, PROGRESSIVE IDIOPATHIC |
|  | ICD-9 | 737.33 | SCOLIOSIS, RADIATION |
|  | ICD-9 | 737.34 | SCOLIOSIS, THORACOGENIC |
|  | ICD-9 | 737.39 | SCOLIOSIS NEC |
|  | ICD-10 | M41.122 | ADOLESCENT IS, CERVICAL REGION |
|  | ICD-10 | M41.123 | ADOLESCENT IS, CERVICOTHORACIC REGION |
|  | ICD-10 | M41.124 | ADOLESCENT IS, THORACIC REGION |
|  | ICD-10 | M41.125 | ADOLESCENT IS, THORACOLUMBAR REGION |
|  | ICD-10 | M41.126 | ADOLESCENT IS, LUMBAR REGION |
|  | ICD-10 | M41.127 | ADOLESCENT IS, LUMBOSACRAL REGION |
|  | ICD-10 | M41.129 | ADOLESCENT IS, SITE UNSPECIFIED |
|  | ICD-10 | M41.20 | OTHER IS, SITE UNSPECIFIED |
|  | ICD-10 | M41.22 | OTHER IS, CERVICAL REGION |
|  | ICD-10 | M41.23 | OTHER IS, CERVICOTHORACIC REGION |
|  | ICD-10 | M41.24 | OTHER IS, THORACIC REGION |
|  | ICD-10 | M41.25 | OTHER IS, THORACOLUMBAR REGION |
|  | ICD-10 | M41.26 | OTHER IS, LUMBAR REGION |
|  | ICD-10 | M41.27 | OTHER IS, LUMBOSACRAL REGION |
|  | ICD-10 | M41.30 | THORACOGENIC SCOLIOSIS, SITE UNSPEC |
|  | ICD-10 | M41.34 | THORACOGENIC SCOLIOSIS, THORAC REGIN |
|  | ICD-10 | M41.35 | THORACOGENC SCOLIO, THORACOLUM REGIN |
|  | ICD-10 | M41.40 | NEUROMUSCULAR SCOLIOSIS, SITE UNSPE |
|  | ICD-10 | M41.41 | NMS, OCCIPITO-ATLANTO-AXIAL REGION |
|  | ICD-10 | M41.42 | NMS, CERVICAL REGION |
|  | ICD-10 | M41.43 | NMS, CERVICOTHORACIC REGION |
|  | ICD-10 | M41.44 | NMS, THORACIC REGION |
|  | ICD-10 | M41.45 | NMS, THORACOLUMBAR REGION |
|  | ICD-10 | M41.46 | NMS, LUMBAR REGION |
|  | ICD-10 | M41.47 | NMS, LUMBOSACRAL REGION |
|  | ICD-10 | M41.50 | OTH SEC SCOLIOSIS, SITE UNSPEC |
|  | ICD-10 | M41.52 | OTH SEC SCOLIOSIS, CERVICAL REGION |
|  | ICD-10 | M41.53 | OTH SEC SCOLIOSIS, CERVICOTHORAC REG |
|  | ICD-10 | M41.54 | OTH SEC SCOLIOSIS, THORACIC REGION |
|  | ICD-10 | M41.55 | OTH SEC SCOLIOSIS, THORACOLUMBAR REG |
|  | ICD-10 | M41.56 | OTH SEC SCOLIOSIS, LUMBAR REGION |
|  | ICD-10 | M41.57 | OTH SEC SCOLIOSIS, LUMBOSACRAL REGION |
|  | ICD-10 | M41.80 | OTH FORMS OF SCOLIOSIS, SITE UNSPEC |
|  | ICD-10 | M41.82 | OTH FORMS SCOLIOSIS, CERVICAL REGION |
|  | ICD-10 | M41.83 | OTH FORMS SCOLIOS, CERVICOTHORAC REG |
|  | ICD-10 | M41.84 | OTH FORMS SCOLIOSIS, THORACIC REGION |
|  | ICD-10 | M41.85 | OTH FORMS SCOLIOS, THORACOLUMB REGIN |
|  | ICD-10 | M41.86 | OTHER FORMS SCOLIOSIS, LUMBAR REGION |
|  | ICD-10 | M41.87 | OTH FORMS SCOLIOS, LUMBOSACRAL REGION |
|  | ICD-10 | M41.9 | SCOLIOSIS, UNSPECIFIED |
| *Strep* | | | |
|  | ICD-9 | 034.0 | SORE THROAT, STREPTOCOCCAL |
|  | ICD-9 | 034.1 | SCARLET FEVER |
|  | ICD-9 | 472.0 | RHINITIS, CHRONIC |
|  | ICD-9 | 472.1 | PHARYNGITIS, CHRONIC |
|  | ICD-9 | 472.2 | NASOPHARYNGITIS, CHRONIC |
|  | ICD-9 | 474.00 | TONSILLITIS, CHRONIC |
|  | ICD-9 | 474.01 | ADENOIDITIS, CHRONIC |
|  | ICD-9 | 474.02 | TONSILLITIS & ADENOIDITIS, CHRONIC |
|  | ICD-9 | 474.10 | HYPERTROPHY, TONSILS W/ADENOIDS |
|  | ICD-9 | 474.11 | HYPERTROPHY, TONSILS |
|  | ICD-9 | 474.12 | HYPERTROPHY, ADENOIDS |
|  | ICD-9 | 474.2 | ADENOID VEGETATIONS |
|  | ICD-9 | 474.8 | DISEASE, CHRN, TONSILS/ADENOIDS NEC |
|  | ICD-9 | 474.9 | DISEASE, CHRN, TONSILS/ADENOIDS NOS |
|  | ICD-10 | A38.0 | SCARLET FEVER WITH OTITIS MEDIA |
|  | ICD-10 | A38.1 | SCARLET FEVER WITH MYOCARDITIS |
|  | ICD-10 | A38.8 | SCARLET FEVER W OTHER COMPLICATIONS |
|  | ICD-10 | A38.9 | SCARLET FEVER, UNCOMPLICATED |
|  | ICD-10 | J02.0 | STREPTOCOCCAL PHARYNGITIS |
|  | ICD-10 | J31.1 | CHRONIC NASOPHARYNGITIS |
|  | ICD-10 | J31.2 | CHRONIC PHARYNGITIS |
|  | ICD-10 | J35.9 | CHRONIC DZ TONSILS & ADENOIDS UNS |
| *Tonsillitis* | | | |
|  | ICD-9 | 462 | PHARYNGITIS, ACUTE |
|  | ICD-9 | 463 | TONSILLITIS, ACUTE |
|  | ICD-10 | J02.8 | ACUTE PHARYNGITIS D/T OTH SPEC ORGN |
|  | ICD-10 | J02.9 | ACUTE PHARYNGITIS, UNSPECIFIED |
|  | ICD-10 | J03.00 | ACUTE STREP TONSILLITIS, UNSPECIFIE |
|  | ICD-10 | J03.01 | ACUTE RECR STREPTOCOCCAL TONSILLITS |
|  | ICD-10 | J03.80 | ACUTE TONSILLITIS D/T OTH SPEC ORGN |
|  | ICD-10 | J03.81 | ACUTE RECUR TONSILLIT D/T OTH SP OR |
|  | ICD-10 | J03.90 | ACUTE TONSILLITIS, UNSPECIFIED |
|  | ICD-10 | J03.91 | ACUTE RECURRENT TONSILLITIS UNS |
| *Tracheostomy* | | | |
|  | HCPCS | K0165 | Tracheostomy care kit |
|  | ICD-9 | 31.1 | Temporary tracheostomy |
|  | ICD-9 | 31.2\* | Permanent tracheostomy |
|  | ICD-9 | 31.74 | Revision of tracheostomy |
|  | ICD-9 | 97.23 | Replacement of tracheostomy tube |
|  | ICD-9 | 97.37 | Removal of tracheostomy tube |
|  | ICD-10 | Z43.0 | Encounter for attention to tracheostomy |
|  | ICD-10 | J95.0x | Tracheostomy complications |
|  | ICD-10 | Z93.0 | Tracheostomy status |
|  | ICD-9 | V44.0 | Tracheostomy status |
|  | CPT | 31502 | change of windpipe airway |
|  | CPT | 31600 | incision of windpipe |
|  | CPT | 31601 | incision of windpipe |
|  | CPT | 31603 | incision of windpipe |
|  | CPT | 31605 | incision of windpipe |
|  | CPT | 31610 | incision of windpipe |
|  | CPT | 31611 | surgery/speech prosthesis |
|  | CPT | 31612 | puncture/clear windpipe |
|  | CPT | 31613 | repair windpipe opening |
|  | CPT | 31614 | repair windpipe opening |
|  | ICD-9 | 31.2 | PERMANENT TRACHEOSTOMY\* |
|  | ICD-9 | 31.21 | Mediastinal tracheostomy |
|  | ICD-9 | 31.29 | Permanent tracheostomy NEC |
| *Ventilation support* | | | |
| Intermittent positive pressure breathing device | CPT | 94640 | airway inhalation treatment |
|  | ICD-9 | 93.91 | Intermittent positive pressure breathing [IPPB] |
|  | HCPCS | E0500 | Ippb all types |
|  | HCPCS | E0505 | IPPB w Manual Valves & Int P |
|  | HCPCS | E0510 | IPPB w Auto Valves & Ext Pow |
|  | HCPCS | E0515 | IPPB w Auto Valve & Int Comp |
|  | HCPCS | E0550 | Humidif extens supple w ippb |
| Respiratory treatments - cough assist | HCPCS | E0482 | Cough stimulating device |
|  | HCPCS | A7020 | Interface, cough stim device |
| Respiratory treatments - suction machine | HCPCS | K0743 | Portable home suction pump |
|  | HCPCS | E0600 | Suction pump portab hom modl |
|  | HCPCS | E2000 | Gastric suction pump hme mdl |
|  | HCPCS | A4605 | Trach suction cath close sys |
|  | HCPCS | A4624 | Tracheal suction tube |
|  | HCPCS | A4628 | Oropharyngeal suction cath |
|  | HCPCS | A7000 | Disposable canister for pump |
|  | HCPCS | A7001 | Nondisposable pump canister |
|  | HCPCS | A7002 | Tubing used w suction pump |
| BiPAP/CPAP |  |  |  |
|  | ICD-9 | V46.11 | Dependence on respirator, status |
|  | ICD-9 | V46.12 | Encounter for respirator dependence during power failure |
|  | ICD-10 | Z99.0 | Dependence on aspirator |
|  | ICD-10 | Z99.1 | Dependence on respirator |
|  | ICD-10 | Z99.11 | [ventilator] status |
|  | ICD-10 | Z99.12 | Encounter for respirator [ventilator] dependence during power failure |
|  | HCPCS | E0470 | RAD w/o backup non-inv intfc |
|  | HCPCS | E0471 | RAD w/backup non inv intrfc |
|  | HCPCS | A4604 | Tubing with heating element |
|  | HCPCS | A7027 | Combination oral/nasal mask |
|  | HCPCS | A7028 | Repl oral cushion combo mask |
|  | HCPCS | A7029 | Repl nasal pillow comb mask |
|  | HCPCS | A7031 | Replacement facemask interfa |
|  | HCPCS | A7032 | Replacement nasal cushion |
|  | HCPCS | A7033 | Replacement nasal pillows |
|  | HCPCS | A7034 | Nasal application device |
|  | HCPCS | A7035 | Pos airway press headgear |
|  | HCPCS | A7036 | Pos airway press chinstrap |
|  | HCPCS | A7037 | Pos airway pressure tubing |
|  | HCPCS | A7038 | Pos airway pressure filter |
|  | HCPCS | A7039 | Filter, non disposable w pap |
|  | HCPCS | A7044 | PAP oral interface |
|  | HCPCS | A7045 | Repl exhalation port for PAP |
|  | HCPCS | A7046 | Repl water chamber, PAP dev |
|  | HCPCS | E0601 | Cont airway pressure device |
|  | HCPCS | A7030 | CPAP full face mask |
|  | HCPCS | E0452 | INTERMIT ASSIS DEVICE W CPAP |
|  | HCPCS | K0269 | AEROSOL COMPRESSOR CPAP DEV |
| *Wheelchairs* | | | |
| General wheelchairs | ICD-9 | V46.3 | Wheelchair dependence |
|  | ICD-9 | V53.8 | Fitting and adjustment of wheelchair |
|  | ICD-10 | Z99.3 | Dependence on wheelchair |
| Lightweight wheelchairs | HCPCS | E1087 | Wheelchair lightwt fixed arm |
|  | HCPCS | E1088 | Wheelchair lightweight det a |
|  | HCPCS | E1089 | Wheelchair lightwt fixed arm |
|  | HCPCS | E1090 | Wheelchair lightweight det a |
|  | HCPCS | E1240 | Whchr litwt det arm leg rest |
|  | HCPCS | E1250 | Wheelchair lightwt fixed arm foot rest |
|  | HCPCS | E1260 | Wheelchair lightwt foot rest |
|  | HCPCS | E1270 | Wheelchair lightweight leg r |
|  | HCPCS | K0003 | Lightweight wheelchair |
|  | HCPCS | K0005 | Ultralightweight wheelchair |
| Motorized wheelchairs | HCPCS | E1211 | MOTR WHLCHAIR; DTACHBL ARMS LEGRSTS |
|  | HCPCS | E1212 | MOTR WHLCHAIR;FIX ARM DTACH FOOTRST |
|  | HCPCS | E1213 | MOTR WHLCHAIR; DTACHBL ARMS FOOTRST |
|  | HCPCS | K0090 | R/WHEEL TIRE PWR WHLCHAIR ANY SZ EA |
|  | HCPCS | K0091 | REAR WHEEL TIRE TUBE NOT 0 PRESS EA |
|  | HCPCS | K0092 | REAR WHEEL ASSEMBLY PWR WC CMPL EA |
|  | HCPCS | K0098 | Drive belt power wheelchair |
|  | HCPCS | K0099 | FRONT CASTER FOR POWER WHEELCHAIR |
|  | HCPCS | K0898 | Power wheelchair NOC |
|  | HCPCS | E1210 | MOTR WHLCHAIR; FIX ARM DTACH LEGRST |
|  | HCPCS | K0011 | Stnd wt pwr whlchr w control |
|  | HCPCS | K0012 | Ltwt portbl power whlchr |
|  | HCPCS | K0013 | Custom power wheelchair base |
|  | HCPCS | K0014 | Other power whlchr base |

\*Includes all subcodes.

Supplementary Table 2

Symptoms and complications across time periods overall and by adult age groups

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **1 year preindex** | | **Index hospitalization** | | **1 year postindex** | | **2 years postindex** | |
|  | *n* (%) | Mean ± SD | *n* (%) | Mean ± SD | *n* (%) | Mean ± SD | *n* (%) | Mean ± SD |
| **Overall** |  |  |  |  |  |  |  |  |
| Pneumonia | 14 (3) | 0.03 ± 0.17 | 34 (7) | 0.08 ± 0.27 | 43 (10) | 0.10 ± 0.30 | 58 (14) | 0.14 ± 0.35 |
| Other respiratory illness, symptom, or insufficiency\* | 47 (11) | 0.15 ± 0.53 | 59 (13) | 0.16 ± 0.45 | 101 (23) | 0.34 ± 0.77 | 134 (32) | 0.56 ± 1.01 |
| Ventilation support† | 9 (2) | 0.02 ± 0.14 | 44 (10) | 0.10 ± 0.30 | 54 (12) | 0.12 ± 0.33 | 62 (15) | 0.15 ± 0.36 |
| GI-related issues‡ | 38 (9) | 0.11 ± 0.42 | 75 (17) | 0.20 ± 0.49 | 96 (22) | 0.29 ± 0.61 | 116 (28) | 0.37 ± 0.66 |
| Musculoskeletal§ | 39 (9) | 0.09 ± 0.30 | 94 (21) | 0.23 ± 0.47 | 105 (24) | 0.26 ± 0.49 | 126 (30) | 0.34 ± 0.55 |
| Orthopedic surgery | 4 (0.9) | 0.01 ± 0.09 | 5 (1) | 0.01 ± 0.11 | 6 (1) | 0.01 ± 0.12 | 7 (2) | 0.02 ± 0.13 |
| Support/therapy¶ | 27 (6) | 0.07 ± 0.26 | 63 (14) | 0.15 ± 0.39 | 79 (18) | 0.20 ± 0.46 | 105 (25) | 0.20 ± 0.52 |
| **Age 18–29 years** |  |  |  |  |  |  |  |  |
| Pneumonia | 3 (2) | 0.02 ± 0.15 | 15 (12) | 0.12 ± 0.32 | 17 (13) | 0.13 ± 0.34 | 20 (17) | 0.17 ± 0.38 |
| Other respiratory illness, symptom, or insufficiency\* | 15 (12) | 0.18 ± 0.56 | 19 (15) | 0.18 ± 0.48 | 38 (30) | 0.47 ± 0.91 | 47 (40) | 0.73 ± 1.16 |
| Ventilation support† | 1 (0.8) | 0.01 ± 0.09 | 19 (15) | 0.15 ± 0.36 | 22 (17) | 0.17 ± 0.38 | 26 (22) | 0.22 ± 0.41 |
| GI-related issues‡ | 10 (8) | 0.12 ± 0.46 | 23 (18) | 0.23 ± 0.55 | 22 (17) | 0.24 ± 0.60 | 25 (21) | 0.29 ± 0.64 |
| Musculoskeletal§ | 11 (9) | 0.09 ± 0.28 | 33 (26) | 0.28 ± 0.50 | 35 (27) | 0.30 ± 0.52 | 39 (33) | 0.36 ± 0.56 |
| Orthopedic surgery | 0 (0) | 0 ± 0 | 2 (2) | 0.02 ± 0.12 | 0 (0) | 0 ± 0 | 0 (0) | 0 ± 0 |
| Support/therapy¶ | 4 (3) | 0.03 ± 0.17 | 24 (19) | 0.21 ± 0.46 | 18 (14) | 0.16 ± 0.43 | 22 (18) | 0.21 ± 0.47 |
| **Age 30–54 years** |  |  |  |  |  |  |  |  |
| Pneumonia | 7 (4) | 0.04 ± 0.20 | 13 (8) | 0.08 ± 0.27 | 11 (7) | 0.07 ± 0.26 | 16 (10) | 0.10 ± 0.31 |
| Other respiratory illness, symptom, or insufficiency\* | 10 (6) | 0.09 ± 0.38 | 20 (12) | 0.17 ± 0.51 | 33 (21) | 0.32 ± 0.77 | 40 (26) | 0.47 ± 0.97 |
| Ventilation support† | 4 (3) | 0.02 ± 0.16 | 14 (9) | 0.09 ± 0.28 | 12 (8) | 0.08 ± 0.27 | 15 (10) | 0.10 ± 0.30 |
| GI-related issues‡ | 7 (4) | 0.06 ± 0.31 | 23 (14) | 0.16 ± 0.43 | 29 (19) | 0.26 ± 0.60 | 34 (22) | 0.32 ± 0.55 |
| Musculoskeletal§ | 9 (6) | 0.06 ± 0.27 | 31 (19) | 0.22 ± 0.50 | 32 (20) | 0.21 ± 0.42 | 43 (28) | 0.32 ± 0.55 |
| Orthopedic surgery | 1 (0.6) | 0.01 ± 0.08 | 1 (0.6) | 0.01 ± 0.08 | 0 (0) | 0 ± 0 | 0 (0) | 0 ± 0 |
| Support/therapy¶ | 10 (6) | 0.07 ± 0.31 | 20 (12) | 0.13 ± 0.38 | 30 (19) | 0.24 ± 0.52 | 42 (27) | 0.33 ± 0.57 |
| **Age ≥55 years** |  |  |  |  |  |  |  |  |
| Pneumonia | 4 (3) | 0.03 ± 0.16 | 6 (4) | 0.04 ± 0.19 | 15 (10) | 0.10 ± 0.30 | 24 (16) | 0.15 ± 0.36 |
| Other respiratory illness, symptom, or insufficiency\* | 22 (14) | 0.19 ± 0.63 | 20 (13) | 0.14 ± 0.36 | 30 (20) | 0.26 ± 0.60 | 47 (32) | 0.50 ± 0.89 |
| Ventilation support† | 4 (3) | 0.03 ± 0.16 | 11 (7) | 0.07 ± 0.26 | 20 (13) | 0.13 ± 0.34 | 21 (14) | 0.14 ± 0.35 |
| GI-related issues‡ | 21 (14) | 0.17 ± 0.47 | 29 (19) | 0.21 ± 0.48 | 45 (30) | 0.37 ± 0.62 | 57 (39) | 0.48 ± 0.66 |
| Musculoskeletal§ | 19 (12) | 0.13 ± 0.36 | 30 (19) | 0.19 ± 0.40 | 38 (25) | 0.28 ± 0.52 | 44 (30) | 0.33 ± 0.54 |
| Orthopedic surgery | 3 (2) | 0.02 ± 0.14 | 2 (1) | 0.01 ± 0.11 | 6 (4) | 0.04 ± 0.20 | 7 (5) | 0.05 ± 0.22 |
| Support/therapy¶ | 13 (8) | 0.08 ± 0.28 | 19 (12) | 0.12 ± 0.33 | 31 (21) | 0.21 ± 0.20 | 41 (28) | 0.30 ± 0.50 |

GI = gastrointestinal. \*Includes acute and chronic bronchitis, acute and chronic sinusitis, acute tonsillitis, acute upper respiratory infection, respiratory infection, respiratory symptoms or insufficiency, cold/cough/fever/influenza. †Includes intermittent positive pressure breathing device, respiratory treatments (cough assist/suction machine), bilevel positive airway pressure/continuous positive airway pressure, and tracheostomy. ‡Includes esophagitis/reflex, dysphagia, feeding problems, gastrostomy (G-tube) feeding/upper GI procedures. §Includes muscle weakness, lack of coordination, osteoporosis/fracture/other bony abnormality, scoliosis, contracture/dislocation. ¶Includes occupational therapy, wheelchairs.