

Appendix 1. International Classification of Diseases, Ninth Revision (ICD-9) codes for neurologic disorders used for inclusion in study population.

Group	ICD-9 Codes and Descriptions
Metabolic disorders with neuro/muscular involvement	271.0 – Glycogen storage disease type II (Pompe disease) 277.2 – Other disorders of purine and pyrimidine metabolism (Lesch-Nyhan) 277.5 – Mucopolysaccharidosis 277.87 – Disorders of mitochondrial metabolism
Motor neuron diseases	335 (all subgroups) – Anterior horn cell disease 356.0 – Hereditary peripheral neuropathy (Dejerine-Sottas) 356.1 – Peroneal muscular atrophy (Charcot-Marie-Tooth) 334.0 – Friedreich's ataxia 334.1 – Hereditary spastic paraplegia
Muscular dystrophies	359.0 – Muscular dystrophy, Congenital hereditary 359.1 – Muscular dystrophy, Hereditary progressive 359.21 – Muscular dystrophy, Myotonic 359.23 – Myotonic chondrodystrophy
Cerebral and other degenerative diseases of the central nervous system	330.0 – Leukodystrophy 330.1 – Cerebral lipidoses 330.2 – Cerebral degeneration in generalized lipidoses 330.3 – Cerebral degeneration of childhood in diseases classified elsewhere 330.8 – Other specified cerebral degenerations in childhood 330.9 – Unspecified cerebral degeneration in childhood 333.0 – Other degenerative diseases of the basal ganglia (PKAN) 333.6 – Hereditary torsion dystonia
Cerebral palsy	343 (all subgroups) – Infantile cerebral palsy
Epilepsy and recurrent seizures	345 (all subgroups)
Spina bifida	741 (all subgroups) – Spina bifida
Other congenital anomalies of the nervous system	742.0 – Encephalocele 742.1 – Microcephalus 742.2 – Congenital reduction deformities of brain 742.3 – Congenital hydrocephalus 742.4 – Other specified congenital anomalies of brain 742.5 – Other specified congenital anomalies of spinal cord 742.8 – Other specified congenital anomalies of nervous system 742.9 – Unspecified congenital anomaly of brain, spinal cord and nervous system
Chromosomal anomalies	758.0 – Down syndrome (Trisomy 21) 758.1 – Trisomy 13 758.2 – Trisomy 18 758.3 – Autosomal deletion syndromes
Traumatic brain injury	907.0 – Late effect of intracranial injury without mention of skull fracture

Appendix 2. Characteristics of study population and proportion vaccinated among children with neurologic disorders, their siblings, and sample of the general pediatric population in the Commercial Claims and Encounters database, 2006-2014.

	Children with neurologic disorders (Person-years) Vaccinated/Total ^a (% vaccinated)	Siblings ^{b,c} (Person-years) Vaccinated/Total ^a (% vaccinated)	Random sample ^d (Person-years) Vaccinated/Total ^a (% vaccinated)
Demographic characteristics			
All	112,138/324,022 (34.6)	97,527/348,136 (28.0)	1,311,787/5,523,202 (23.8)
Male	62,062/179,770 (35.4)	48,911/175,232 (27.9)	670,106/2,822,408 (23.7)
Age Group^e			
1-<2 years	9,323/17,203 (54.2)	5,570/12,478 (44.6)	131,315/253,559 (51.8)
2-<5 years	23,637/50,195 (47.1)	19,894/49,443 (40.2)	321,528/823,461 (39.0)
5-<10 years	37,696/100,900 (37.4)	36,111/112,312 (32.2)	413,111/1,553,299 (26.6)
10-17 years	41,482/155,724 (26.6)	35,952/173,903 (20.7)	445,833/2,892,883 (15.4)
Neurologic disorders^f	Children with neurologic disorders (Person-years) Vaccinated/Total^a (% vaccinated)	Siblings of children with specified neurologic disorders^{b,c} (Person-years) Vaccinated/Total^a (% vaccinated)	
Muscular dystrophies	4,624/9,517 (48.6)	3,249/9,221 (35.2)	
Chromosomal anomalies	18,708/39,504 (47.4)	16,699/47,758 (35.0)	
Metabolic diseases with neuro/muscular involvement	2,870/6,684 (42.9)	2,262/6,590 (34.3)	
Motor neuron diseases	3,221/7,827 (41.2)	2,316/7,476 (31.0)	
Cerebral and other degenerative diseases of the CNS ^g	3,107/7,690 (40.4)	2,629/8,022 (32.8)	
Cerebral Palsy	30,348/76,105 (39.9)	23,865/79,121 (30.2)	
Other congenital anomalies of the nervous system	25,828/65,904 (39.2)	21,199/67,941 (31.2)	
Spina bifida	5,752/16,438 (35.0)	5,305/18,780 (28.3)	
Traumatic brain injury	1,035/3,170 (32.6)	1,025/3,601 (28.5)	

Epilepsy and recurrent seizures	56,706/183,352 (30.9)	50,444/196,700 (25.7)
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^a Number of children represent person-years; an individual child may have been included in the database multiple times if enrolled in >1 influenza season; seasons were analyzed separately; ^b Siblings of children with neurologic disorders were identified by a shared code linking them to the person under whose insurance they were covered, usually an insured adult. ^c We did not examine whether siblings also had a neurologic disorder. Numbers in this column refer to the number of siblings of the children identified with specific neurologic disorders. ^d We did not examine whether children in the random sample had a neurologic disorder. ^e Age, not date of birth, was included in the dataset, and thus vaccination status of children <1 years old could not be accurately evaluated. ^f Children could have >1 neurologic disorder. ^g CNS: Central nervous system.