**Children with Disabilities Algorithm (CWDA):**
**A Claims-based Tool for Identifying Children with Disabilities**


**Center of Excellence for Pediatric Quality Measurement**

**Division of General Pediatrics**

**Boston Children's Hospital**


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# CWDA Detailed Specifications

# Children with Disabilities Algorithm (CWDA): Framework

## Definition of Disability

The Children with Disabilities Algorithm (CWDA) is based on the disability concepts and definitions articulated by the World Health Organization (WHO) in its 2001 International Classification of Functioning, Disability, and Health (ICF)[1] and the United Nations (UN) Convention on the Rights of Persons with Disabilities.[2] The ICF is intended to complement the etiological framework provided by ICD-9 codes by classifying functioning and disability as associated with health.[3]

We chose these sources because they represent international state-of-the-art efforts to standardize disability concepts, terms, and definitions. We also chose the ICF because its intent was to bridge disciplines and cultures to create a common language for describing personal and environmental factors that affect persons with disabilities.[3] At the core of these disability frameworks is the notion that disability is the result of an interaction between the features of an individual's "body functions and structures" and environmental factors (social, physical, or attitudinal).[1] The disability concepts and definitions articulated are well-recognized and used in the United States and serve as a basis for developing survey items and conceptualizing data collected from the US Census Bureau and the Centers for Disease Prevention and Control.[4–8]

## What is CWDA?

Current knowledge of health care quality issues for children with disabilities (CWD) is based almost exclusively on pediatric case reports,[9,10] studies of adults with disabilities,[11,12] and descriptions of severely affected children with special health care needs (CSHCN)[13,14] In our estimation, more rigorous studies have been impeded by the lack of an adequate method for identifying CWD. Although CWD can be identified by survey methods, the magnitude of the effort needed to identify less than 10% of the population is usually considered impractical or cost-prohibitive.

CWDA provides a theoretically grounded, scalable, and affordable method for identifying CWD using ICD-9 diagnosis codes. We anticipate that CWDA will vastly increase the rigor and feasibility with which stakeholders will be able to identify CWD for quality assessment and subsequent quality improvement efforts. CWDA will also help researchers expand our current understanding of care quality for CWD beyond the case study, potentially revealing systemic issues and more generalizable solutions. Because stakeholders and investigators can stratify data by disability status to reveal differences in care experiences and quality, CWDA should also enable evaluations of whether CWD receive appropriate differences in care or are at risk for experiencing disparities in quality. Differences can then become the focus of investigations and interventions to reduce and, eventually, eliminate any potential disparities for CWD.

For all steps of the code classification process, we developed rules and decision-making logic to guide consistent assessment of the degree to which ICD-9 codes were likely to indicate CWD. We trained all those involved in the code classification process in the WHO and UN concepts and definitions of disability. We trained our pediatric disability experts to take a population approach to the code classification process. This involved envisioning the features of the population likely to receive an ICD-9 code, imagining 100 children with this code, and determining whether 75 or more of these children would meet our criteria for a disability for at least 12 months. Because functional expectations depend on context, we also established key assumptions that children: lived in an environment or setting that was average for the United States in 2012, had families who possessed a typical capacity for seeking and accessing health care, received treatment that was typically available, and experienced a typical clinical course. When there was a question about the typical functional status of children with particular diagnoses or the proportion of children with a given diagnosis who would likely have disabling levels of impairment, we conducted literature reviews and consulted subspecialists to inform the classification decision.

**Validation**

We assessed the validity of CWDA according to two key perspectives: 1) the parent perspective and 2) physician assessment of patient charts. Both perspectives provide insight into functional impairments, activity limitations, and participation restriction to a greater degree than ICD-9 codes typically specify. The two perspectives were also considered complementary, with the parent perspective better able to provide insight into children's participation restrictions and the physician assessment better able to quantify functional impairments. We evaluated the parent perspective through a survey and the physician assessment through physician chart abstraction.

We compared CWDA ascertainment of CWD status with that of parents based on the single NHIS question, "Do you consider your child to have a disability?" Overall, CWDA ascertainment of CWD status agreed with that of parents 79% of the time, and its sensitivity was 0.75. Overall, CWDA ascertainment of CWD status agreed with that of physician chart abstractors 80% of the time and its sensitivity was 0.98.

We tested CWDA using: 1) two domains from AHRQ's Consumer Assessment of Healthcare Providers and Systems (CAHPS) Clinician and Group Survey and 2) 11 measures from NCQA's Healthcare Effectiveness Data and Information Set (HEDIS). Using CAHPS, we assessed outpatient care experience for CWD at the primary care clinic of a large, freestanding children's hospital. Using HEDIS, we assessed outpatient care quality for Medicaid-insured CWD using 2008 Medicaid Analytic Extract (MAX) data from nine states. CWDA was easy to implement in both instances and with both data sources.

# Children with Disabilities Algorithm (CWDA): Instructions for Use

CWDA is intended for use in claims datasets that contain ICD-9 codes. We recommend using a dataset that has at least a full year of inpatient and outpatient data that can have multiple ICD-9 codes per claim. The SAS program to run CWDA can be found on page 4, followed by a full list of the 669 ICD-9 codes included in CWDA on page 10.

Overall, CWDA has proven to be extremely easy to implement. Users are unlikely to have difficulty implementing CWDA. They may face challenges stemming from the accuracy of ICD-9 data (whether they correctly represent the conditions present) and completeness of ICD-9 data (whether they cover all of children's conditions) when selecting data sources. For example, it would not be appropriate to use CWDA to measure dental care quality for CWD if dental health benefits are not included in the claims data being used.

Users should determine the appropriate timeframe to which they are applying CWDA. For example, if the user is applying CWDA to a specific hospital stay, it is preferable to include data from periods of time before or after the hospital stay (e.g., a full year prior to the hospital stay) to determine CWDA status.

# SAS Code for CWDA

```
********************************************************************************
************************************************************;
* PROGRAM TO DEFINE CHILDREN WITH DISABILITY (CWDA VERSION 3):
  DEFINES PATIENTS WITH CWDA, AND OUTPUTS A PATIENT LEVEL DATASET.
* 'DEFINE_CWDA.sas'

    Programmer:     Jisun Jang
                    Boston Children's Hospital
                 Center of Excellence for Pediatric Quality Measurement

                         Division of General Pediatrics


    Date:            AUGUST 21, 2014

*  How to run this program::

    1) Insert a path where the cleaned Inpatient and Outpatient dataset is saved in
LIBNAME IN (For example, C:\Users\Desktop).
    2) Insert a path where the output dataset will be saved in LIBNAME OUT (For example,
C:\Users\Desktop).
    3) Insert the name of cleaned Inpatient and Outpatient dataset (For example,
OTIP2008_AGE1_18).
    4) Insert the name of output dataset (For example, patient_CWDA).
    5) Insert the variable name for patient ID (For example, uniqueid).
    6) Insert the variable name for claims ID (For example, claim_id).
    7) Insert the number of ICD9 diagnosis fields (For example, 9).
    8) Insert the prefix of the diagnosis variable (For example, dx).

********************************************************************************
************************************************************;

options compress=yes;
 /*1*/ libname IN "C:\Users\Desktop";
 /*2*/ libname OUT "C:\Users\Desktop";
 /*3*/ %let indata=OTIP2008_AGE1_18;
 /*4*/ %let outdata=patient_CWDA;
 /*5*/ %let sid=uniqueid;
 /*6*/ %let claimid=claim_id;
 /*7*/ %let icdnum=9;
 /*8*/ %let icdvar=dx;


proc
 data claims(keep=&sid &claimid cwda3_gt75);
    set claims(keep=&sid &claimid &icdvar.1-&icdvar.&icdnum);
    by &sid &claimid;

    retain CWDA3_gt75;
  if first.&claimid then CWDA3_gt75=0;

    array   &icdvar(&icdnum) &icdvar.1-&icdvar.&icdnum;

    do i = 1 to &icdnum;
        if &icdvar{i} in ("0460", "04611", "04619", "0462", "0463", "04671", "04672",
"04679", "0468", "0469", "0700", "07020", "07021", "07022", "07023", "07041", "07042",
"07043", "07044", "07049", "0706", "07071", "09382", "09483", "09484", "138", "1910",
```

"1911", "1912", "1913", "1916", "1917", "1919", "1921", "1943", "1946", "1983", "2594",
"2775", "29010", "29011", "29012", "29013", "29040", "29041", "29042", "29043", "2912",
"29282", "29410", "29411", "29420", "29421", "2948", "29500", "29501", "29502", "29503",
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"80005", "80015", "80025", "80035", "80045", "80055", "80064", "80065", "80075", "80084",
"80085", "80094", "80095", "80105", "80114", "80115", "80125", "80134", "80135", "80144",
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"80314", "80315", "80325", "80334", "80335", "80344", "80345", "80355", "80364", "80365",
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"8068", "8069", "8504", "85105", "85115", "85125", "85135", "85144", "85145", "85154",
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"85305", "85314", "85315", "85405", "85415", "87264", "87274", "8876", "8877", "8962",
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"94855", "94865", "94866", "94874", "94875", "94876", "94877", "94884", "94885", "94886",
"94887", "94888", "94893", "94894", "94895", "94896", "94897", "94898", "94899", "9501",
"9503", "95200", "95201", "95202", "95203", "95204", "95205", "95206", "95207", "95208",
"95209", "95210", "95211", "95212", "95213", "95214", "95215", "95216", "95217", "95218",

```
"95219", "9522", "9528", "9941", "99555", "99687", "99702", "V110", "V1522", "V4284",
"V4321", "V4322", "V4381", "V440", "V441", "V4452", "V4512", "V4572", "V4575", "V4611",
"V4612", "V4614", "V462", "V463", "V468", "V4967", "V4976", "V4977", "V4983", "V4985",
"V521", "V5302", "V532", "V550", "V551", "V667", "V8821", "V8822")
        then CWDA3_gt75=1;
    end;

    if last.&claimid then output;
    run;


proc sort data=claims;
    by &sid;
data out.&outdata(keep=&sid cwda);
    set claims;
    by &sid;

    retain cwda3_gt75_sum;

      if first.&sid then cwda3_gt75_sum = 0;
    if cwda3_gt75= 1 then cwda3_gt75_sum + 1;

    cwda=(CWDA3_gt75_sum>=1);

    if last.&sid then output;

    label cwda="CHILDREN WITH DISABILITY ";
    run;
```

# List of CWDA ICD-9 Codes

| | |
|---|---|
| **1. INFECTIOUS AND PARASITIC DISEASES (001 139)** | |
| **Poliomyelitis And Other Non-Arthropod-Borne Viral Diseases Of Central Nervous System (045-049)** | |
| 0460 | Kuru |
| 04611 | Varnt Creutzfeldt-Jakob |
| 04619 | Creutzfldt-Jakob NEC/NOS |
| 0462 | Subac scleros panenceph |
| 0463 | Prog multifoc leukoencep |
| 04671 | Gerstmn-Straus-Schnk syn |
| 04672 | Fatal familial insomnia |
| 04679 | Prion dis of CNS NEC/NOS |
| 0468 | Cns slow virus infec NEC |
| 0469 | Cns slow virus infec NOS |
| **Other Diseases Due To Viruses And Chlamydiae (070-079)** | |
| 0700 | Hepatitis A with coma |
| 07020 | Hpt B acte coma wo dlta |
| 07021 | Hpt B acte coma w dlta |
| 07022 | Hpt B chrn coma wo dlta |
| 07023 | Hpt B chrn coma w dlta |
| 07041 | Hpt C acute w hepat Coma |
| 07042 | Hpt dlt wo b w hpt coma |
| 07043 | Hpt E w hepat Coma |
| 07044 | Chrnc hpt C w hepat Coma |
| 07049 | Oth vrl hepat w hpt coma |
| 0706 | Viral hepat NOS w coma |
| 07071 | Hpt C w hepatic coma NOS |
| **Syphilis And Other Venereal Diseases (090-099)** | |
| 09382 | Syphilitic myocarditis |
| 09483 | Syph dissem retinitis |
| 09484 | Syphilitic optic atrophy |
| **Late Effects Of Infectious And Parasitic Diseases (137-139)** | |
| 138 | Late effect acute polio |
| **2. NEOPLASMS (140 239)** | |
| **Malignant Neoplasm Of Other And Unspecified Sites (190-199)** | |
| 1910 | Malign neopl cerebrum |
| 1911 | Malig neo frontal lobe |
| 1912 | Mal neo temporal lobe |
| 1913 | Mal neo parietal lobe |

| | |
|---|---|
| 1916 | Mal neo cerebellum NOS |
| 1917 | Mal neo brain stem |
| 1919 | Malig neo brain NOS |
| 1921 | Mal neo cerebral mening |
| 1943 | Malig neo pituitary |
| 1946 | Mal neo paraganglia NEC |
| 1983 | Sec mal neo brain/spine |
| **3. ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES, AND IMMUNITY DISORDERS (240 279)** | |
| **Diseases Of Other Endocrine Glands (249-259)** | |
| 2594 | Dwarfism NEC |
| **Other Metabolic Disorders And Immunity Disorders (270-279)** | |
| 2775 | Mucopolysaccharidosis |
| **5. MENTAL DISORDERS (290 319)** | |
| **Organic Psychotic Conditions (290-294)** | |
| 29010 | Presenile dementia |
| 29011 | Presenile delirium |
| 29012 | Presenile delusion |
| 29013 | Presenile depression |
| 29040 | Vascular dementia,uncomp |
| 29041 | Vasc dementia w delirium |
| 29042 | Vasc dementia w delusion |
| 29043 | Vasc dementia w depressn |
| 2912 | Alcohol persist dementia |
| 29282 | Drug persisting dementia |
| 29410 | Dementia w/o behav dist |
| 29411 | Dementia w behavior dist |
| 29420 | Demen NOS w/o behv dstrb |
| 29421 | Demen NOS w behav distrb |
| 2948 | Mental disor NEC oth dis |
| **Other Psychoses (295-299)** | |
| 29500 | Simpl schizophren-unspec |
| 29501 | Simpl schizophren-subchr |
| 29502 | Simple schizophren-chr |
| 29503 | Simp schiz-subchr/exacer |
| 29504 | Simpl schizo-chr/exacerb |
| 29505 | Simpl schizophren-remiss |
| 29510 | Hebephrenia-unspec |
| 29511 | Hebephrenia-subchronic |
| 29512 | Hebephrenia-chronic |
| 29513 | Hebephren- |

| | |
|---|---|
| | subchr/exacerb |
| 29514 | Hebephrenia-chr/exacerb |
| 29515 | Hebephrenia-remission |
| 29520 | Catatonia-unspec |
| 29521 | Catatonia-subchronic |
| 29522 | Catatonia-chronic |
| 29523 | Catatonia-subchr/exacerb |
| 29524 | Catatonia-chr/exacerb |
| 29525 | Catatonia-remission |
| 29530 | Paranoid schizo-unspec |
| 29531 | Paranoid schizo-subchr |
| 29532 | Paranoid schizo-chronic |
| 29533 | Paran schizo-subchr/exac |
| 29534 | Paran schizo-chr/exacerb |
| 29535 | Paranoid schizo-remiss |
| 29542 | Schizophren dis-chronic |
| 29544 | Schizophr dis-chr/exacer |
| 29550 | Latent schizophren-unsp |
| 29551 | Lat schizophren-subchr |
| 29552 | Latent schizophren-chr |
| 29553 | Lat schizo-subchr/exacer |
| 29554 | Latent schizo-chr/exacer |
| 29555 | Lat schizophren-remiss |
| 29560 | Schizophr dis resid NOS |
| 29561 | Schizoph dis resid-subch |
| 29562 | Schizophr dis resid-chr |
| 29563 | Schizo resid subchr/exac |
| 29564 | Schizoph resid-chro/exac |
| 29565 | Schizoph dis resid-remis |
| 29570 | Schizoaffective dis NOS |
| 29571 | Schizoaffectv dis-subchr |
| 29572 | Schizoaffective dis-chr |
| 29573 | Schizoaff dis-subch/exac |
| 29574 | Schizoafftv dis-chr/exac |
| 29575 | Schizoaffectve dis-remis |
| 29580 | Schizophrenia NEC-unspec |
| 29581 | Schizophrenia NEC-subchr |
| 29582 | Schizophrenia NEC-chr |
| 29583 | Schizo NEC-subchr/exacer |
| 29584 | Schizo NEC-chr/exacerb |
| 29585 | Schizophrenia NEC-remiss |
| 29590 | Schizophrenia NOS-unspec |
| 29591 | Schizophrenia NOS-subchr |
| 29592 | Schizophrenia NOS-chr |
| 29593 | Schizo NOS- |

| | |
|---|---|
| | subchr/exacer |
| 29594 | Schizo NOS-chr/exacerb |
| 29595 | Schizophrenia NOS-remiss |
| 29614 | Recur manic-sev w psycho |
| 29900 | Autistic disord-current |
| 29901 | Autistic disord-residual |
| 29910 | Childhd disintegr-active |
| 29911 | Childhd disintegr-resid |
| 29980 | Pervasv dev dis-cur NEC |
| 29981 | Pervasv dev dis-res NEC |
| 29990 | Pervasv dev dis-cur NOS |
| 29991 | Pervasv dev dis-res NOS |
| **Neurotic Disorders, Personality Disorders, And Other Nonpsychotic Mental Disorders (300-316)** | |
| 3022 | Pedophilia |
| 30400 | Opioid dependence-unspec |
| 30401 | Opioid dependence-contin |
| 30402 | Opioid dependence-episod |
| 30410 | Sed,hyp,anxiolyt dep-NOS |
| 30411 | Sed,hyp,anxiolyt dep-con |
| 30412 | Sed,hyp,anxiolyt dep-epi |
| 30420 | Cocaine depend-unspec |
| 30421 | Cocaine depend-contin |
| 30422 | Cocaine depend-episodic |
| 30440 | Amphetamin depend-unspec |
| 30441 | Amphetamin depend-contin |
| 30442 | Amphetamin depend-episod |
| 30450 | Hallucinogen dep-unspec |
| 30451 | Hallucinogen dep-contin |
| 30452 | Hallucinogen dep-episod |
| 30460 | Drug depend NEC-unspec |
| 30461 | Drug depend NEC-contin |
| 30462 | Drug depend NEC-episodic |
| 30470 | Opioid/other dep-unspec |
| 30471 | Opioid/other dep-contin |
| 30472 | Opioid/other dep-episod |
| 30480 | Comb drug dep NEC-unspec |
| 30481 | Comb drug dep NEC-contin |
| 30482 | Comb drug dep NEC-episod |
| 30490 | Drug depend NOS-unspec |
| 30491 | Drug depend NOS-contin |
| 30492 | Drug depend NOS-episodic |

| | |
|---|---|
| 31203 | Unsocial aggress-severe |
| 31230 | Impulse control dis NOS |
| 31233 | Pyromania |
| 31323 | Selective mutism |
| 3141 | Hyperkinet w devel delay |
| 31500 | Reading disorder NOS |
| 31501 | Alexia |
| 31502 | Developmental dyslexia |
| 3151 | Mathematics disorder |
| 31532 | Recp-expres language dis |
| 31534 | Speech del d/t hear loss |
| 31539 | Speech/language dis NEC |
| 3155 | Mixed development dis |
| **Intellectual Disabilities (317-319)** | |
| 317 | Mild intellect disabilty |
| 3180 | Mod intellect disability |
| 3181 | Sev intellect disability |
| 3182 | Profnd intellct disablty |
| **6. DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS (320 389)** | |
| **Inflammatory Diseases Of The Central Nervous System (320-327)** | |
| 3222 | Chronic meningitis |
| **Hereditary And Degenerative Diseases Of The Central Nervous System (330-337)** | |
| 3300 | Leukodystrophy |
| 3301 | Cerebral lipidoses |
| 3302 | Cereb degen in lipidosis |
| 3303 | Cerb deg chld in oth dis |
| 3308 | Cereb degen in child NEC |
| 3309 | Cereb degen in child NOS |
| 3310 | Alzheimer's disease |
| 33111 | Pick's disease |
| 33119 | Frontotemp dementia NEC |
| 3316 | Corticobasal degneration |
| 3317 | Cereb degen in oth dis |
| 33182 | Dementia w Lewy bodies |
| 33189 | Cereb degeneration NEC |
| 3319 | Cereb degeneration NOS |
| 3320 | Paralysis agitans |
| 3330 | Degen basal ganglia NEC |
| 3336 | Genetic torsion dystonia |
| 33371 | Athetoid cerebral palsy |
| 33391 | Stiff-man syndrome |
| 3340 | Friedreich's ataxia |
| 3341 | Hered spastic paraplegia |
| 3342 | Primary cerebellar degen |
| 3343 | Cerebellar ataxia NEC |
| 3344 | Cerebel atax in oth dis |

| | |
|---|---|
| 3348 | Spinocerebellar dis NEC |
| 3349 | Spinocerebellar dis NOS |
| 3350 | Werdnig-hoffmann disease |
| 33510 | Spinal muscl atrophy NOS |
| 33511 | Kugelberg-welander dis |
| 33519 | Spinal muscl atrophy NEC |
| 33520 | Amyotrophic sclerosis |
| 33521 | Prog muscular atrophy |
| 33522 | Progressive bulbar palsy |
| 33523 | Pseudobulbar palsy |
| 33524 | Prim lateral sclerosis |
| 3362 | Comb deg cord in oth dis |
| **Other Disorders Of The Central Nervous System (340-349)** | |
| 340 | Multiple sclerosis |
| 3411 | Schilder's disease |
| 34200 | Flccd hmiplga unspf side |
| 34201 | Flccd hmiplga domnt side |
| 34202 | Flccd hmiplg nondmnt sde |
| 34210 | Spstc hmiplga unspf side |
| 34211 | Spstc hmiplga domnt side |
| 34212 | Spstc hmiplg nondmnt sde |
| 34280 | Ot sp hmiplga unspf side |
| 34281 | Ot sp hmiplga domnt side |
| 34282 | Ot sp hmiplg nondmnt sde |
| 34290 | Unsp hemiplga unspf side |
| 34291 | Unsp hemiplga domnt side |
| 34292 | Unsp hmiplga nondmnt sde |
| 3430 | Congenital diplegia |
| 3431 | Congenital hemiplegia |
| 3432 | Congenital quadriplegia |
| 3434 | Infantile hemiplegia |
| 3438 | Cerebral palsy NEC |
| 3439 | Cerebral palsy NOS |
| 34400 | Quadriplegia, unspecifd |
| 34401 | Quadrplg c1-c4, complete |
| 34402 | Quadrplg c1-c4, incomplt |
| 34403 | Quadrplg c5-c7, complete |
| 34404 | Quadrplg c5-c7, incomplt |
| 34409 | Other quadriplegia |
| 3441 | Paraplegia NOS |
| 3442 | Diplegia of upper limbs |
| 34481 | Locked-in state |
| 34489 | Oth spcf paralytic synd |
| 3449 | Paralysis NOS |
| 34501 | Gen nonconv ep w intr ep |
| 34511 | Gen cnv epil w intr epil |
| 34541 | Psymotr epil w intr epil |
| 34561 | Inf spasm w intract epil |
| 34571 | Epil par cont w intr epi |
| 34581 | Epilepsy NEC w intr epil |

| | |
|---|---|
| 34591 | Epilepsy NOS w intr epil |
| 3481 | Anoxic brain damage |
| 34882 | Brain death |

**Disorders Of The Peripheral Nervous System (350-359)**

| | |
|---|---|
| 3560 | Hered periph neuropathy |
| 3563 | Refsum's disease |
| 3564 | Idio prog polyneuropathy |
| 3590 | Cong hered musc dystrphy |
| 3591 | Hered prog musc dystrphy |
| 35921 | Myotonic musclr dystrphy |
| 35923 | Myotonic chondrodystrphy |
| 35971 | Inclusion body myositis |

**Disorders Of The Eye And Adnexa (360-379)**

| | |
|---|---|
| 36081 | Luxation of globe |
| 36221 | Retrolental fibroplasia |
| 36226 | Retinoph prematr.stage 4 |
| 36227 | Retinoph prematr,stage 5 |
| 36271 | Ret dystrph in lipidoses |
| 36272 | Ret dystrph in syst dis |
| 36322 | Harada's disease |
| 36355 | Choroideremia |
| 36424 | Vogt-koyanagi syndrome |
| 36510 | Open-angle glaucoma NOS |
| 36511 | Prim open angle glaucoma |
| 36515 | Residual opn ang glaucma |
| 36524 | Residual angl-clos glauc |
| 36541 | Glauc w chamb angle anom |
| 36542 | Glaucoma w iris anomaly |
| 36543 | Glauc w ant seg anom NEC |
| 36573 | Severe stage glaucoma |
| 36633 | Cataract w neovasculizat |
| 36634 | Cataract in degen dis |
| 36900 | Both eyes blind-who def |
| 36901 | Tot impairment-both eyes |
| 36903 | One eye-near tot/oth-tot |
| 36904 | Near-tot impair-both eye |
| 36906 | One eye-profound/oth-tot |
| 36907 | One eye-prfnd/oth-nr tot |
| 36908 | Profound impair both eye |
| 36911 | 1 eye-sev/oth-blind NOS |
| 36912 | One eye-severe/oth-total |
| 36913 | One eye-sev/oth-near tot |
| 36914 | One eye-sev/oth-prfnd |
| 36915 | One eye-mod/oth-blind |
| 36916 | One eye-moderate/oth-tot |
| 36917 | One eye-mod/oth-near tot |
| 36918 | One eye-mod/oth-profound |

| | |
|---|---|
| 36922 | Severe impair-both eyes |
| 36924 | One eye-moderate/oth-sev |
| 3693 | Blindness NOS, both eyes |
| 3694 | Legal blindness-usa def |
| 37711 | Primary optic atrophy |
| 37713 | Optic atrph w retin dyst |
| 37714 | Cupping of optic disc |
| 37771 | Vis cortx dis w neoplasm |
| 37772 | Vis cortx dis w vasc dis |
| 37773 | Vis cortex dis w inflam |
| 37775 | Cortical blindness |
| 37856 | Total ophthalmoplegia |
| 37953 | Visual deprivatn nystagm |

**Diseases Of The Ear And Mastoid Process (380-389)**

| | |
|---|---|
| 38843 | Impairm auditory discrim |
| 38904 | Cond hear loss inner ear |
| 38910 | Sensorneur hear loss NOS |
| 38911 | Sensry hearng loss,bilat |
| 38912 | Neural hearng loss,bilat |
| 38913 | Neural hear loss, unilat |
| 38914 | Central hearing loss |
| 38915 | Sensorneur hear loss uni |
| 38916 | Sensoneur hear loss asym |
| 38918 | Sensonrl hear loss,bilat |
| 38920 | Mixed hearing loss NOS |
| 38922 | Mixed hearing loss,bilat |
| 3897 | Deaf, nonspeaking NEC |

**7. DISEASES OF THE CIRCULATORY SYSTEM (390 459)**

**Hypertensive Disease (401-405)**

| | |
|---|---|
| 40301 | Mal hyp kid w cr kid V |
| 40311 | Ben hyp kid w cr kid V |
| 40391 | Hyp kid NOS w cr kid V |
| 40401 | Mal hyp ht/kd I-IV w hf |
| 40402 | Mal hy ht/kd st V w/o hf |
| 40403 | Mal hyp ht/kd stg V w hf |
| 40411 | Ben hyp ht/kd I-IV w hf |
| 40412 | Ben hy ht/kd st V w/o hf |
| 40413 | Ben hyp ht/kd stg V w hf |
| 40491 | Hyp ht/kd NOS I-IV w hf |
| 40492 | Hy ht/kd NOS st V w/o hf |
| 40493 | Hyp ht/kd NOS st V w hf |

**Diseases Of Pulmonary Circulation (415-417)**

| | |
|---|---|
| 4150 | Acute cor pulmonale |
| 4160 | Prim pulm hypertension |
| 4161 | Kyphoscoliotic heart dis |
| 4168 | Chr pulmon heart dis NEC |
| 4169 | Chr pulmon heart dis NOS |
| 4179 | Pulmon circulat dis NOS |

**Other Forms Of Heart Disease (420-429)**

| | |
|---|---|
| 4253 | Endocard fibroelastosis |
| 42823 | Ac on chr syst hrt fail |
| 42833 | Ac on chr diast hrt fail |
| 42843 | Ac/chr syst/dia hrt fail |

**Cerebrovascular Disease (430-438)**

| | |
|---|---|
| 43301 | Ocl bslr art w infrct |
| 43311 | Ocl crtd art w infrct |
| 43321 | Ocl vrtb art w infrct |
| 43331 | Ocl mlt bi art w infrct |
| 43381 | Ocl spcf art w infrct |
| 43391 | Ocl art NOS w infrct |
| 43401 | Crbl thrmbs w infrct |
| 43411 | Crbl emblsm w infrct |
| 43491 | Crbl art ocl NOS w infrc |
| 4380 | Late ef CV dis-cognf def |
| 43810 | Late ef-spch/lng def NOS |
| 43811 | Late eff CV dis-aphasia |
| 43812 | Late eff CV dis-dysphsia |
| 43813 | Late eff CV-dysarthria |
| 43814 | Late eff CV-fluency dis |
| 43819 | Late ef-spch/lang df NEC |
| 43820 | Late ef-hemplga side NOS |
| 43821 | Late ef-hemplga dom side |
| 43822 | Late ef-hemiplga non-dom |
| 43830 | Late ef-mplga up lmb NOS |
| 43831 | Late ef-mplga up lmb dom |
| 43851 | Lt ef oth paral dom side |
| 43852 | Lt ef oth parals non-dom |
| 43853 | Lt ef oth parals-bilat |
| 4387 | Disturbances of vision |
| 43881 | Late eff CV dis-apraxia |
| 43884 | Ataxia |
| 43885 | Vertigo |

**8. DISEASES OF THE RESPIRATORY SYSTEM (460 519)**

**Other Diseases Of Upper Respiratory Tract (470-478)**

| | |
|---|---|
| 47834 | Vocal paral bilat total |
| 47874 | Stenosis of larynx |

**Other Diseases Of Respiratory System (510-519)**

| | |
|---|---|
| 51664 | Alv cap dysp w vn misaln |
| 51883 | Chronic respiratory fail |
| 51884 | Acute & chronc resp fail |
| 51900 | Tracheostomy comp NOS |
| 51901 | Tracheostomy infection |
| 51902 | Tracheostomy - mech comp |
| 51909 | Tracheostomy comp NEC |

## 9. DISEASES OF THE DIGESTIVE SYSTEM (520 579)

### Diseases Of Oral Cavity, Salivary Glands, And Jaws (520-529)

| | |
|---|---|
| 52523 | Atrophy mandible-severe |
| 52526 | Atrophy maxilla-severe |

### Diseases Of Esophagus, Stomach, And Duodenum (530-539)

| | |
|---|---|
| 53640 | Gastrostomy comp NOS |
| 53641 | Gastrostomy infection |
| 53642 | Gastrostomy comp - mech |
| 53649 | Gastrostomy comp NEC |

### Hernia Of Abdominal Cavity (550-553)

| | |
|---|---|
| 5513 | Diaphragm hernia w gangr |

### Other Diseases Of Intestines And Peritoneum (560-569)

| | |
|---|---|
| 56481 | Neurogenic bowel |

## 10. DISEASES OF THE GENITOURINARY SYSTEM (580 629)

### Nephritis, Nephrotic Syndrome, And Nephrosis (580-589)

| | |
|---|---|
| 5856 | End stage renal disease |

### Other Diseases Of Urinary System (590-599)

| | |
|---|---|
| 5964 | Atony of bladder |
| 59651 | Hypertonicity of bladder |
| 59653 | Paralysis of bladder |
| 59654 | Neurogenic bladder NOS |
| 59655 | Detrusr sphinc dyssnrgia |

## 13. DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE (710 739)

### Rheumatism, Excluding The Back (725-729)

| | |
|---|---|
| 72811 | Prog myositis ossificans |

### Osteopathies, Chondropathies, And Acquired Musculoskeletal Deformities (730-739)

| | |
|---|---|
| 73732 | Progr idiopath scoliosis |

## 14. CONGENITAL ANOMALIES (740 759)

### Anencephalus and similar anomalies (740)

| | |
|---|---|
| 7400 | Anencephalus |
| 7401 | Craniorachischisis |
| 7402 | Iniencephaly |

### Spina bifida (741)

| | |
|---|---|
| 74100 | Spin bif w hydroceph NOS |
| 74101 | Spin bif w hydrceph-cerv |
| 74102 | Spin bif w hydrceph-dors |
| 74103 | Spin bif w hydrceph-lumb |
| 74190 | Spina bifida |
| 74191 | Spina bifida-cerv |
| 74192 | Spina bifida-dorsal |
| 74193 | Spina bifida-lumbar |

### Other congenital anomalies of nervous system (742)

| | |
|---|---|
| 7423 | Congenital hydrocephalus |
| 7424 | Brain anomaly NEC |
| 74251 | Diastematomyelia |
| 74259 | Spinal cord anomaly NEC |
| 7428 | Nervous system anom NEC |

### Congenital anomalies of eye (743)

| | |
|---|---|
| 74300 | Clinic anophthalmos NOS |
| 74306 | Cryptophthalmos |
| 74312 | Microphth w oth eye anom |
| 74320 | Buphthalmos NOS |
| 74321 | Simple buphthalmos |
| 74322 | Buphthal w oth eye anom |
| 74342 | Cong cornea opac aff vis |
| 74345 | Aniridia |
| 74348 | Mult anom anter seg-eye |

### Congenital anomalies of ear face and neck (744)

| | |
|---|---|
| 74400 | Ear anom NOS/impair hear |
| 74402 | Ex ear anm NEC-impr hear |
| 74405 | Anomalies of inner ear |
| 74409 | Ear anom NEC/impair hear |

### Other congenital anomalies of heart (746)

| | |
|---|---|
| 7467 | Hypoplas left heart synd |

### Other congenital anomalies of upper alimentary tract (750)

| | |
|---|---|
| 75011 | Aglossia |

### Congenital anomalies of urinary system (753)

| | |
|---|---|
| 7535 | Bladder exstrophy |

### Certain congenital musculoskeletal deformities (754)

| | |
|---|---|
| 7542 | Cong postural deformity |

### Other congenital anomalies of limbs (755)

| | |
|---|---|
| 75533 | Comb longitudin def leg |
| 75534 | Longitudinal defic femur |

### Other congenital musculoskeletal anomalies (756)

| | |
|---|---|
| 75651 | Osteogenesis imperfecta |

### Chromosomal anomalies (758)

| | |
|---|---|
| 7580 | Down's syndrome |
| 7581 | Patau's syndrome |
| 7582 | Edwards' syndrome |
| 75831 | Cri-du-chat syndrome |
| 75832 | Velo-cardio-facial synd |
| 75833 | Microdeletions NEC |
| 75839 | Autosomal deletions NEC |
| 7585 | Autosomal anomalies NEC |

### Other and unspecified congenital anomalies (759)

| | |
|---|---|
| 7594 | Conjoined twins |
| 75981 | Prader-willi syndrome |
| 75983 | Fragile x syndrome |

## 15. CERTAIN CONDITIONS ORIGINATING IN THE PERINATAL PERIOD (760 779)

### Other Conditions Originating In The Perinatal Period (764-779)

| | |
|---|---|
| 7674 | Spinal cord inj at birth |
| 7685 | Severe birth asphyxia |
| 76870 | Hypoxc-ischem enceph NOS |
| 76872 | Mod hypox-ischem enceph |
| 76873 | Sev hypox-ischem enceph |
| 7710 | Congenital rubella |
| 77213 | NB intravn hem,grade iii |
| 77214 | NB intraven hem,grade iv |
| 7734 | NB kernicterus:isoimmun |
| 7747 | NB kernicterus |

## 16. SYMPTOMS, SIGNS, AND ILL DEFINED CONDITIONS (780 799)

### Symptoms (780-789)

| | |
|---|---|
| 78003 | Persistent vegtv state |
| 78072 | Functional quadriplegia |
| 7837 | Failure to thrive-adult |
| 7843 | Aphasia |
| 78441 | Aphonia |
| 78451 | Dysarthria |
| 78461 | Alexia and dyslexia |

### Ill-Defined And Unknown Causes Of Morbidity And Mortality (797-799)

| | |
|---|---|
| 79952 | Cog communicate deficit |
| 79954 | Psychomotor deficit |

## 17. INJURY AND POISONING (800 999)

### Fracture Of Skull (800-804)

| | |
|---|---|
| 80005 | Cl skul vlt fx-deep coma |
| 80015 | Cl skul vlt fx-deep coma |
| 80025 | Cl skul vlt fx-deep coma |
| 80035 | Cl skul vlt fx-deep coma |

| Code | Description |
|------|-------------|
| 80045 | Cl skul vlt fx-deep coma |
| 80055 | Opn skl vlt fx-deep coma |
| 80064 | Opn skl vlt fx-proln com |
| 80065 | Opn skl vlt fx-deep coma |
| 80075 | Opn skl vlt fx-deep coma |
| 80084 | Opn skl vlt fx-proln com |
| 80085 | Opn skl vlt fx-deep coma |
| 80094 | Opn skl vlt fx-proln com |
| 80095 | Op skul vlt fx-deep coma |
| 80105 | Cl skl base fx-deep coma |
| 80114 | Cl skl base fx-prol coma |
| 80115 | Cl skl base fx-deep coma |
| 80125 | Cl skl base fx-deep coma |
| 80134 | Cl skl base fx-prol coma |
| 80135 | Cl skl base fx-deep coma |
| 80144 | Cl skl base fx-prol coma |
| 80145 | Cl skl base fx-deep coma |
| 80155 | Op skl base fx-deep coma |
| 80164 | Op skl base fx-prol coma |
| 80165 | Op skl base fx-deep coma |
| 80175 | Op skl base fx-deep coma |
| 80184 | Op skl base fx-prol coma |
| 80185 | Op skl base fx-deep coma |
| 80194 | Op skl base fx-prol coma |
| 80195 | Op skl base fx-deep coma |
| 80305 | Cl skul fx NEC-deep coma |
| 80314 | Cl skl fx NEC-proln coma |
| 80315 | Cl skul fx NEC-deep coma |
| 80325 | Cl skul fx NEC-deep coma |
| 80334 | Cl skl fx NEC-proln coma |
| 80335 | Cl skul fx NEC-deep coma |
| 80344 | Cl skl fx NEC-proln coma |
| 80345 | Cl skul fx NEC-deep coma |
| 80355 | Opn skl fx NEC-deep coma |
| 80364 | Opn skl fx NEC-proln com |
| 80365 | Opn skl fx NEC-deep coma |
| 80375 | Opn skl fx NEC-deep coma |
| 80384 | Opn skl fx NEC-prol coma |
| 80385 | Opn skl fx NEC-deep coma |
| 80394 | Opn skl fx NEC-prol coma |
| 80395 | Opn skl fx NEC-deep coma |
| 80405 | Cl skul/oth fx-deep coma |
| 80414 | Cl skl/oth fx-proln coma |
| 80415 | Cl skul/oth fx-deep coma |
| 80425 | Cl skul/oth fx-deep coma |
| 80434 | Cl skl/oth fx-proln coma |
| 80435 | Cl skul/oth fx-deep coma |
| 80444 | Cl skl/oth fx-proln coma |
| 80445 | Cl skul/oth fx-deep coma |
| 80454 | Opn skl/oth fx-prol coma |
| 80455 | Opn skl/oth fx-deep coma |
| 80464 | Opn skl/oth fx-prol coma |
| 80465 | Opn skl/oth fx-deep coma |
| 80475 | Opn skl/oth fx-deep coma |
| 80484 | Opn skl/oth fx-prol coma |
| 80485 | Opn skl/oth fx-deep coma |
| 80494 | Opn skl/oth fx-prol coma |
| 80495 | Opn skl/oth fx-deep coma |

## Fracture Of Spine And Trunk (805-809)

| Code | Description |
|------|-------------|
| 80601 | C1-c4 fx-cl/com cord les |
| 80604 | C1-c4 fx-cl/cord inj NEC |
| 80605 | C5-c7 fx-cl/cord inj NOS |
| 80606 | C5-c7 fx-cl/com cord les |
| 80609 | C5-c7 fx-cl/cord inj NEC |
| 80610 | C1-c4 fx-op/cord inj NOS |
| 80611 | C1-c4 fx-op/com cord les |
| 80614 | C1-c4 fx-op/cord inj NEC |
| 80615 | C5-c7 fx-op/cord inj NOS |
| 80616 | C5-c7 fx-op/com cord les |
| 80619 | C5-c7 fx-op/cord inj NEC |
| 80620 | T1-t6 fx-cl/cord inj NOS |
| 80621 | T1-t6 fx-cl/com cord les |
| 80624 | T1-t6 fx-cl/cord inj NEC |
| 80625 | T7-t12 fx-cl/crd inj NOS |
| 80626 | T7-t12 fx-cl/com crd les |
| 80629 | T7-t12 fx-cl/crd inj NEC |
| 80630 | T1-t6 fx-op/cord inj NOS |
| 80631 | T1-t6 fx-op/com cord les |
| 80634 | T1-t6 fx-op/cord inj NEC |
| 80635 | T7-t12 fx-op/crd inj NOS |
| 80636 | T7-t12 fx-op/com crd les |
| 80639 | T7-t12 fx-op/crd inj NEC |
| 8064 | Cl lumbar fx w cord inj |
| 8065 | Opn lumbar fx w cord inj |
| 80661 | Fx sacr-cl/cauda equ les |
| 80671 | Fx sacr-op/cauda equ les |
| 80679 | Fx sacrum-op/crd inj NEC |
| 8068 | Vert fx NOS-cl w crd inj |
| 8069 | Vert fx NOS-op w crd inj |

## Intracranial Injury, Excluding Those With Skull Fracture (850-854)

| Code | Description |
|------|-------------|
| 8504 | Concussion-deep coma |
| 85105 | Cortex contus-deep coma |
| 85115 | Opn cort contu-deep coma |
| 85125 | Cortex lacerat-deep coma |
| 85135 | Opn cortex lac-deep coma |
| 85144 | Cerebel contus-prol coma |
| 85145 | Cerebel contus-deep coma |

| Code | Description |
|------|-------------|
| 85154 | Opn cerebe cont-prol com |
| 85155 | Opn cerebe cont-deep com |
| 85164 | Cerebel lacer-proln coma |
| 85165 | Cerebell lacer-deep coma |
| 85174 | Opn cerebe lac-prol coma |
| 85175 | Opn cerebe lac-deep coma |
| 85184 | Brain lac NEC-proln coma |
| 85185 | Brain lac NEC-deep coma |
| 85194 | Opn brain lac-proln coma |
| 85195 | Open brain lac-deep coma |
| 85205 | Subarach hem-deep coma |
| 85215 | Op subarach hem-deep com |
| 85224 | Subdural hem-prolng coma |
| 85225 | Subdural hem-deep coma |
| 85234 | Opn subdur hem-prol coma |
| 85235 | Opn subdur hem-deep coma |
| 85244 | Extradur hem-proln coma |
| 85245 | Extradural hem-deep coma |
| 85254 | Extradur hem-proln coma |
| 85255 | Extradur hem-deep coma |
| 85304 | Brain hem NEC-proln coma |
| 85305 | Brain hem NEC-deep coma |
| 85314 | Brain hem opn-proln coma |
| 85315 | Brain hem open-deep coma |
| 85405 | Brain inj NEC-deep coma |
| 85415 | Opn brain inj-deep coma |

## Open Wound Of Head, Neck, And Trunk (870-879)

| Code | Description |
|------|-------------|
| 87264 | Open wound of cochlea |
| 87274 | Open wound cochlea-compl |

## Open Wound Of Upper Limb (880-887)

| Code | Description |
|------|-------------|
| 8876 | Amputation arm, bilat |
| 8877 | Amputat arm, bilat-compl |

## Open Wound Of Lower Limb (890-897)

| Code | Description |
|------|-------------|
| 8962 | Amputation foot, bilat |
| 8963 | Amputat foot, bilat-comp |
| 8972 | Amput above knee, unilat |
| 8973 | Amput abv kn, unil-compl |
| 8974 | Amputat leg, unilat NOS |
| 8975 | Amput leg, unil NOS-comp |
| 8976 | Amputation leg, bilat |

| Code | Description |
|---|---|
| 8977 | Amputat leg, bilat-compl |

**Late Effects Of Injuries, Poisonings, Toxic Effects, And Other External Causes (905-909)**

| Code | Description |
|---|---|
| 9072 | Late eff spinal cord inj |

**Burns (940-949)**

| Code | Description |
|---|---|
| 94556 | 3 deg burn w loss-thigh |
| 94559 | 3 deg brn w loss leg-mlt |
| 9465 | 3rd brn w loss-mult site |
| 94855 | 50-59% bdy brn/50-59% 3d |
| 94865 | 60-69% bdy brn/50-59% 3d |
| 94866 | 60-69% bdy brn/60-69% 3d |
| 94874 | 70-79% bdy brn/40-49% 3d |
| 94875 | 70-79% bdy brn/50-59% 3d |
| 94876 | 70-79% bdy brn/60-69% 3d |
| 94877 | 70-79% bdy brn/70-79% 3d |
| 94884 | 80-89% bdy brn/40-49% 3d |
| 94885 | 80-89% bdy brn/50-59% 3d |
| 94886 | 80-89% bdy brn/60-69% 3d |
| 94887 | 80-89% bdy brn/70-79% 3d |
| 94888 | 80-89% bdy brn/80-89% 3d |
| 94893 | 90% + bdy brn/30-39% 3rd |
| 94894 | 90% + bdy brn/40-49% 3rd |
| 94895 | 90% + bdy brn/50-59% 3rd |
| 94896 | 90% + bdy brn/60-69% 3rd |
| 94897 | 90% + bdy brn/70-79% 3rd |
| 94898 | 90% + bdy brn/80-89% 3rd |
| 94899 | 90% + bdy brn/90% + 3rd |

**Injury To Nerves And Spinal Cord (950-957)**

| Code | Description |
|---|---|
| 9501 | Injury to optic chiasm |
| 9503 | Injury to visual cortex |
| 95200 | C1-c4 spin cord inj NOS |
| 95201 | Complete les cord/c1-c4 |
| 95202 | Anterior cord synd/c1-c4 |
| 95203 | Central cord synd/c1-c4 |
| 95204 | C1-c4 spin cord inj NEC |
| 95205 | C5-c7 spin cord inj NOS |
| 95206 | Complete les cord/c5-c7 |
| 95207 | Anterior cord synd/c5-c7 |
| 95208 | Central cord synd/c5-c7 |
| 95209 | C5-c7 spin cord inj NEC |
| 95210 | T1-t6 spin cord inj NOS |
| 95211 | Complete les cord/t1-t6 |
| 95212 | Anterior cord synd/t1-t6 |
| 95213 | Central cord synd/t1-t6 |
| 95214 | T1-t6 spin cord inj NEC |
| 95215 | T7-t12 spin cord inj NOS |
| 95216 | Complete les cord/t7-t12 |
| 95217 | Anterior cord syn/t7-t12 |
| 95218 | Central cord syn/t7-t12 |
| 95219 | T7-t12 spin cord inj NEC |
| 9522 | Lumbar spinal cord injur |
| 9528 | Spin cord inj-mult site |

**Other And Unspecified Effects Of External Causes (990-995)**

| Code | Description |
|---|---|
| 9941 | Drowning/nonfatal submer |
| 99555 | Shaken infant syndrome |

**Complications Of Surgical And Medical Care, Not Elsewhere Classified (996-999)**

| Code | Description |
|---|---|
| 99687 | Comp intestine transplnt |
| 99702 | Iatrogen CV infarc/hmrhg |

**SUPPLEMENTARY CLASSIFICATION OF FACTORS INFLUENCING HEALTH STATUS AND CONTACT WITH HEALTH SERVICES (V01 V91)**

**Persons With Potential Health Hazards Related To Personal And Family History (V10-V19)**

| Code | Description |
|---|---|
| V110 | Hx of schizophrenia |
| V1522 | Hx in utero proc fetus |

**Persons With A Condition Influencing Their Health Status (V40-V49)**

| Code | Description |
|---|---|
| V4284 | Trnspl status-intestines |
| V4321 | Heart assist dev replace |
| V4322 | Artficial heart replace |
| V4381 | Larynx replacement |
| V440 | Tracheostomy status |
| V441 | Gastrostomy status |
| V4452 | Appendico-vesicos status |
| V4512 | Noncmplnt w renal dialys |
| V4572 | Acquire absnce intestine |
| V4575 | Acq absence of stomach |
| V4611 | Respirator depend status |
| V4612 | Resp depend-powr failure |
| V4614 | Mech comp respirator |
| V462 | Depend-supplement oxygen |
| V463 | Wheelchair dependence |
| V468 | Machine dependence NEC |
| V4967 | Status amput shoulder |
| V4976 | Status amput above knee |
| V4977 | Status amput hip |
| V4983 | Await organ transplnt st |
| V4985 | Dual sensory impairment |

**Persons Encountering Health Services For Specific Procedures And Aftercare (V50-V59)**

| Code | Description |
|---|---|
| V521 | Fitting artificial leg |
| V5302 | Adjust neuropacemaker |
| V532 | Adjustment hearing aid |
| V550 | Atten to tracheostomy |
| V551 | Atten to gastrostomy |

**Persons Encountering Health Services In Other Circumstances (V60-V69)**

| Code | Description |
|---|---|
| V667 | Encountr palliative care |

**Acquired Absence Of Other Organs And Tissue (V88-V88)**

| Code | Description |
|---|---|
| V8821 | Acq absence of hip joint |
| V8822 | Acq absence knee joint |

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# References

1.      World Health Organization. *International Classification of Functioning, Disability and Health: ICF*. Geneva, Switzerland: World Health Organization; 2001.

2.      United Nations. *Convention on the Rights of Persons with Disabilities and Optional Protocol.*; 2006. http://www.un.org/disabilities/documents/convention/convoptprot-e.pdf. Accessed May 23, 2014.

3.      World Health Organization. *Towards a Common Language for Functioning, Disability and Health*. Geneva; 2002.

4.      Institute of Medicine. *Enabling America: Assessing the Role of Rehabilitation Science and Engineering*. (Brandt E, Pope A, eds.). Washington D.C.: The National Academies Press; 1997.

5.      Institute of Medicine. *Disability in America: Toward a National Agenda for Prevention*. (Pope A, Tarlov A, eds.). Washington D.C.: National Academy Press; 1991.

6.      Institute of Medicine. *The Future of Disability in America*. (Field M, Jette A, eds.). Washington D.C.: The National Academies Press; 2007.

7.      Erickson W. *A Guide to Disability Statistics from the American Community Survey*. Ithaca, NY; 2011. http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1290&context=edicollect. Accessed July 24, 2014.

8.      Maag E. *National Health Interview Survey – Disability Supplement (NHIS-D) User Guide*. Ithaca, NY; 2006. http://digitalcommons.ilr.cornell.edu/edicollect/1206/. Accessed July 24, 2014.

9.      Megargel E, Broder-Fingert S. Autism and hospitals: a difficult match. *Acad Pediatr*. 2012;12(6):469-470. doi:10.1016/j.acap.2012.10.002.

10.     Liptak GS, Orlando M, Yingling JT, et al. Satisfaction with primary health care received by families of children with developmental disabilities. *J Pediatr Health Care*. 2006;20(4):245-252. doi:10.1016/j.pedhc.2005.12.008.

11.     US Department of Health and Human Services. Healthy People 2020. 2014. http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=9#two.

12.     Iezzoni LI. Eliminating health and health care disparities among the growing population of people with disabilities. *Health Aff (Millwood)*. 2011;30(10):1947-1954. doi:10.1377/hlthaff.2011.0613.

13.     Houtrow AJA, Okumura MJM, Hilton JJF, Rehm RRS. Profiling health and health-related services for children with special health care needs with and without disabilities. *Acad Pediatr*. 2011;11(6):508-516. doi:10.1016/j.acap.2011.08.004.Profiling.

14.  Nageswaran S, Silver EJ, Stein REK. Association of functional limitation with health care needs and experiences of children with special health care needs. *Pediatrics*. 2008;121(5):994-1001. doi:10.1542/peds.2007-1795.