Supplementary Table 2. ICD-10 codes for etiology

Etiology	ICD-10 codes
Brain anomaly	**Q04: Other congenital malformations of brain**
	Q04.0: Congenital malformations of corpus callosum
	Q04.1: Arhinencephaly
	Q04.2: Holoprosencephaly
	Q04.3: Other reduction deformities of brain
	Q04.4: Septo-optic dysplasia
	Q04.5: Megalencephaly
	Q04.6: Microcephaly
	Q04.8: Other specified congenital malformations of brain
	Q04.9: Congenital malformation of brain, unspecified
Hypoxic brain injury	**G931: Anoxic brain damage, not elsewhere classified**
	P910: Cerebral depression, coma in newborn
	P916: Other specified disturbances of cerebral status of newborn
Brain hemorrhage	**I60: Subarachnoid hemorrhage**
	I60.0: Subarachnoid hemorrhage from carotid siphon and bifurcation
	I60.1: Subarachnoid hemorrhage from middle cerebral artery
	I60.2: Subarachnoid hemorrhage from anterior communicating artery
	I60.3: Subarachnoid hemorrhage from posterior communicating artery
	I60.4: Subarachnoid hemorrhage from basilar artery
	I60.5: Subarachnoid hemorrhage from vertebral artery
	I60.6: Subarachnoid hemorrhage from other intracranial arteries
	I60.7: Subarachnoid hemorrhage from unspecified intracranial artery
	I61: Intracerebral hemorrhage
	I61.0: Intracerebral hemorrhage in hemisphere, subcortical
	I61.1: Intracerebral hemorrhage in hemisphere, cortical
	I61.2: Intracerebral hemorrhage in hemisphere, unspecified
	I61.3: Intracerebral hemorrhage in brain stem
	I61.4: Intracerebral hemorrhage in cerebellum
	I61.5: Intracerebral hemorrhage, intraventricular
	I61.6: Intracerebral hemorrhage, multiple localized
	I61.8: Other intracerebral hemorrhage
	I61.9: Intracerebral hemorrhage, unspecified
	I62: Other nontraumatic intracranial hemorrhage
	I62.0: Subdural hemorrhage (acute) (nontraumatic)
	I62.1: Nontraumatic extradural hemorrhage
	I62.9: Nontraumatic intracranial hemorrhage, unspecified
Intracranial tumor	**C70–72: Malignant neoplasms of brain and other parts of central nervous system**
	C70: Malignant neoplasm of meninges
	C71: Malignant neoplasm of brain
	C72: Malignant neoplasm of spinal cord, cranial nerves and other parts of central nervous system
	C793: Secondary malignant neoplasm of brain
	C799: Secondary malignant neoplasm of unspecified site
	D32–33: Benign neoplasms of meninges
	D32: Benign neoplasm of meninges
	D33: Benign neoplasm of brain and other parts of central nervous system
	D42–43: Neoplasms of uncertain or unknown behavior of meninges
	D42: Neoplasm of uncertain or unknown behavior of meninges
	D43: Neoplasm of uncertain or unknown behavior of brain and central nervous system
Traumatic brain injury	**S06: Intracranial injury**
	S06.0: Concussion
	S06.1: Traumatic cerebral edema
	S06.2: Diffuse traumatic brain injury
	S06.3: Focal traumatic brain injury
	S06.4: Epidural hemorrhage
	S06.5: Traumatic subdural hemorrhage
	S06.6: Traumatic subarachnoid hemorrhage
	S06.7: Intracranial injury with prolonged coma
	S06.8: Other intracranial injuries
	S06.9: Intracranial injury, unspecified
Metabolic disorders	**E70–72: Disorders of aromatic amino-acid metabolism**
	E70: Disorders of aromatic amino-acid metabolism
	E71: Disorders of branched-chain amino-acid metabolism and fatty-acid metabolism
	E72: Other disorders of amino-acid metabolism
	E74–77: Disorders of carbohydrate metabolism
	E74: Other disorders of carbohydrate metabolism
	E75: Disorders of sphingolipid metabolism and other lipid storage disorders
	E76: Disorders of glycosaminoglycan metabolism
	E77: Disorders of glycoprotein metabolism
	E79–80: Disorders of purine and pyrimidine metabolism
	E79: Disorders of purine and pyrimidine metabolism
	E80: Disorders of porphyrin and bilirubin metabolism
	E83.0: Disorders of copper metabolism
Genetic etiology	**D56.0: Alpha thalassemia**
	D56.1: Beta thalassemia
	D56.1: Beta thalassemia
	D56.1: Beta thalassemia
	D56.1: Beta thalassemia
	D56.1: Beta thalassemia
	D56.2: Delta-beta thalassemia
	D56.3: Thalassemia minor

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Supplementary Table 2. Continued

Etiology	ICD-10 codes
	D56.4: Hereditary persistence of fetal hemoglobin
	D64.4: Other acquired pure red cell aplasia
	D64.4: Other acquired pure red cell aplasia
	D76.1: Hemophagocytic lymphohistiocytosis
	D76.1: Hemophagocytic lymphohistiocytosis
	D80.0: Hereditary hypogammaglobulinemia
	D81.8: Other combined immunodeficiencies
	E25.0: Congenital adrenal hyperplasia
	E25.0: Congenital adrenal hyperplasia
	E25.0: Congenital adrenal hyperplasia
	E25.0: Congenital adrenal hyperplasia
	E25.9: Adrenogenital disorder, unspecified
	E27.1: Primary adrenocortical insufficiency
	E27.1: Primary adrenocortical insufficiency
	E34.8: Other specified endocrine disorders
	E70.2: Tyrosinemia
	E70.3: Albinism
	E70.3: Albinism
	E70.3: Albinism
	E71.3: Disorders of fatty-acid metabolism
	E71.3: Disorders of fatty-acid metabolism
	E72.0: Disorders of amino-acid transport
	E72.0: Disorders of amino-acid transport
	E72.0: Disorders of amino-acid transport
	E72.1: Disorders of sulfur-bearing amino-acid metabolism
	E72.1: Disorders of sulfur-bearing amino-acid metabolism
	E72.1: Disorders of sulfur-bearing amino-acid metabolism
	E72.1: Disorders of sulfur-bearing amino-acid metabolism
	E72.1: Disorders of sulfur-bearing amino-acid metabolism
	E72.2: Disorders of urea cycle metabolism
	E72.2: Disorders of urea cycle metabolism
	E72.2: Disorders of urea cycle metabolism
	E72.2: Disorders of urea cycle metabolism
	E72.2: Disorders of urea cycle metabolism
	E72.3: Disorders of lysine and hydroxylysine metabolism
	E72.3: Disorders of lysine and hydroxylysine metabolism
	E72.4: Disorders of ornithine metabolism
	E72.4: Disorders of ornithine metabolism
	E72.4: Disorders of ornithine metabolism
	E72.5: Disorders of glycine metabolism
	E72.5: Disorders of glycine metabolism
	E72.5: Disorders of glycine metabolism
	E72.5: Disorders of glycine metabolism
	E72.5: Disorders of glycine metabolism
	E72.8: Other specified disorders of amino-acid metabolism
	E72.8: Other specified disorders of amino-acid metabolism

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Supplementary Table 2. Continued

Etiology	ICD-10 codes
	E74.0: Glycogen storage disease
	E74.0: Glycogen storage disease
	E74.0: Glycogen storage disease
	E74.0: Glycogen storage disease
	E74.0: Glycogen storage disease
	E74.0: Glycogen storage disease
	E74.0: Glycogen storage disease
	E74.0: Glycogen storage disease
	E74.0: Glycogen storage disease
	E74.0: Glycogen storage disease
	E74.0: Glycogen storage disease
	E74.0: Glycogen storage disease
	E74.2: Disorders of fructose metabolism
	E74.2: Disorders of fructose metabolism
	E74.2: Disorders of fructose metabolism
	E75.0: GM2 gangliosidosis
	E75.0: GM2 gangliosidosis
	E75.0: GM2 gangliosidosis
	E75.0: GM2 gangliosidosis
	E75.0: GM2 gangliosidosis
	E75.0: GM2 gangliosidosis
	E75.1: Other gangliosidosis
	E75.1: Other gangliosidosis
	E75.1: Other gangliosidosis
	E75.2: Other sphingolipidosis
	E75.2: Other sphingolipidosis
	E75.2: Other sphingolipidosis
	E75.2: Other sphingolipidosis
	E75.2: Other sphingolipidosis
	E75.2: Other sphingolipidosis
	E75.2: Other sphingolipidosis
	E75.4: Neuronal ceroid lipofuscinosis
	E75.4: Neuronal ceroid lipofuscinosis
	E75.4: Neuronal ceroid lipofuscinosis
	E76.0: Mucopolysaccharidosis, type I
	E76.0: Mucopolysaccharidosis, type I
	E76.0: Mucopolysaccharidosis, type I
	E76.0: Mucopolysaccharidosis, type I
	E76.1: Mucopolysaccharidosis, type II
	E76.1: Mucopolysaccharidosis, type II
	E76.2: Other mucopolysaccharidoses
	E76.2: Other mucopolysaccharidoses
	E76.2: Other mucopolysaccharidoses
	E76.2: Other mucopolysaccharidoses
	E80.2: Disorders of porphyrin metabolism
	E80.2: Disorders of porphyrin metabolism
	E83.3: Disorders of phosphorus metabolism
	E85.0: Non-neuropathic hereditary amyloidosis
	E85.1: Neuropathic hereditary amyloidosis
	E85.1: Neuropathic hereditary amyloidosis
	E85.2: Hereditary amyloidosis, unspecified
	E85.4: Organ-limited amyloidosis
	E85.4: Organ-limited amyloidosis
	F84.2: Rett's syndrome

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Supplementary Table 2. Continued

Etiology	ICD-10 codes
	F01.1: Multi-infarct dementia
	G10: Huntington's disease
	G10: Huntington's disease
	G11.1: Early-onset cerebellar ataxia
	G12.0: Infantile spinal muscular atrophy, type I [Werdnig-Hoffmann]
	G12.1: Other inherited spinal muscular atrophy
	G12.1: Other inherited spinal muscular atrophy
	G12.1: Other inherited spinal muscular atrophy
	G12.1: Other inherited spinal muscular atrophy
	G12.20: Motor neuron disease, unspecified
	G12.28: Other motor neuron disease
	G12.28: Other motor neuron disease
	G71.0: Muscular dystrophy
	G71.0: Muscular dystrophy
	G71.1: Myotonic disorders
	G71.1: Myotonic disorders
	H31.2: Chorioretinal inflammation
	I49.82: Long QT syndrome
	D12.6: Benign neoplasm of colon, unspecified
	N25.1: Renal osteodystrophy
	Q75.1: Craniosynostosis
	Q75.1: Craniosynostosis
	Q75.4: Mandibulofacial dysostosis
	Q75.4: Mandibulofacial dysostosis
	Q75.4: Mandibulofacial dysostosis
	Q79.6: Ehlers-Danlos syndrome
	Q80.1: Harlequin fetus
	Q80.1: Harlequin fetus
	Q80.4: Lamellar ichthyosis
	Q87.1: Congenital malformation syndromes predominantly affecting facial appearance
	Q87.1: Congenital malformation syndromes predominantly affecting facial appearance
	Q87.1: Congenital malformation syndromes predominantly affecting facial appearance
	Q87.1: Congenital malformation syndromes predominantly affecting facial appearance
	Q87.1: Congenital malformation syndromes predominantly affecting facial appearance
	Q87.1: Congenital malformation syndromes predominantly affecting facial appearance
	Q87.1: Congenital malformation syndromes predominantly affecting facial appearance
	Q87.1: Congenital malformation syndromes predominantly affecting facial appearance
	Q87.1: Congenital malformation syndromes predominantly affecting facial appearance
	Q87.2: Congenital malformation syndromes predominantly involving limbs
	Q87.3: Other congenital malformation syndromes involving early overgrowth
	Q87.3: Other congenital malformation syndromes involving early overgrowth
	Q90.0: Down syndrome, trisomy 21, nonmosaicism (meiotic nondisjunction)

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Supplementary Table 2. Continued

Etiology	ICD-10 codes
	Q90.1: Down syndrome, trisomy 21, mosaicism (mitotic nondisjunction)
	Q90.2: Down syndrome, translocation
	Q90.9: Down syndrome, unspecified
	Q91.0: Patau syndrome, trisomy 13, nonmosaicism (meiotic nondisjunction)
	Q91.1: Patau syndrome, trisomy 13, mosaicism (mitotic nondisjunction)
	Q91.2: Patau syndrome, trisomy 13, translocation
	Q91.4: Edwards syndrome, trisomy 18, nonmosaicism (meiotic nondisjunction)
	Q91.5: Edwards syndrome, trisomy 18, mosaicism (mitotic nondisjunction)
	Q91.6: Edwards syndrome, trisomy 18, translocation
	Q91.7: Edwards syndrome, unspecified
	Q93.4: Other deletions of part of a chromosome
	Q93.4: Other deletions of part of a chromosome
	Q93.5: Other deletions of part of a chromosome
	Q93.5: Other deletions of part of a chromosome
	Q93.5: Other deletions of part of a chromosome
	Q93.5: Other deletions of part of a chromosome
	Q96.0: Karyotype 45,X
	Q96.1: Karyotype 46,X iso (Xq)
	Q96.2: Karyotype 46,X iso (Xp)
	Q96.3: Karyotype 46,XX with abnormal sex chromosome, except iso (Xq)
	Q96.4: Karyotype 46,XY with abnormal sex chromosome, except iso (Xq)
	Q98.0: Klinefelter syndrome, karyotype 47,XXY
	Q98.1: Klinefelter syndrome, karyotype 47,XXY/46,XY mosaicism
	Q98.2: Klinefelter syndrome, karyotype 48,XXXY
	Q99.2: Fragile X chromosome
Tuberous sclerosis complex	Q851: Tuberous sclerosis
Sturge-Weber syndrome	Q858: Other phakomatoses, not elsewhere classified
CNS infection	G00-02: Meningitis
	G00: Bacterial meningitis, not elsewhere classified
	G00.0: Haemophilus meningitis
	G00.1: Pneumococcal meningitis
	G00.2: Streptococcal meningitis
	G01: Meningitis in bacterial diseases classified elsewhere
	G02: Meningitis in other infectious and parasitic diseases classified elsewhere
	G03-07: Other inflammatory diseases of the central nervous system
	G03: Meningitis due to other and unspecified causes
	G03.0: Nonpyogenic meningitis
	G03.1: Chronic meningitis
	G03.2: Benign recurrent meningitis
	G03.3: Meningitis due to other specified bacteria

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Supplementary Table 2. Continued

Etiology	ICD-10 codes
	G03.4: Meningitis due to unspecified bacterium
	G03.8: Meningitis due to other specified organisms
	G03.9: Meningitis, unspecified
	G04: Encephalitis, myelitis and encephalomyelitis
	G04.0: Acute disseminated encephalitis
	G04.1: Other encephalitis, myelitis and encephalomyelitis
	G04.8: Other specified encephalitis, myelitis and encephalomyelitis
	G04.9: Encephalitis, myelitis and encephalomyelitis, unspecified
	G05: Encephalitis, myelitis and encephalomyelitis in diseases classified elsewhere
	G06: Intracranial and intraspinal abscess and granuloma
	G06.0: Intracranial abscess and granuloma
	G06.1: Intraspinal abscess and granuloma
	G07: Intracranial and intraspinal abscess and granuloma in diseases classified elsewhere
	A1781: Other tuberculosis of nervous system
	A81–89: Other viral infections characterized by skin and mucous membrane lesions
	A81: Atypical virus infections of central nervous system
	A81.0: Creutzfeldt-Jakob disease
	A81.1: Subacute sclerosing panencephalitis
	A81.2: Progressive multifocal leukoencephalopathy
	A81.8: Other atypical virus infections of central nervous system
	A81.9: Atypical virus infection of central nervous system, unspecified
	A82: Rabies
	A82.0: Urban rabies
	A82.1: Sylvatic rabies
	A82.9: Rabies, unspecified
	A83: Mosquito-borne viral encephalitis
	A83.0: Japanese encephalitis
	A83.1: Western equine encephalitis
	A83.2: Eastern equine encephalitis
	A83.3: St. Louis encephalitis
	A83.4: Australian encephalitis
	A83.5: California encephalitis
	A83.6: Venezuelan equine encephalitis
	A83.8: Other mosquito-borne viral encephalitis
	A83.9: Mosquito-borne viral encephalitis, unspecified
	A84: Tick-borne viral encephalitis
	A84.0: Far Eastern tick-borne encephalitis
	A84.1: Central European tick-borne encephalitis
	A84.8: Other tick-borne viral encephalitis
	A84.9: Tick-borne viral encephalitis, unspecified
	A85: Other viral encephalitis, not elsewhere classified
	A85.0: Enteroviral encephalitis

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Supplementary Table 2. Continued

Etiology	ICD-10 codes
	A85.1: Adenoviral encephalitis
	A85.2: Arthropod-borne viral encephalitis, unspecified
	A85.8: Other specified viral encephalitis
	A85.9: Viral encephalitis, unspecified
	A86: Unspecified viral encephalitis
	A87: Viral meningitis
	A87.0: Enteroviral meningitis
	A87.1: Adenoviral meningitis
	A87.2: Lymphocytic choriomeningitis
	A87.8: Other viral meningitis
	A87.9: Viral meningitis, unspecified
	A88: Other viral infections of central nervous system, not elsewhere classified
	A88.0: Enteroviral exanthematous fever
	A88.8: Other specified viral infections of central nervous system
	A89: Unspecified viral infection of central nervous system
	B003-004: Herpesviral (herpes simplex) infections
	B00.3: Herpesviral meningitis
	B00.4: Herpesviral encephalitis
	B060: Rubella [German measles]
	B220: HIV disease resulting in infectious and parasitic diseases
	B375: Candidiasis of mouth
	B384: Candidiasis of other sites
	B431–2: Cryptococcosis
	B43.1: Pulmonary cryptococcosis
	B43.2: Cutaneous cryptococcosis
	B451: Chromoblastomycosis and pheohyphomycosis
	B461: Sporotrichosis
	B500: Plasmodium falciparum malaria
	B582: Plasmodium malariae malaria
	B602: Other specified protozoal diseases
	B690: Echinococcosis, unspecified

ICD-10, International Classification of Diseases, 10th Revision.

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