**Supplementary 1: Comorbidities by body system category**

| **Body system category** | **Comorbidities** |
| --- | --- |
| Digestive system disorder | GERD/reflux esophagitis  Esophageal diverticulum  Esophageal strictures, rings, and webs  Eosinophilic esophagitis  Barrett’s esophagus  Infectious esophagitis  Gastritis or duodenitis  Functional dyspepsia  Helicobacter pylori infection  Peptic ulcer disease  Hiatal hernia  Paraesophageal hernia  Gastric volvulus  Noninfective gastroenteritis and colitis  Irritable bowel syndrome  Intestinal pseudo-obstruction  Chronic constipation  Cirrhosis  Esophageal varices  Nonalcoholic fatty liver disease  Chronic viral hepatitis  Chronic pancreatitis |
| Musculoskeletal or connective tissue systems disorder | Psoriasis  Sjogren’s syndrome  Sicca syndrome  Rheumatoid arthritis  Vasculitis  Systemic lupus erythematosus  Systemic sclerosis  Polymyalgia rheumatica  Connective tissue disorders, NOS  Spondyloarthropathy |
| Nervous system disorder | Extrapyramidal and movement disorders  Multiple sclerosis  Migraine  Epilepsy  Cerebrovascular disease, TIAs, hemorrhage, and infarction  Sleep apnea  Cervical spine/root disorder  Thoracic spine/root disorder  Polyneuropathy  Diseases of myoneural junction and muscle  Cerebral palsy |
| Mood disorder | Dementia  Schizophrenia, schizotypal, and delusional disorders  Mood, depression, and anxiety disorders |
| Circulatory system disorder | Extrinsic compression from vascular pathology  Hypertension  Ischemic heart disease  Pulmonary hypertension  Cardiomyopathy and cardiomegaly  Cardiac arrhythmias and conduction disorders  Peripheral vascular disease |
| Neoplasms | Neoplasm of pharynx  Neoplasm of esophagus  Neoplasm of respiratory and intrathoracic organs  Neoplasm of stomach  Neoplasm of abdomen |
| Disorders of the blood, blood-forming organs, and certain disorders involving the immune mechanism | Anemia  Sarcoidosis  Amyloidosis |
| Endocrine system, metabolic, or nutritional disorder | Disorders of thyroid gland  Diabetes mellitus  Malnutrition and underweight  Obesity  Morbid obesity |
| Respiratory system disorder | Asthma  Chronic lower respiratory disorder, NOS |

GERD, gastroesophageal reflux disease; NOS, not otherwise specified; TIAs, transient ischemic attacks