

Supplement 3: The CHERuB study definition of any and individual neurodevelopmental impairment *Denotes inclusion in the primary outcome of survival without neurosensory impairment		
Data source	Domains/ conditions	Definition
NNRD	Developmental delay*	<input type="checkbox"/> Mild developmental delay (3-6 months) <input type="checkbox"/> Moderate developmental delay (6-12 months) <input type="checkbox"/> Severe developmental delay (>12 months)
	Communication*	<input type="checkbox"/> Any difficulty with communication <input type="checkbox"/> Difficulty with speech (<10 words or signs) <input type="checkbox"/> Difficulty understanding outside of familiar context <input type="checkbox"/> Has <5 meaningful words, vocalisations, or signs <input type="checkbox"/> Unable to understand words or signs
	Motor*	<input type="checkbox"/> Any difficulty walking <input type="checkbox"/> Unable to walk without assistance <input type="checkbox"/> Non-fluent or abnormal gait reducing mobility <input type="checkbox"/> Difficulty with the use of both hands <input type="checkbox"/> Difficulty with the use of one hand <input type="checkbox"/> Unable or needs support sitting <input type="checkbox"/> Unable to sit <input type="checkbox"/> Unable to use hands e.g. to feed
	Vision*	<input type="checkbox"/> Any vision problems including squint <input type="checkbox"/> A not fully correctable visual defect <input type="checkbox"/> Complete blindness or able to see light only
	Auditory*	<input type="checkbox"/> A hearing impairment <input type="checkbox"/> Hearing impairment correctable with aids <input type="checkbox"/> Hearing impairment not correctable with aids
HES and ONS Mortality Records	Cognitive impairment*	F70-79 Intellectual impairment F81.0 Specific reading disorder F81.1 Specific spelling disorder F81.2 Specific disorder of arithmetical skills F81.3 Mixed disorder of scholastic skills F81.8 Other developmental disorders of scholastic skills F81.9 Developmental disorder of scholastic skills, unspecified R48.0 Dyslexia and alexia R 48.1 Agnosia R48.2 Apraxia  R48.8 Other and unspecified symbolic dysfunctions
	Developmental disorders of speech and language*	F80.0 Specific speech articulation disorder F80.1 Expressive language disorder F80.2 Receptive language disorder F80.3 Acquired aphasia with epilepsy [Landau-Kleffner]

	F80.9 Developmental disorder of speech and language, unspecified R47.0 Dysphasia and aphasia R47.1 Dysarthria and anarthria R47.8 Other and unspecified speech disturbances
Specific developmental disorder of motor function/ dystonia/ cerebral palsy*	F82 Specific developmental disorder of motor function G24.9 Dystonia, unspecified G80 Cerebral palsy G81 Hemiplegia G82 Paraplegia and tetraplegia G83.0 Diplegia of upper limbs G83.1 Monoplegia of lower limb G83.2 Monoplegia of upper limb G83.4 Cauda equina syndrome G83.5 Locked in syndrome G83.6 Upper motor neuron facial paralysis R26.0 Ataxic gait R26.1 Paralytic gait R27.0 Ataxia unspecified R27.8 Other and unspecified lack of coordination G 25.9 Extrapyramidal and movement disorder, unspecified
Mixed developmental disorders	F83 Mixed specific developmental disorders
Developmental delay	R62.0 Delayed milestone*
Pervasive developmental disorders	F84.0 Childhood autism F84.1 Atypical autism F84.4 Overactive disorder associated with mental retardation and stereotyped movements F84.5 Asperger syndrome F84.8 Other pervasive developmental disorders F84.9 Pervasive developmental disorder, unspecified
Other disorders of psychological development	F88 Other disorders of psychological development F89 Unspecified disorder of psychological development
Hyperkinetic disorders	F 90.0 Disturbance of activity and attention F90.1 Hyperkinetic conduct disorder F90.8 Other hyperkinetic disorders F90.9 Hyperkinetic disorder, unspecified
Tic disorders	F95.0 Transient tic disorder F95.1 Chronic motor or vocal tic disorder F95.8 Other tic disorders F95.9 Tic disorder, unspecified F98.4 Stereotyped movement disorders
Epilepsy	G40.0 Localization-related (focal)(partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset G40.1 Localization-related (focal)(partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures

	<p>G40.2 Localization-related (focal)(partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures</p> <p>G40.3 Generalized idiopathic epilepsy and epileptic syndromes</p> <p>G40.4 Other generalized epilepsy and epileptic syndromes</p> <p>G40.6 Grand mal seizures, unspecified (with or without petit mal)</p> <p>G40.7 Petit mal, unspecified, without grand mal seizures</p> <p>G40.8 Other epilepsy</p> <p>G40.9 Epilepsy, unspecified</p> <p>G41 Status epilepticus</p>
Vision*	<p>H47.6 Disorders of visual cortex</p> <p>H51.0 Palsy of conjugate gaze</p> <p>H51.1 Convergence insufficiency and excess</p> <p>H51.2 Internuclear ophthalmoplegia</p> <p>H51.8 Other specified disorders of binocular movement</p> <p>H51.9 Disorder of binocular movement, unspecified</p> <p>H52.0 Hypermetropia</p> <p>H52.1 Myopia</p> <p>H52.2 Astigmatism</p> <p>H52.3 Anisometropia and aniseikonia</p> <p>H52.4 Presbyopia</p> <p>H52.5 Disorders of accommodation</p> <p>H52.6 Other disorders of refraction</p> <p>H52.7 Disorder of refraction, unspecified</p> <p>H 53.0 Amblyopia ex anopsia</p> <p>H53.4 Visual field defects</p> <p>H55 Nystagmus and other irregular eye movements</p> <p>H54.0 Blindness, binocular</p> <p>H54.1 Severe visual impairment, binocular</p> <p>H54.2 Moderate visual impairment, binocular</p> <p>H54.4 Blindness, monocularH54.5 Severe visual impairment, monocular</p> <p>H54.6 Moderate visual impairment, monocular</p> <p>H54.9 Unspecified visual impairment (binocular)</p>
Hearing*	<p>H90.3 Sensorineural hearing loss, bilateral</p> <p>H90.4 Sensorineural hearing loss, unilateral with unrestricted hearing on the contralateral side</p> <p>H90.5 Sensorineural hearing loss, unspecified</p> <p>H90.6 Mixed conductive and sensorineural hearing loss, bilateral</p> <p>H90.7 Mixed conductive and sensorineural hearing loss, unilateral with unrestricted hearing on the contralateral side</p> <p>H90.8 Mixed conductive and sensorineural hearing loss, unspecified</p>

		<p>D24 Operations on cochlea</p> <p>D24.1 Implantation of intracochlear prosthesis</p> <p>D24.2 Implantation of extracochlear prosthesis</p> <p>D24.3 Attention to cochlear prosthesis</p> <p>D24.4 Neurectomy of cochlea</p> <p>D24.6 Removal of cochlear prosthesis</p> <p>D24.8 Other specified operations on cochlea</p> <p>D24.9 Unspecified operations on cochlea</p> <p>D13 Attachment of Bone Anchored Hearing Prosthesis</p> <p>D16 Reconstruction of Ossicular Chain</p> <p>D05 Attachment of auricular prosthesis</p> <p>Z453 Adjustment and management of implanted hearing device</p> <p>Z461 Fitting and adjustment of hearing aid</p> <p>Z962 Presence of otological and audiological implants</p> <p>Z974 Presence of external hearing-aid</p>
National Pupil Database	Academic attainment	<p>Did not achieve expected level or the presence of a SEN that precluded assessment at:</p> <p>Early Years Foundation Stage*</p> <p>Phonics assessment</p> <p>Key Stage 1 national assessment*</p> <p>Key Stage 2 national assessment*</p>
	Special educational needs	<p>Presence of EHCP or statement of SEN</p> <p>Attends specialist school</p> <p>Indication of type of need for SEN provision (primary or secondary) irrespective of level of SEN provision (SEN support or EHCP)</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Specific Learning Difficulty*</li> <li><input type="checkbox"/> Moderate Learning Difficulty*</li> <li><input type="checkbox"/> Severe Learning Difficulty*</li> <li><input type="checkbox"/> Profound &amp; Multiple Learning Difficulty*</li> <li><input type="checkbox"/> Behaviour, Emotional &amp; Social Difficulties (up to 2013/14)</li> <li><input type="checkbox"/> Social, emotional, and mental health (from 2014/15)</li> <li><input type="checkbox"/> Speech, Language and Communication Needs*</li> <li><input type="checkbox"/> Hearing Impairment*</li> <li><input type="checkbox"/> Visual Impairment*</li> <li><input type="checkbox"/> Multi-Sensory Impairment*</li> <li><input type="checkbox"/> Physical Disability*</li> <li><input type="checkbox"/> Autistic Spectrum Disorder</li> <li><input type="checkbox"/> Other Difficulty/Disability</li> </ul>