

Report: 1993-2010 Birth Years

Acknowledgements

As is always the case, the information presented in this report is the culmination of the assistance, support and guidance of a great many people. There have been significant changes in our sector in recent years and particularly in the two years since our last report. Without the goodwill and effort of so many contributing supporters it would be impossible for the register to function.

We continue to be grateful to the people of Queensland who have cerebral palsy and their families. They provide us their information, which is the bedrock of any register. Over 400 new records of children, in an additional four birth years are presented in this report, information that was not available in 2014. This demonstrates the continued commitment of people with cerebral palsy and their families to building a strong register.

The Queensland Cerebral Palsy Register (QCPR) continues to have the support of CPL – Choice, Passion, Life, for organisational and office requirements. In the last two years two long-term supporters and QCPR Steering Committee Chairs, Mr Peter Mewett and Ms Angela Tillmanns, have moved on but we would like to acknowledge their dedication and support over many years. Their personal contribution, as well as the organisational support they directed towards the register has been instrumental in bringing us to where we are today. We wish them well in their new endeavours. We also welcome the new CEO of CPL – Choice, Passion, Life, Mr Rhys Kennedy, and look forward to continuing our strong relationship.

The Department of Communities, Child Safety and Disability Services continues to provide funding for the basic operation of the QCPR. The Queensland government has been a continuous supporter of the QCPR through its funding, without which the register may not have been possible at all.

Over the last few years, the Mater Children's Hospital and the Royal Children's Hospital – Brisbane, historically two of our largest sources of ascertainment, have ceased operating as public hospitals and amalgamated into the new Lady Cilento Children's Hospital, which has recently taken over as our largest source of ascertainment. The transition period, however, saw a temporary drop in ascertainment which gradually re-established itself throughout 2016.

The QCPR is advised by its Steering Committee, the members of which are detailed at the back of this report. We would like to make special mention of two retiring, long-standing Steering Committee members. Dr Peter Gray was a foundation member of the advisory committee, which assisted in setting up the QCPR and has maintained a presence and a support ever since. His specialised knowledge as a neonatologist will continue on in the Steering Committee through Dr Luke Jardine.

John Rynn, a representative of the CPL's State Client Consultative Committee, has also retired. His place has been filled by the Deputy Chair of the Client Consultative Committee, Jenny Johnston. Their input is vital in ensuring that the voice of registrants is heard in every decision and every direction that the QCPR takes.

The continuing positions on the Steering Committee represent researchers, education services, health services, disability services and the financial and in-kind supporters of the register. Without these volunteer resources the QCPR would not be in the strong position that it is today.

The QCPR relies on clinicians and service providers, including the administration offices of various services, to introduce the register to potential registrants. This is an added burden to already busy service providers throughout Queensland, but without it the QCPR would not exist at all. We are eternally grateful to this support from service providers, throughout the state, and it has allowed Queensland to be in the first group of recently established cerebral palsy registers to reach the

ascertainment level of 1.5 per thousand live births required by the Australian Cerebral Palsy Register ¹ (ACPR).

As a sign that the QCPR is maturing into a fully functioning register there has, for the first time, been several publications originating from data collected through the QCPR. We would like to particularly acknowledge the University of Queensland Physiotherapy Graduate Entry Masters program and the specific students who have been first to publish research using data collected through the register.

We look forward to the challenges of the next few years as the National Disability Insurance Scheme (NDIS) changes, and hopefully improves, the environment in which the register operates. We must ensure that the commitment of registrants to build a strong QCPR stays relevant as the sector changes with the introduction of the NDIS.

The physical address of the QCPR has changed, however the contact details remain the same:

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Foreword

Cerebral palsy is the most common cause of childhood physical disability, yet we are still learning about its causes and impacts.

We know that sharing information is vital to assist in developing the best possible solutions for people with disability, and will only become more important as medical technology and interventions continue to improve.

This is why I am pleased to welcome the Report of the Queensland Cerebral Palsy Register, which now captures key data for Queenslanders with Cerebral Palsy born between 1993 and 2010. This information is already making a real difference by linking clinical researchers with registrants, helping to progress important research work in this space.

The information in this register will also be beneficial as the National Disability Insurance Scheme (NDIS) continues to roll out across Queensland, helping with planning and preparation during the transition. The NDIS means people with cerebral palsy will have greater choice and control over the services and supports they need, allowing them to live the life they choose.

I would like to thank everyone who contributed to this register and the many service providers who support it, including CPL. Your influence and contribution will assist researchers to further understand and measure the causes and effects of cerebral palsy, Australia-wide.

Honourable Coralee O'Rourke MP
Queensland Minister for Disability Services



Coralee O'Rourke MP
Minister for Disability Services
Minister for Seniors
Minister Assisting the Premier on North Queensland

Executive summary

The Queensland Cerebral Palsy Register (QCPR) was established in 2005 with the goal of producing its first report in 2011 and establishing biannual reports by 2016. The overwhelming support the QCPR has been provided by services and people with cerebral palsy allowed the QCPR to far surpass these expectations. The first report of the QCPR was published in 2010 with a second report just two years later covering 10 birth years and a third report in 2014 covering a full 14-year cohort from 1995 to 2008. This current report details data from 17 birth years - 1993 to 2010.

Historically the largest number of registrations have been referred through CPL – Choice, Passion, Life and the two Brisbane based paediatric hospitals; the Royal Children's Hospital and the Mater Children's Hospital. Those two paediatric hospitals ceased operating individually and amalgamated into the Lady Cilento Children's Hospital in 2014. The processes of amalgamation caused a temporary hiatus of registrations from two of our largest referral sources while new ethics approvals and processes were established. Registrations from the new hospital were re-established in August 2015 and continue strongly today.

There is emerging evidence of a possible reduction in the prevalence of cerebral palsy over the last three years internationally but any reduction in our own data is unclear. The last two years show a small decline in known prevalence but registrations are still increasing with the re-establishment of ascertainment from the new Lady Cilento Children's Hospital and more registrations have been accepted by the QCPR for birth years 2009 and 2010 since the close of data for this report. It is equally likely that the reported reduction in prevalence for birth years 2009 and 2010 is due to the disruption of ascertainment processes in two of our largest referrers than any actual reduction in the prevalence of cerebral palsy in the wider community.

How common is Cerebral Palsy

There were 1692 registrations for the 17 years covered by this report averaging almost 100 people per year. The vast majority, 1623 registrations, were assumed pre- or peri-natally acquired. The remainder – 69 registrations – were known to be post-neonatally acquired. This post-neonatally acquired group represent 4.1% of the total cohort but are still too few for separate analysis. The data described in the tables and graphs of this report represent only the 1623 assumed pre- or peri-natally acquired registrations.

Even taking into account the possible reduced prevalence in birth years 2009 and 2010, the overall prevalence of cerebral palsy in Queensland is 1.8 per thousand live births. This value includes people living outside Queensland, primarily in northern New South Wales, but accessing services in Queensland. It also includes those children who were born in Queensland but have subsequently moved to other states.

Including only those people who were born in Queensland or transferred to a Queensland hospital during the neonatal period, the rate of cerebral palsy is 1.5 per thousand live births.

Motor type and distribution

The traditional classification method of cerebral palsy is to describe the type of motor impairment and the distribution of the limbs in which that motor impairment is measured. Most registers, including the QCPR collect a primary and secondary motor type but report only the primary findings.

Spasticity remains the overwhelmingly most common motor type and is present in 85.7% of people with cerebral palsy (Diplegia, 35.4%; Hemiplegia, 30.7%; Quadriplegia, 19.6%). The Dyskinesias are the second most common motor type with 6.3% of all registrations – Dystonia more common than Athetosis. Ataxia represents 4.4% of all registrations and hypotonic cerebral palsy is 3.6% of registrations.

Functional abilities

The QCPR has always collected the Gross Motor Function Classification System (GMFCS) as one measure of function. More recently the QCPR commenced collecting the Manual Ability Classification System (MACS) but data are not complete enough for reporting at present.

More than half (57%) of all registrations were classified GMFCS level I or II. These groups can functionally walk, manage stairs as well as rough ground but may need to hold rails or other supports on occasion. The majority of people in these groups were classified as spastic diplegia or spastic hemiplegia.

Almost one third (30%) of all registrations are classified GMFCS level IV all V. These groups are unable to walk far, or not at all, even inside their own homes. The majority of people in these groups were classified as spastic quadriplegia, dyskinesia and some spastic diplegia. Almost all those people who were functionally blind or had severe intellectual impairment were included in these levels, as were the majority of those people who did not use speech as their main method of communication.

Associated impairments

The QCPR collects five associated impairments including vision, hearing, speech, intelligence and epilepsy. Data are collected when the person is age 5 years.

Speech impairment is most frequently reported with 59% of all registrations reporting some impairment and 23% using no or very few words to communicate.

Just under half (49.7%) of all registrations reported some intellectual impairment, approximately half of whom (23.1%) were classified as moderate to severely impaired.

Visual impairment was reported in 43% of all registrations. An additional 10% reported having a strabismus without any other visual impairment. Only 4% were functionally blind.

Epilepsy was present in 31% of all registrations. An additional 4% of registrants reported some epilepsy – not including febrile convulsions as a neonate – that had resolved before the age of five years. We are also aware that some people with cerebral palsy develop epilepsy after the age of five but data is not available to report how common this might be.

Hearing impairment is the least frequently reported associated impairment with 11.5% reporting some level of impairment and 2.5% reporting bilateral deafness.

Identified risk factors

1. Gender. Male gender (56%) continues to be over represented in the cerebral palsy cohort.

2. Preterm delivery. While 50% of all people with cerebral palsy in Queensland were born at term this cohort had the lowest rate at 0.9 per thousand live births. Two hundred and four (14%) people with cerebral palsy were born prior to 28 weeks gestation with a rate 30 times higher than term deliveries at 26 per thousand live births. Four hundred and eighty-five (33%) people with cerebral palsy were born 28 – 36 weeks gestation with a rate of 8 times higher than those born term at 6.8 per thousand live births. Only 36 people (2.5%) were born at 42 or higher weeks gestation with a rate of three times those born term at 2.5 per thousand live births.

3. Low birth weight. Two hundred and sixty-eight (19%) people with cerebral palsy were born with a birth weight of 3500 – 4499 grams equalling a rate of 0.7 per thousand live births. Three hundred and fifty-five (25%) people with cerebral palsy were born smaller than 1500 grams with a rate 38 times higher at 25 per thousand live births. Two hundred and eighty-nine (21%) people with cerebral palsy were born 1500 – 2499

grams, a rate of nine times higher at 5.9 per thousand live births. Four hundred and sixty-two (33%) of people with cerebral palsy were born 2500 – 3499 grams, a rate 1.5 times higher at one per thousand live births.

4. Multiple births. One thousand two hundred and fifty-four (87%) people with cerebral palsy were born as singletons at 1.4 per thousand live births. There were 168 (12%) twins, nine times the rate at 11.8 per thousand live births. Nineteen (1.3%) people with cerebral palsy were triplets or higher order multiple birth, 34 times higher rate at 47 per thousand live births.

5. Indigenous status. One thousand three hundred and forty-seven (93%) people born with cerebral palsy had parents who did not identify as indigenous. Ninety-five (6.5%) had parents who were either Aboriginal or both Aboriginal and Torres Strait Islander which is 128% of the corresponding rate for the entire Queensland population. This rate has reduced since previous reports

Cerebral palsy

Cerebral palsy is still the most common physical disability in childhood. Historically the rate of cerebral palsy has been reported as between 2 and 2.5 people per thousand live births in the developed world ^{2,8}. There have been recent suggestions that the prevalence of cerebral palsy might be reducing in the last 5 years but these findings are not stable in our data as yet.

Definition of cerebral palsy

The definition of cerebral palsy used by the QCPR is the same definition used by the Australian Cerebral Palsy Register (ACPR) and all other Australian State and Territory Cerebral Palsy Registers.

Cerebral palsy:

1. Is an umbrella term for a group of disorders
2. Is a condition that is permanent but not unchanging
3. Involves a disorder of movement and/or posture and of motor function
4. Is due to a non-progressive interference, lesion or abnormality, and
5. The interference, lesion, or abnormality originates in the immature brain¹.

This definition is supported by experts within all Australian registers as most valid and useful definition of cerebral palsy available. It includes key elements from published definitions by Bax ², Mutch ³, and Rosenbaum ⁷.

The use of a consistent definition allows data from across all Australian registers to be pooled to create the single largest collection of data from people with cerebral palsy in contiguous jurisdictions in the world. The significance of this data source cannot be underestimated; it will be used to explore the causes of cerebral palsy and methods of prevention and amelioration once the injury has been sustained.

Classification of cerebral palsy

A person's presentation cerebral palsy has traditionally been described according to motor type and motor distribution:

Motor type refers to the type of movement disorder a person has, for example: spasticity, dyskinesia or hypotonia.

Distribution refers to which limbs are involved.

Combining both motor type and distribution allows the following classifications. Spastic cerebral palsy involves very high muscle tone causing stiff or jerky movements. Spasticity can be distributed predominantly on one side of the body (hemiplegia); affecting the legs more than the arms (diplegia); affecting both legs and particularly one arm (triplegia); or affecting both arms and legs with the arms more affected or equally affected than the legs (quadriplegia). Dyskinetic cerebral palsy is where muscle tone fluctuates for changes causing difficulty with control and coordination of movements. This category includes both athetosis and dystonia. Ataxic cerebral palsy has low muscle tone and poor coordination causing a shaking type movement or tremors. Hypertonic cerebral palsy requires low muscle tone in the presence of increased stretch reflexes.

These descriptions remain very important to understanding the nature of cerebral palsy because, by definition cerebral palsy is a group of different disorders with different presentations that have different findings on brain imaging ⁵. It is likely that different presentations will have different causal pathways and it is therefore likely that they will be susceptible to different methods of prevention. Additionally, the understanding of how brain injury affects function is improving ⁶ and different presentations of cerebral palsy will possibly require different methods of intervention.

Recent advancements have seen the development of additional methods to describe aspects of a person's presentation of cerebral palsy. The Gross Motor Function Classification System (GMFCS) categorises the level of

gross motor function achieved by people with cerebral palsy, for example the ability to sit and walk, or the need to use a walker or wheelchair. Research has shown that there are strong relationships between a child's GMFCS level and many aspects of development and function⁴. The usefulness of this classification system has seen it become routinely reported in clinical and scientific endeavour. In light of this practice, the current report will utilise it in relevant comparisons.

Aside from these two main classification systems, the individual presentations and experiences of people with cerebral palsy are also impacted by varying abilities related to vision, hearing, speech or language, intellectual status, as well as the presence of epilepsy. As each of these is common in people with cerebral palsy, this report details the extent they are present in the population of people with cerebral palsy born 1993 – 2010.

Queensland Cerebral Palsy Register

The purpose of the Queensland cerebral palsy register is to collect, analyse and present information that provides a description of people with cerebral palsy in Queensland.

This information is useful for:

- Describing the population of people who have cerebral palsy in Queensland, including regional groupings, abilities and birth histories.
- Researching the causes and impacts of cerebral palsy from registrants, families, service providers and funders.

The register is a stand-alone service that is separate from all other services, research and funding organisations. It includes data from people with cerebral palsy living throughout Queensland regardless of the organisations with which they may be associated.

Aims of the QCPR

The aims of the QCPR are to:

- Describe the number of people with cerebral palsy in Queensland, their functional abilities and general geographical distribution.
- Provide a useful collection of data that will assist service funders and service providers in designing systems to improve the lives of people with cerebral palsy in Queensland.
- Provide a useful collection of data that will inform people with cerebral palsy and their families about the scope of cerebral palsy in Queensland.
- Provide a database of information useful for research into the causes of cerebral palsy, future prevention and intervention strategies.
- Collaborate with other CP registers in Australia to provide the best possible source of information about cerebral palsy in Australia.

Australian Cerebral Palsy Register

The Australian Cerebral Palsy Register (ACPR) is a collaboration between all state and territory cerebral palsy registers, including the QCPR. The ACPR provides a central collation point for information about people with cerebral palsy from across Australia. This data is de-identified to protect the privacy of individuals. The amalgamation of data on a national scale dramatically increases the sensitivity of research into the causes and effects of cerebral palsy in Australia. It also provides a mechanism for comparing epidemiological data across traditional state boundaries. This allows analysis of issues with numbers too low to be analysed within individual states, such as post-neonatally acquired cerebral palsy in indigenous and non-indigenous populations⁹.

Methods of the QCPR

Ascertainment is a multi-stage process that includes:

- Identifying people with cerebral palsy
- Contacting each person (or their guardian) to gain consent for including them on the register
- Collecting the information from the person (or their guardian) about the characteristics not collected at the time of referral (e.g. home postcode at time of birth)
- Entering this information into the register database
- Confirming the accuracy of information, if required

The QCPR identifies the vast majority of people with cerebral palsy in Queensland through referrals from service providers, particularly CPL – Choice, Passion, Life, and via various services at the Lady Cilento Children's Hospital, particularly the Queensland Paediatric Rehabilitation Service. A small number of people are identified through community

awareness initiatives such as publications, news stories, advertising and the website.

To be included on the register, individuals can submit their contact information with or without the remaining dataset using four different methods:

- Online – registrants (or their guardian) can register directly via the QCPR website <http://www.qcpr.org.au>, and follow the link to the database.
- Mail – registrants (or their guardian) can mail the QCPR referral card or questionnaire to the register office. These forms are available from service providers or they can be downloaded from the QCPR website.
- Telephone – registrants (or their guardian) can telephone the register office and staff will collect information directly.
- Email – registrants (or their guardian) can email the information in a message to register staff. If the QCPR questionnaire has been completed, this can also be sent to the office by email.

As well as submitting information by one or more of these methods, clients also need to submit a consent form so the details can be incorporated into register analyses and reports. If not submitted at initial contact, the consent form can be downloaded from the QCPR website or staff will follow up with each registrant individually.

The consent form records up to 4 different consents:

- Collecting and entering QCPR data

Agreeing to their contact details and other information being uploaded onto the QCPR. This information is used by register staff to report on the characteristics of people with cerebral palsy in Queensland and contact

the person (or their guardian) to collect or update individual data and to send information summaries for their use.

- Transferring data to the Australian Cerebral Palsy Register

Agreeing to their individual characteristic information being uploaded to the Australian register. Personally identifying information is not transferred. Uploaded information is used to describe the population of people with cerebral palsy in Australia in the ACPR's tri-annual report (REF) and in population based research such as studies published in Supplement 2 of Developmental Medicine and Child Neurology, 2016.

- Research

Identifying whether they wish to be sent information about opportunities to participate in research into the causes, nature and efficacy of interventions for persons with cerebral palsy. All research supported by the QCPR is approved by the QCPR Steering Committee and a National Health and Medical Research Council approved Australian Ethics Committee. This consent indicates a willingness to be contacted for relevant research only. Individuals must provide specific consent to each researcher prior to participation in any given research however participation is confidential and not disclosed to, or recorded by the QCPR.

- Confirming QCPR data

Agreeing for register staff to contact a service provider, nominated by the registrants (or their guardian), to verify information about the person's clinical details or birth history. This may involve a nominated practitioner reviewing the person's QCPR registration information. This process is used to ensure that information held on the QCPR is consistent across Queensland.

The overall procedure for the QCPR was reviewed and approved by a National Health and Medical Research Council compliant ethics

committee (approval # CPLQ 2008/09-1013). Ethics approval for data porting from specific service providers to the QCPR has so far been received from the Cerebral Palsy League Ethics Committee (ref # CPLQ 2008/09–1013) and the Children’s Health Queensland Hospital and Health Service Human Research Ethics Committee (HREC/06/QRCH/85/AM02). The latter supersedes previous approvals from the Royal Children’s and Mater Children’s Hospitals that amalgamated in 2014.

Cohort

Information included in this report is from people born from 1 January 1993 to 31 December 2010 with a diagnosis of cerebral palsy at five years of age and who were born in Queensland, whether or not they still live in Queensland, or born outside Queensland but who now live in Queensland or receive services in Queensland.

Denominator data

Where the rate of cerebral palsy per thousand live births (LBS) is given in tables or graphs, the denominator value for live births is reported according to population statistics published electronically by the Queensland Health Statistics Unit at <http://www.health.qld.gov.au/hsu/peri.asp>. Statistics from each year are published separately. Data for gender, gestational age, birth weight and indigenous status of the yearly Queensland population were extracted and used for comparison of proportions between the population of people who subsequently registered on the QCPR and the whole population of births or to calculate rates of cerebral palsy within specific categories.

Some data items were not collected or not reported by the Queensland Health Statistics unit for each year, back to 1993. In these instances, rates are calculated in years where data are available and this is detailed in the titles of the affected tables and figures.

Important notes for interpreting tables and graphs

In general, tables include all data that is held on the register from people who do not have a known post-neonatal cause, including unknown values. Graphs and figures are used to represent specific information included in the tables and depending on the information intended to convey, they either include unknown values or not. In general, graphs with only one dependent value, will be bar graphs and will include unknown values. Graphs with two dependent values usually do not have unknown values included because there are three different sets of unknown values (value 1 is unknown, value 2 is unknown, or both values are unknown). Including these different unknown values in a single graph makes it difficult to understand and does not add significantly to the information that the graph is intended to convey. Where possible, abbreviations such as GMFCS are used in the titles of graphs and tables, but only if the full text has previously been used and the intended abbreviation has been displayed.

Notes applying to all tables

The total known in tables are calculated by adding all the known values and appear in the tables before the unknown values. The total number of people will therefore equal the total known as displayed in the table as well as the unknown values displayed directly after the total.

With the exception of “unknown values” all percentages are calculated as the number divided by the total of known values [n/ (all people-unknown)]. As a result, percentages of known values will add up to 100% +/- rounding errors. The symbol “^” will be displayed on the bottom of the table to indicate this.

Unless stated in the title, all tables exclude data from those with known post-neonatal causes. The symbol “Pn” is displayed below the table to indicate this.

Notes applying to all graphs

For bar graphs, where the vertical axis represents a number of people, the labels on top of each bar will be percentage of known. The symbol “^” will be displayed at the bottom of the graph to indicate this. If an unknown value is represented in a bar graph, there will be no label on that bar to indicate the percentage of all people however the number of people in this bar can be read along the vertical axis as usual and the percentage of total people can be read in the table directly above the graph.

In bar graphs, where the vertical axis represents a percentage of people, the labels on top of each bar will be number of people.

Where there are two dependent variables, such as graphs that have stacked columns, data are excluded where one or both of the values are missing. The symbol “u” will be displayed underneath the graph to indicate this.

Graphs that display a rate per thousand live births (LBS) use published data from the Statistical Services Branch of Queensland Health to calculate the rate for all Queensland births as well as the denominator values for rates of people with cerebral palsy. The specific publications used were the yearly Queensland Perinatal Statistics published online at <http://www.health.qld.gov.au/hsu/peri.asp> and the symbol “q” will be displayed below the graph to indicate this.

Summary

^ Percentage of known values only

Pn Excludes data from those with a known post-neonatal cause

q Uses published data from the Perinatal Data Statistics Unit

u Excludes data where one or both values are missing.

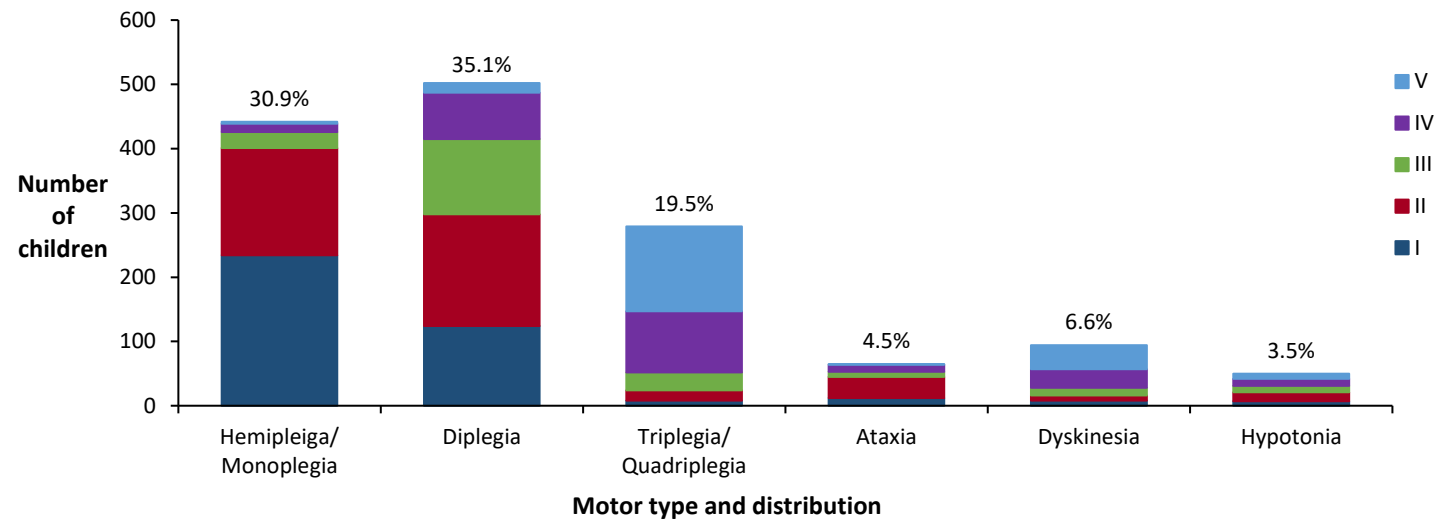
General classification

Motor type and distribution

Table 1: Number of people with cerebral palsy by predominant motor type and distribution.

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Motor type and distribution	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Spasticity																			
-Hemiplegia/monoplegia	15 (26.8)	17 (27.0)	24 (32.4)	28 (29.2)	22 (24.4)	22 (30.6)	29 (33.0)	25 (27.8)	23 (30.7)	26 (33.8)	21 (23.6)	28 (27.7)	36 (38.7)	30 (37.0)	29 (28.7)	36 (35.6)	24 (33.3)	22 (32.4)	457 (30.7)
-Diplegia	15 (26.8)	18 (28.6)	22 (29.7)	36 (37.5)	36 (40.0)	30 (41.7)	32 (36.4)	32 (35.6)	23 (30.7)	29 (37.7)	33 (37.1)	37 (36.6)	29 (31.2)	29 (35.8)	37 (36.6)	38 (37.6)	27 (37.5)	23 (33.8)	526 (35.4)
-Triplegia/Quadriplegia	13 (23.2)	16 (25.4)	17 (23.0)	19 (19.8)	16 (17.8)	18 (25.0)	19 (21.6)	17 (18.9)	14 (18.7)	24 (22.1)	17 (27.0)	17 (16.8)	15 (18.3)	15 (18.5)	18 (17.8)	10 (9.9)	12 (16.7)	12 (17.6)	291 (19.6)
Ataxia	3 (5.4)	7 (11.1)	3 (4.1)	8 (8.3)	4 (4.4)	1 (1.4)	2 (2.3)	5 (5.6)	2 (2.7)	1 (1.3)	5 (5.6)	5 (5.0)	3 (3.2)	2 (2.5)	4 (4.0)	5 (5.0)	4 (5.6)	2 (2.9)	66 (4.4)
Dyskinesia																			
-Mainly athetosis	5 (8.9)	1 (1.6)	5 (6.8)	1 (1.0)	0 (0.0)	0 (0.0)	3 (3.4)	2 (2.2)	4 (5.3)	0 (0.0)	0 (0.0)	4 (4.0)	0 (0.0)	1 (1.2)	3 (3.0)	2 (2.0)	0 (0.0)	0 (0.0)	31 (2.1)
-Mainly dystonia	2 (3.6)	1 (1.6)	2 (2.7)	1 (1.0)	7 (7.8)	1 (1.4)	1 (1.1)	5 (5.6)	5 (6.7)	2 (2.6)	2 (2.2)	6 (5.9)	7 (7.5)	2 (2.5)	6 (5.9)	5 (5.0)	4 (5.6)	4 (5.9)	63 (4.2)
Hypotonia	3 (5.4)	3 (4.8)	1 (1.4)	3 (3.1)	5 (5.6)	0 (0.0)	2 (2.3)	4 (4.4)	4 (5.3)	2 (2.6)	4 (4.5)	4 (4.0)	1 (1.1)	2 (2.5)	4 (4.0)	5 (5.0)	1 (1.4)	5 (7.4)	53 (3.6)
Total Known	56	63	74	96	90	72	88	90	75	77	89	101	93	81	101	101	72	68	1487
Unknown	3	8	7	9	5	8	3	7	4	6	10	8	9	7	12	8	5	17	136
Total	59	71	81	105	95	80	91	97	79	83	99	109	102	88	113	109	77	85	1623
Pn ^																			

Figure 1: Number of people with cerebral palsy, born 1993-2010, by predominant motor type and distribution and GMFCS level



Pn ^ u

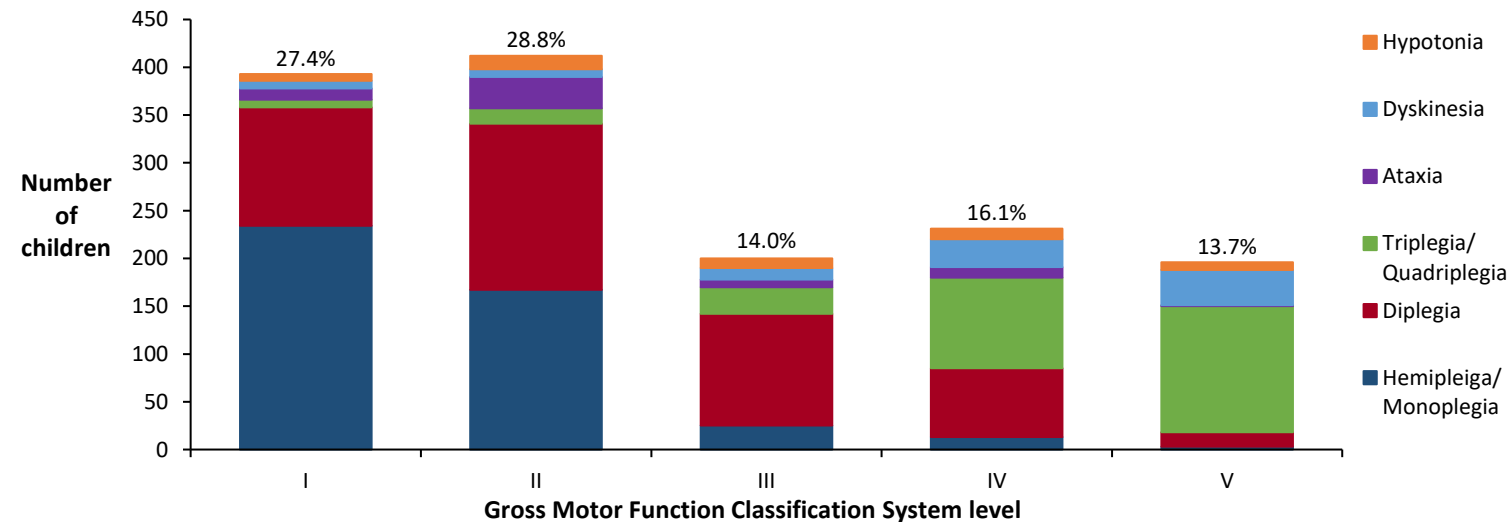
Gross Motor Function Classification System (GMFCS)

Table 2: Number of people with cerebral palsy by GMFCS level

GMFCS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
GMFCS	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
I	14 (25.9)	14 (23.3)	21 (28.0)	31 (31.3)	19 (23.2)	28 (36.4)	25 (28.4)	24 (28.2)	15 (20.5)	21 (27.3)	22 (23.9)	36 (35.3)	29 (30.9)	22 (25.6)	27 (24.3)	33 (31.7)	20 (27.0)	18 (25.0)	419 (27.8)
II	12 (22.2)	14 (23.3)	17 (22.7)	20 (20.2)	28 (34.1)	18 (23.4)	21 (23.9)	24 (28.2)	18 (24.7)	24 (31.2)	32 (34.8)	30 (29.4)	28 (29.8)	26 (30.2)	38 (34.2)	31 (29.8)	24 (32.4)	27 (37.5)	432 (28.7)
III	8 (14.8)	14 (23.3)	13 (17.3)	16 (16.2)	18 (22.0)	7 (9.1)	13 (14.8)	12 (14.1)	9 (12.3)	13 (16.9)	7 (7.6)	10 (9.8)	13 (13.8)	9 (10.5)	10 (9.0)	13 (12.5)	11 (14.9)	11 (15.3)	207 (13.8)
IV	12 (22.2)	13 (21.7)	13 (17.3)	11 (11.1)	5 (6.1)	15 (19.5)	15 (17.0)	11 (12.9)	20 (27.4)	11 (14.3)	17 (18.5)	9 (8.8)	16 (17.0)	17 (19.8)	21 (18.9)	19 (18.3)	10 (13.5)	8 (11.1)	243 (16.1)
V	8 (14.8)	5 (8.3)	11 (14.7)	21 (21.2)	12 (14.6)	9 (11.7)	14 (15.9)	14 (16.5)	11 (15.1)	8 (10.4)	14 (15.2)	17 (16.7)	8 (8.5)	12 (14.0)	15 (13.5)	8 (7.7)	9 (12.2)	8 (11.1)	204 (13.6)
Total Known	54	60	75	99	82	77	88	85	73	77	92	102	94	86	111	104	74	72	1505
Unknown	5	11	6	6	13	3	3	12	6	6	7	7	8	2	2	5	3	13	118
Total n	59	71	81	105	95	80	91	97	79	83	99	109	102	88	113	109	77	85	1623

Pn ^

Figure 2: Number of people with cerebral palsy, born 1993-2010, by GMFCS level and motor type and distribution



Pn ^ u

Birth details

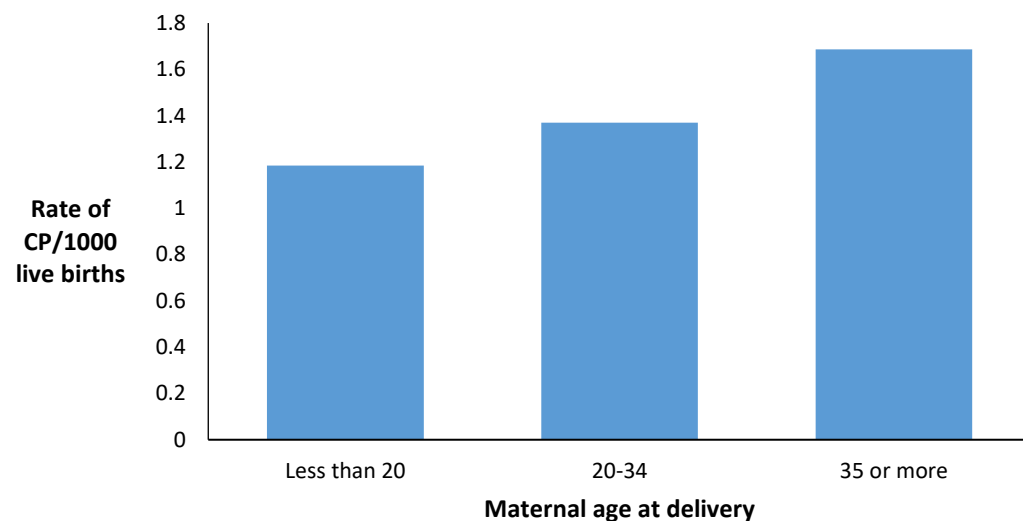
Maternal age at delivery

Table 3: Number and percentage of people with cerebral palsy by maternal age at delivery

Maternal age	1993 n (%)	1994 n (%)	1995 n (%)	1996 n (%)	1997 n (%)	1998 n (%)	1999 n (%)	2000 n (%)	2001 n (%)	2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	Total n (%)
≤19 yrs	3 (6.7)	5 (11.4)	6 (9.0)	5 (5.6)	7 (9.1)	4 (5.8)	5 (7.0)	4 (5.3)	2 (3.1)	0 (0.0)	4 (5.3)	5 (5.9)	3 (3.4)	3 (3.8)	4 (4.1)	5 (5.1)	3 (4.8)	0 (0.0)	68 (5.2)
20-24 yrs	7 (15.6)	9 (20.5)	8 (11.9)	17 (19.1)	11 (14.3)	9 (13.0)	14 (19.7)	15 (19.7)	14 (21.5)	10 (14.7)	10 (13.2)	18 (21.2)	11 (12.4)	14 (17.7)	14 (14.4)	8 (8.2)	7 (11.3)	12 (23.1)	208 (15.9)
25-29 yrs	15 (33.3)	11 (25.0)	26 (38.8)	25 (28.1)	28 (36.4)	30 (43.5)	22 (31.0)	24 (31.6)	19 (29.2)	25 (36.8)	22 (28.9)	13 (15.3)	33 (37.1)	18 (22.8)	22 (22.7)	31 (31.6)	17 (27.4)	13 (25.0)	394 (30.1)
30-34 yrs	14 (31.1)	13 (29.5)	16 (23.9)	29 (32.6)	23 (29.9)	13 (18.8)	21 (29.6)	26 (34.2)	20 (30.8)	19 (27.9)	25 (32.9)	27 (31.8)	24 (27.0)	28 (35.4)	33 (34.0)	26 (26.5)	17 (27.4)	16 (30.8)	390 (29.8)
35-39 yrs	4 (8.9)	4 (9.1)	11 (16.4)	12 (13.5)	8 (10.4)	11 (15.9)	7 (9.9)	7 (9.2)	10 (15.4)	12 (17.6)	12 (15.8)	18 (21.2)	15 (16.9)	15 (19.0)	16 (16.5)	25 (25.5)	17 (27.4)	9 (17.3)	213 (16.3)
≥40 yrs	2 (4.4)	2 (4.5)	0 (0.0)	1 (1.1)	0 (0.0)	2 (2.9)	2 (2.8)	0 (0.0)	0 (0.0)	2 (2.9)	3 (3.9)	4 (4.7)	3 (3.4)	1 (1.3)	8 (8.2)	3 (3.1)	1 (1.6)	2 (3.8)	36 (2.8)
Total Known	45	44	67	89	77	69	71	76	65	68	76	85	89	79	97	98	62	52	1309
Unknown	14	27	14	16	18	11	20	21	14	15	23	24	13	9	16	11	15	33	314
Total n	59	71	81	105	95	80	91	97	79	83	99	109	102	88	113	109	77	85	1623

Pn ^

Figure 3: Rate of people with cerebral palsy, born 1993-2010, per thousand live births (LBS) by maternal age at delivery



Pn q u

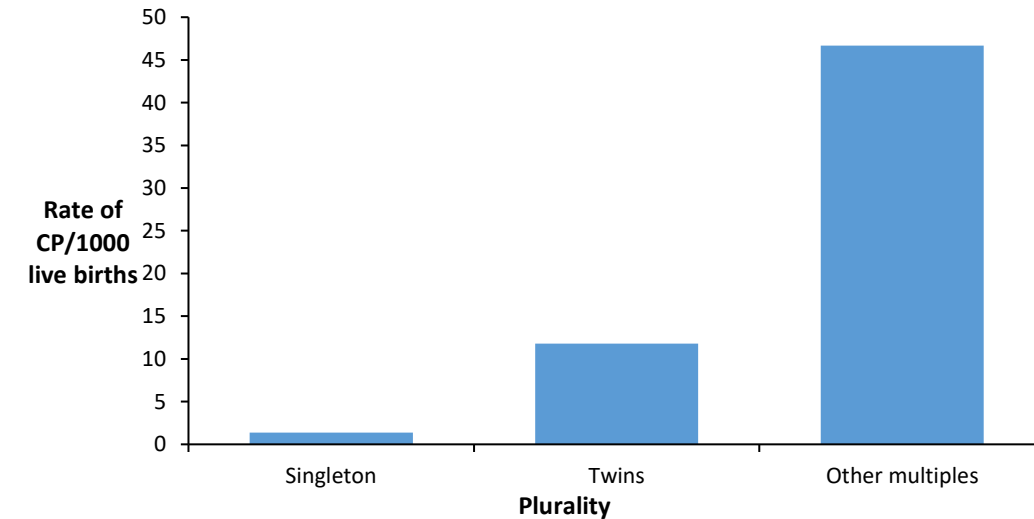
Plurality

Table 4: Number and percentage of people with cerebral palsy by birth plurality

Plurality	1993 n (%)	1994 n (%)	1995 n (%)	1996 n (%)	1997 n (%)	1998 n (%)	1999 n (%)	2000 n (%)	2001 n (%)	2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	Total n (%)
Singleton	44 (89.8)	44 (83.0)	59 (86.8)	92 (92.9)	71 (89.9)	67 (87.0)	74 (88.1)	74 (90.2)	56 (80.0)	63 (81.8)	72 (82.8)	88 (87.1)	81 (86.2)	73 (85.9)	98 (93.3)	89 (85.6)	57 (85.1)	52 (86.7)	1254 (87.0)
Twins	4 (8.2)	7 (13.2)	9 (13.2)	6 (6.1)	7 (8.9)	9 (11.7)	8 (9.5)	7 (8.5)	14 (20.0)	11 (14.3)	14 (16.1)	12 (11.9)	13 (13.8)	12 (14.1)	5 (4.8)	13 (12.5)	9 (13.4)	8 (13.3)	168 (11.7)
Triplets	1 (2.0)	2 (3.8)	0 (0.0)	1 (1.0)	1 (1.3)	1 (1.3)	0 (0.0)	1 (1.2)	0 (0.0)	2 (2.6)	0 (0.0)	1 (1.0)	0 (0.0)	0 (0.0)	2 (1.9)	2 (1.9)	1 (1.5)	0 (0.0)	15 (1.0)
Higher order multiple	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (2.4)	0 (0.0)	0 (0.0)	1 (1.3)	1 (1.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (0.3)
Total Known	49	53	68	99	79	77	84	82	70	77	87	101	94	85	105	104	67	60	1441
Unknown	10	18	13	6	16	3	7	15	9	6	12	8	8	3	8	5	10	25	182
Total	59	71	81	105	95	80	91	97	79	83	99	109	102	88	113	109	77	85	1623

Pn ^

Figure 4: Rate of people with cerebral palsy, born 1993-2010, per thousand live births (LBS) by plurality



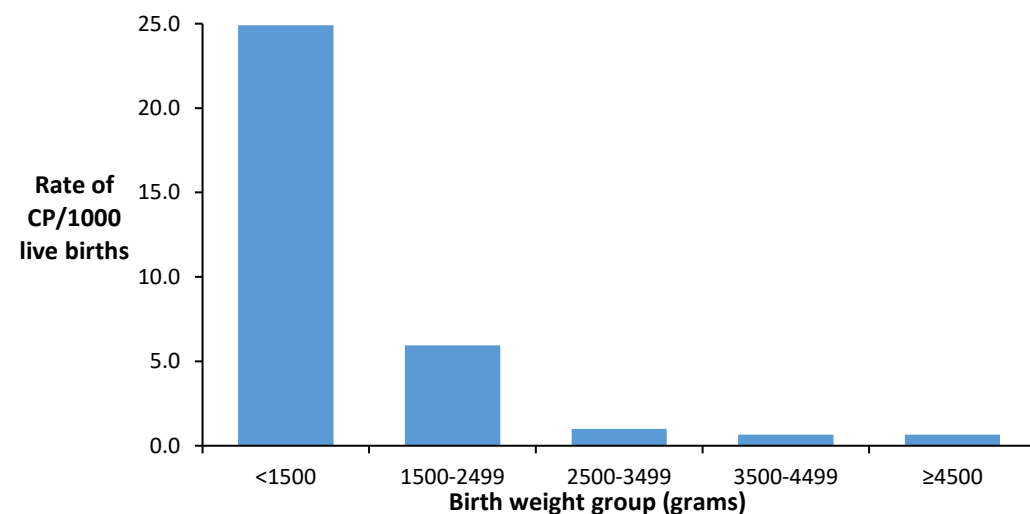
Pn q u

Birth weight

Table 5: Number and percentage of people with cerebral palsy by birth weight in grams

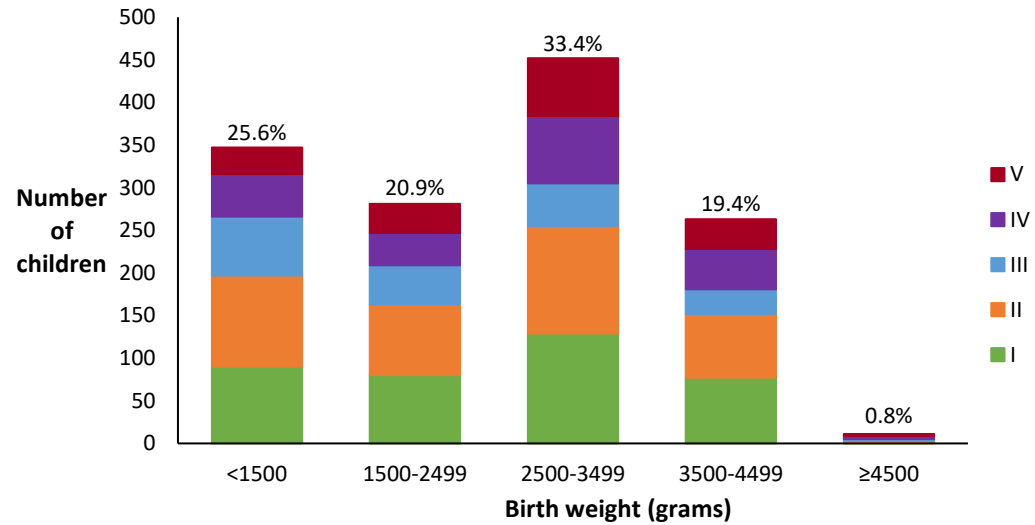
Birth weight (g)	1993 n (%)	1994 n (%)	1995 n (%)	1996 n (%)	1997 n (%)	1998 n (%)	1999 n (%)	2000 n (%)	2001 n (%)	2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	Total n (%)
<1500	13 (27.7)	11 (22.4)	12 (19.4)	22 (22.9)	22 (28.2)	21 (28.8)	27 (34.2)	24 (29.3)	16 (23.5)	23 (29.5)	23 (27.4)	30 (30.3)	20 (21.5)	16 (20.3)	19 (19.0)	21 (21.9)	21 (33.3)	14 (23.7)	355 (25.6)
1500-2499	6 (12.8)	12 (24.5)	14 (22.6)	16 (16.7)	15 (19.2)	15 (20.5)	11 (13.9)	15 (18.3)	17 (25.0)	16 (20.5)	18 (21.4)	19 (19.2)	23 (24.7)	14 (17.7)	24 (24.0)	28 (29.2)	11 (17.5)	15 (25.4)	289 (20.9)
2500-3499	19 (40.4)	10 (20.4)	19 (30.6)	37 (38.5)	30 (38.5)	25 (34.2)	24 (30.4)	27 (32.9)	21 (30.9)	28 (35.9)	28 (33.3)	29 (29.3)	26 (28.0)	34 (43.0)	39 (39.0)	25 (26.0)	21 (33.3)	20 (33.9)	462 (33.4)
3500-4499	9 (19.1)	16 (32.7)	16 (25.8)	21 (21.9)	10 (12.8)	12 (16.4)	17 (21.5)	16 (19.5)	13 (19.1)	11 (14.1)	15 (17.9)	19 (19.2)	23 (24.7)	15 (19.0)	16 (16.0)	21 (21.9)	10 (15.9)	8 (13.6)	268 (19.4)
≥4500	0 (0.0)	0 (0.0)	1 (1.6)	0 (0.0)	1 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.5)	0 (0.0)	0 (0.0)	2 (2.0)	1 (1.1)	0 (0.0)	2 (2.0)	1 (1.0)	0 (0.0)	2 (3.4)	11 (0.8)
Total Known	47	49	62	96	78	73	79	82	68	78	84	99	93	79	100	96	63	59	1385
Unknown	12	22	19	9	17	7	12	15	11	5	15	10	9	9	13	13	14	26	238
Total n	59	71	81	105	95	80	91	97	79	83	99	109	102	88	113	109	77	85	1623

Figure 5a: Rate of people with cerebral palsy, born 1993-2010, per thousand live births (LBS) by birth weight



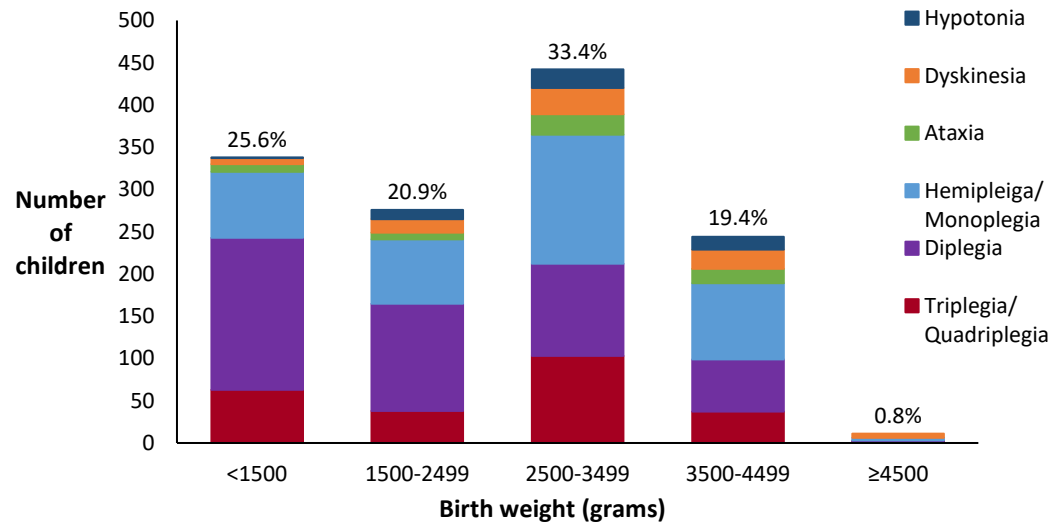
Pn q u

Figure 5b: Number of people with cerebral palsy, born 1993-2010, by birth weight and GMFCS level



Pn ^ u

Figure 5c: Number of people with cerebral palsy, born 1993-2010, by birth weight and motor type and distribution



Pn ^ u

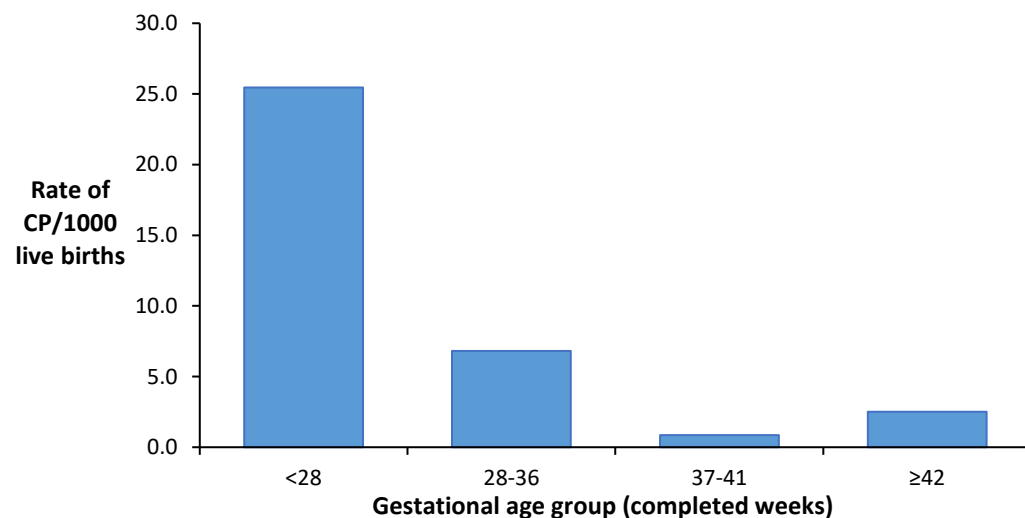
Gestational age

Table 6: Number and percentage of people with cerebral palsy by gestational age in completed weeks at delivery

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Gestational age	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
<28	10 (21.7)	9 (17.0)	5 (7.8)	13 (13.1)	14 (16.5)	16 (21.1)	12 (14.3)	11 (13.1)	10 (13.3)	12 (15.2)	8 (8.9)	16 (16.0)	16 (16.8)	9 (10.6)	9 (8.5)	12 (11.7)	15 (21.4)	7 (10.6)	204 (14.0)
28-36	9 (19.6)	18 (34.0)	22 (34.4)	28 (28.3)	25 (29.4)	22 (28.9)	28 (33.3)	36 (42.9)	26 (34.7)	30 (38.0)	36 (40.0)	34 (34.0)	24 (25.3)	25 (29.4)	39 (36.8)	40 (38.8)	18 (25.7)	25 (37.9)	485 (33.2)
37-41	22 (47.8)	25 (47.2)	37 (57.8)	57 (57.6)	41 (48.2)	37 (48.7)	42 (50.0)	31 (36.9)	38 (50.7)	37 (46.8)	46 (51.1)	49 (49.0)	53 (55.8)	49 (57.6)	55 (51.9)	47 (45.6)	35 (50.0)	34 (51.5)	735 (50.3)
≥42	5 (10.9)	1 (1.9)	0 (0.0)	1 (1.0)	5 (5.9)	1 (1.3)	2 (2.4)	6 (7.1)	1 (1.3)	0 (0.0)	0 (0.0)	1 (1.0)	2 (2.1)	2 (2.4)	3 (2.8)	4 (3.9)	2 (2.9)	0 (0.0)	36 (2.5)
Total Known	46	53	64	99	85	76	84	84	75	79	90	100	95	85	106	103	70	66	1460
Unknown	13	18	17	6	10	4	7	13	4	4	9	9	7	3	7	6	7	19	163
Total	59	71	81	105	95	80	91	97	79	83	99	109	102	88	113	109	77	85	1623

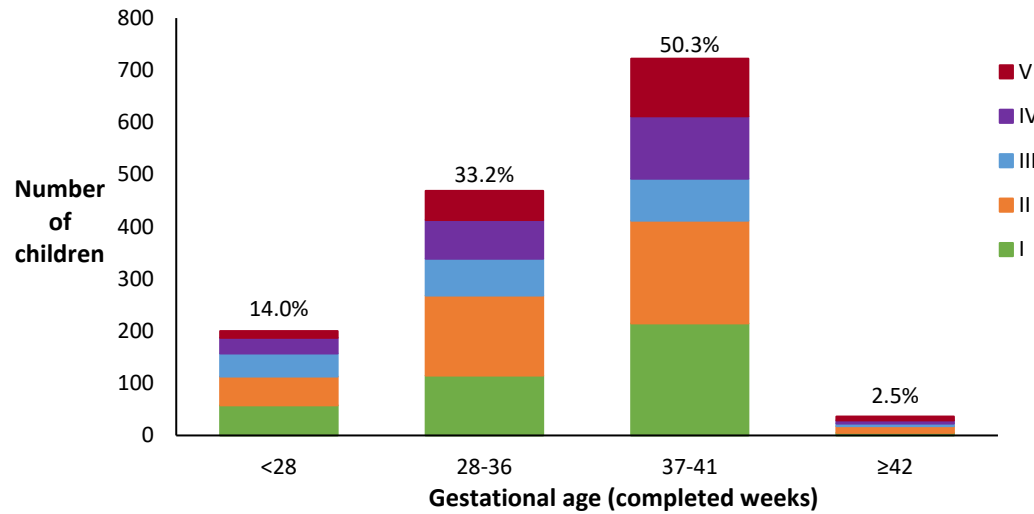
Pn ^

Figure 6a: Rate of people with cerebral palsy, born 1993-2010, by gestational age



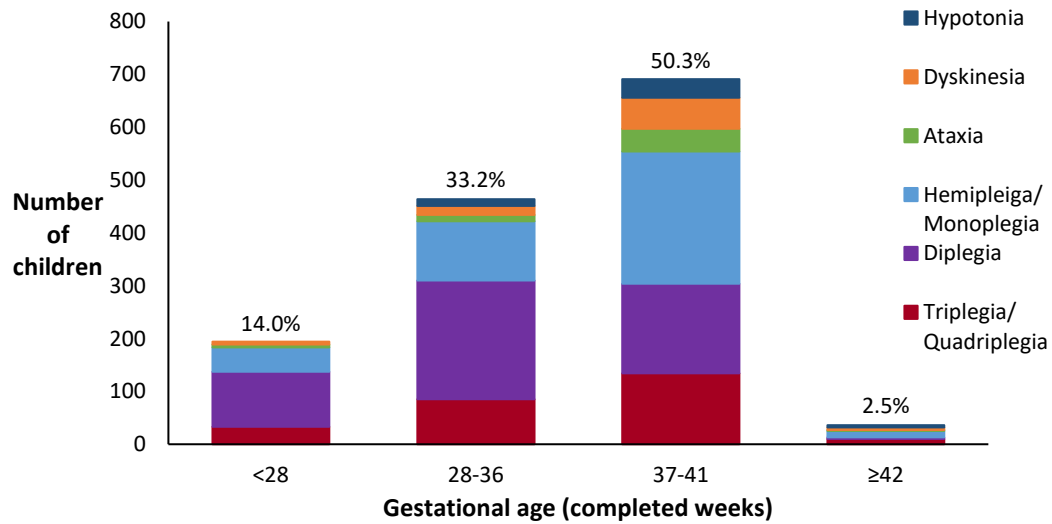
Pn q u

Figure 6b: Number of people with cerebral palsy, born 1993-2010, by gestational age and GMFCS level



Pn ^ u

Figure 6c: Number of people with cerebral palsy, born 1993-2010, by gestational age and motor type and distribution



Pn ^ u

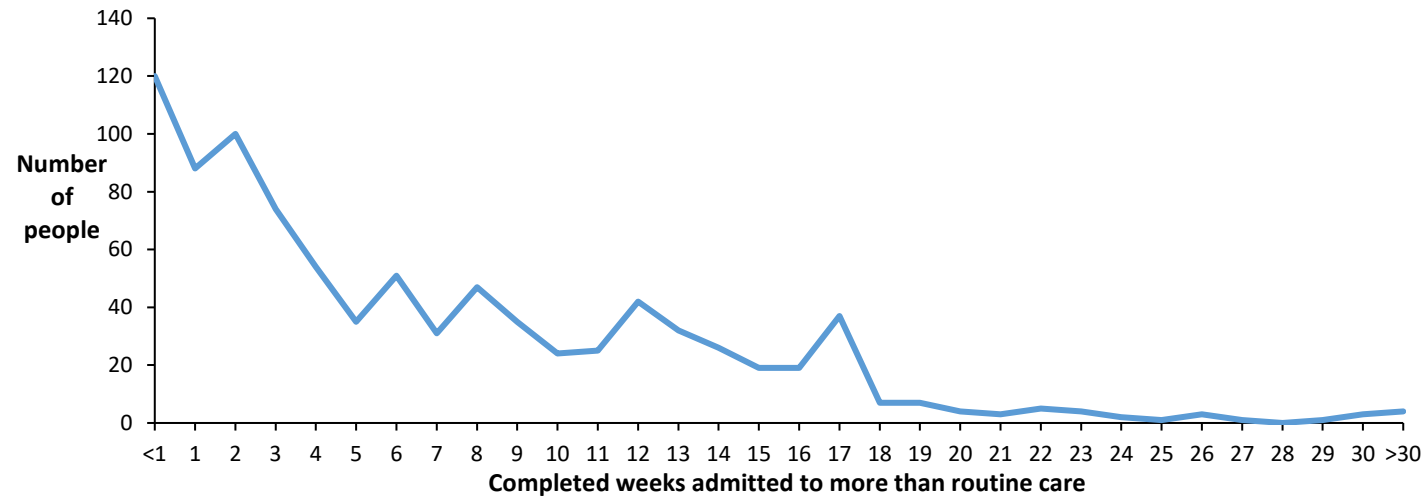
Admission to more than routine care

Table 7: Number and percentage of people with cerebral palsy by type of neonatal care

Type of Hospital care	1993 n (%)	1994 n (%)	1995 n (%)	1996 n (%)	1997 n (%)	1998 n (%)	1999 n (%)	2000 n (%)	2001 n (%)	2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	Total n (%)
NICU only	3 (7.0)	5 (9.8)	5 (7.7)	22 (23.4)	13 (17.1)	13 (17.1)	18 (22.0)	17 (21.0)	14 (19.2)	11 (14.5)	7 (8.2)	11 (11.3)	11 (12.4)	1 (1.2)	8 (7.5)	7 (6.8)	4 (6.1)	3 (5.4)	173 (12.3)
NICU and SCN	16 (37.2)	20 (39.2)	25 (38.5)	24 (25.5)	29 (38.2)	28 (36.8)	30 (36.6)	36 (44.4)	30 (41.1)	38 (50.0)	34 (40.0)	38 (39.2)	31 (34.8)	36 (42.9)	52 (49.1)	38 (36.9)	29 (43.9)	27 (48.2)	561 (40.0)
SCN only	10 (23.3)	6 (11.8)	11 (16.9)	14 (14.9)	12 (15.8)	14 (18.4)	10 (12.2)	11 (13.6)	10 (13.7)	11 (14.5)	11 (12.9)	14 (14.4)	14 (15.7)	18 (21.4)	17 (16.0)	18 (17.5)	11 (16.7)	10 (17.9)	222 (15.8)
Routine care only	14 (32.6)	20 (39.2)	24 (36.9)	34 (36.2)	22 (28.9)	21 (27.6)	24 (29.3)	17 (21.0)	19 (26.0)	16 (21.1)	33 (38.8)	34 (35.1)	33 (37.1)	29 (34.5)	29 (27.4)	40 (38.8)	22 (33.3)	16 (28.6)	447 (31.9)
Total Known	43	51	65	94	76	76	82	81	73	76	85	97	89	84	106	103	66	56	1403
Unknown	16	20	16	11	19	4	9	16	6	7	14	12	13	4	7	6	11	29	220
Total	59	71	81	105	95	80	91	97	79	83	99	109	102	88	113	109	77	85	1623

Pn ^

Figure 7: Number of people with cerebral palsy, born 1993-2010, who were admitted to more than routine care for greater than 24 hours by length of stay (completed weeks)



Pn u

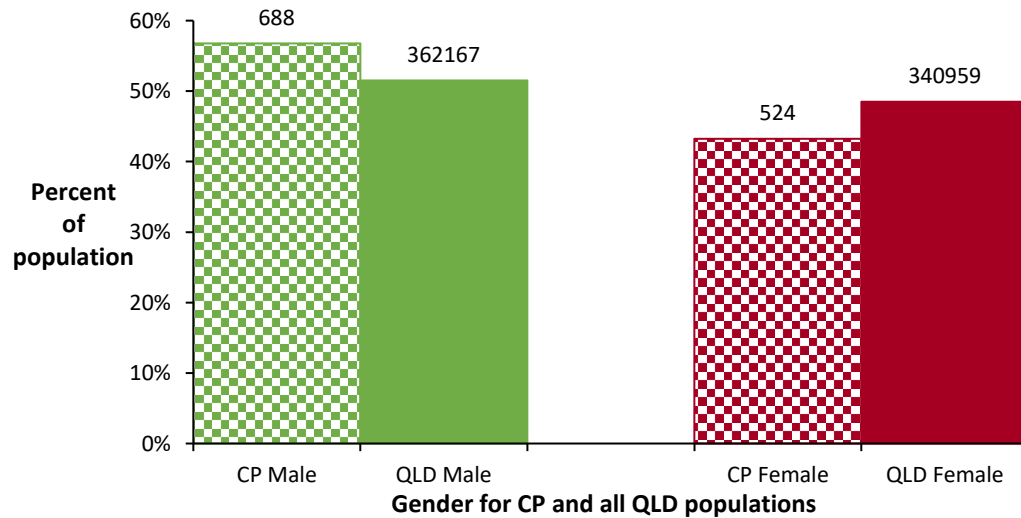
Demographics

Gender

Table 8: Number and percentage of people with cerebral palsy by gender

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Gender	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Male	30 (50.8)	37 (52.1)	47 (58.0)	52 (49.5)	51 (53.7)	46 (57.5)	51 (56.0)	57 (58.8)	42 (53.2)	46 (55.4)	56 (56.6)	73 (67.0)	62 (60.8)	38 (43.2)	63 (55.8)	63 (57.8)	42 (54.5)	49 (57.6)	905 (55.8)
Female	29 (49.2)	34 (47.9)	34 (42.0)	53 (50.5)	44 (46.3)	34 (42.5)	40 (44.0)	40 (41.2)	37 (46.8)	37 (44.6)	43 (43.4)	36 (33.0)	40 (39.2)	50 (56.8)	50 (44.2)	46 (42.2)	35 (45.5)	36 (42.4)	718 (44.2)
Total Known	59	71	81	105	95	80	91	97	79	83	99	109	102	88	113	109	77	85	1623
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	59	71	81	105	95	80	91	97	79	83	99	109	102	88	113	109	77	85	1623

Figure 8: Percentage of people with cerebral palsy, born 1993-2010, and percentage of all people in QLD, born 1998-2010, by gender



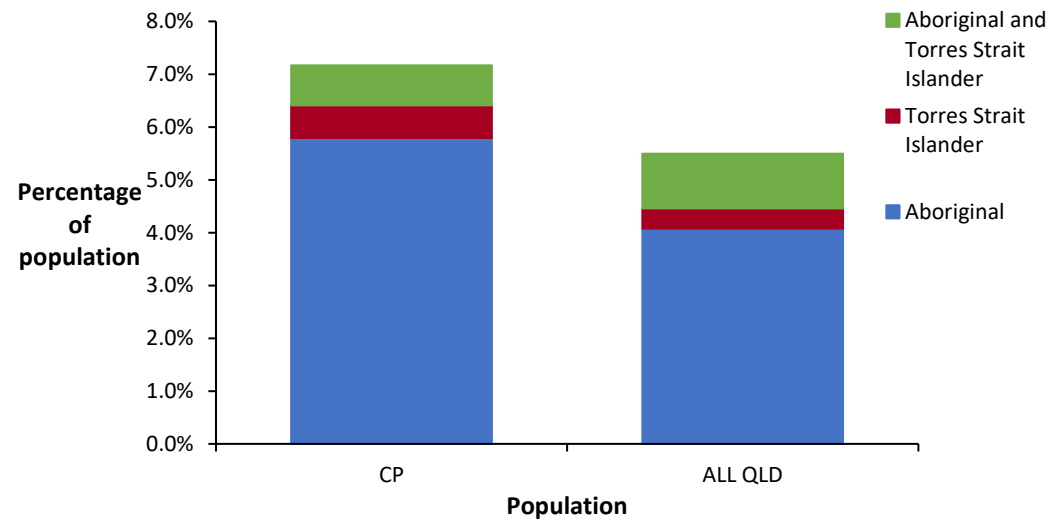
Pn q

Indigenous status

Table 9: Number and percentage of people with cerebral palsy by indigenous status

Indigenous Status	1993 n (%)	1994 n (%)	1995 n (%)	1996 n (%)	1997 n (%)	1998 n (%)	1999 n (%)	2000 n (%)	2001 n (%)	2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	Total n (%)
Aboriginal	6 (13.0)	2 (3.8)	5 (7.4)	3 (3.0)	6 (7.1)	4 (5.3)	3 (3.6)	3 (3.5)	5 (6.8)	2 (2.6)	3 (3.4)	9 (8.9)	2 (2.1)	3 (3.5)	7 (6.5)	6 (5.9)	7 (10.3)	8 (13.8)	84 (5.8)
Aboriginal and Torres Strait Islander	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.3)	0 (0.0)	2 (2.4)	2 (2.7)	1 (1.3)	1 (1.1)	1 (1.0)	0 (0.0)	1 (1.2)	0 (0.0)	0 (0.0)	1 (1.5)	1 (1.7)	11 (0.8)
Torres Strait Islander	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3 (3.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.3)	0 (0.0)	3 (3.0)	0 (0.0)	0 (0.0)	1 (0.9)	1 (1.0)	0 (0.0)	0 (0.0)	9 (0.6)
Non-Indigenous	40 (87.0)	51 (96.2)	63 (92.6)	96 (97.0)	76 (89.4)	70 (93.3)	81 (96.4)	80 (94.1)	67 (90.5)	73 (94.8)	85 (95.5)	88 (87.1)	93 (97.9)	81 (95.3)	99 (92.5)	95 (93.1)	60 (88.2)	49 (84.5)	1347 (92.8)
Total Known	46	53	68	99	85	75	84	85	74	77	89	101	95	85	107	102	68	58	1451
Unknown	13	18	13	6	10	5	7	12	5	6	10	8	7	3	6	7	9	27	172
Total	59	71	81	105	95	80	91	97	79	83	99	109	102	88	113	109	77	85	1623

Figure 9: Percentage of people with cerebral palsy and all people born in QLD by indigenous status (1998–2008)



Pn ^ q u

Associated impairments

Vision status

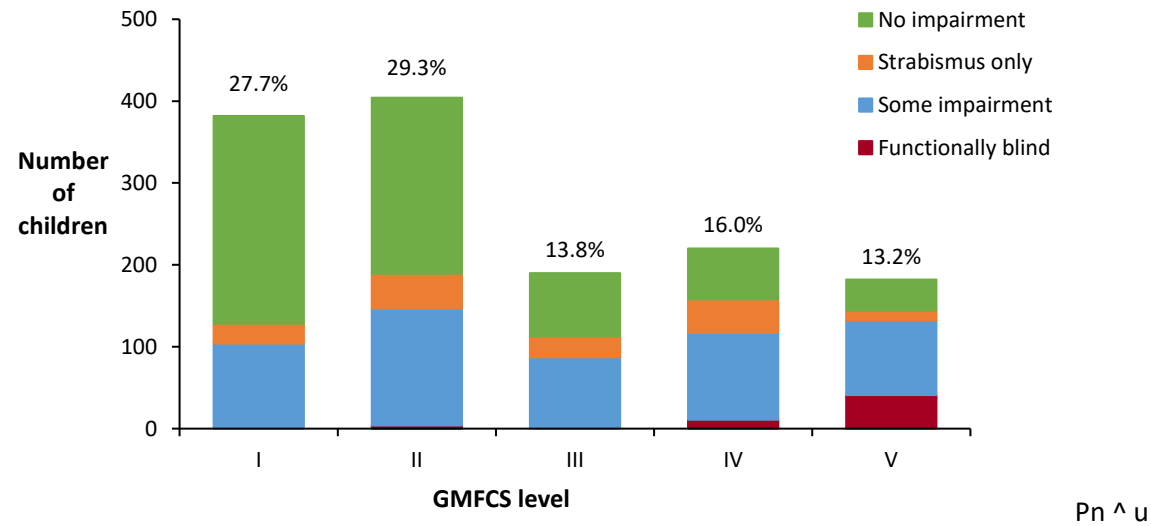
Table 10: Number of people with cerebral palsy by vision status

Vision Status	1993 n (%)	1994 n (%)	1995 n (%)	1996 n (%)	1997 n (%)	1998 n (%)	1999 n (%)	2000 n (%)	2001 n (%)	2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	Total n (%)
Functionally blind	2 (3.9)	1 (1.8)	2 (2.9)	9 (10.7)	3 (3.9)	3 (4.1)	5 (6.0)	5 (6.3)	2 (2.9)	2 (2.7)	4 (5.1)	4 (4.3)	3 (3.4)	2 (2.4)	4 (3.7)	1 (1.0)	4 (5.7)	0 (0.0)	56 (4.0)
Some impairment	29 (56.9)	27 (47.4)	32 (45.7)	39 (46.4)	33 (42.9)	28 (38.4)	32 (38.1)	32 (40.0)	31 (45.6)	24 (32.9)	31 (39.2)	30 (32.6)	32 (36.4)	34 (40.5)	36 (33.0)	29 (29.0)	19 (27.1)	20 (33.3)	538 (38.5)
None	16 (31.4)	24 (42.1)	30 (42.9)	35 (41.7)	36 (46.8)	32 (43.8)	37 (44.0)	35 (43.8)	32 (47.1)	40 (54.8)	34 (43.0)	52 (56.5)	42 (47.7)	34 (40.5)	55 (50.5)	56 (56.0)	38 (54.3)	32 (53.3)	660 (47.2)
Strabismus only	4 (7.8)	5 (8.8)	6 (8.6)	1 (1.2)	5 (6.5)	10 (13.7)	10 (11.9)	8 (10.0)	3 (4.4)	7 (9.6)	10 (12.7)	6 (6.5)	11 (12.5)	14 (16.7)	14 (12.8)	14 (14.0)	9 (12.9)	8 (13.3)	145 (10.4)
Total Known	51	57	70	84	77	73	84	80	68	73	79	92	88	84	109	100	70	60	1399
Unknown	8	14	11	21	18	7	7	17	11	10	20	17	14	4	4	9	7	25	224
Total	59	71	81	105	95	80	91	97	79	83	99	109	102	88	113	109	77	85	1623

Pn ^

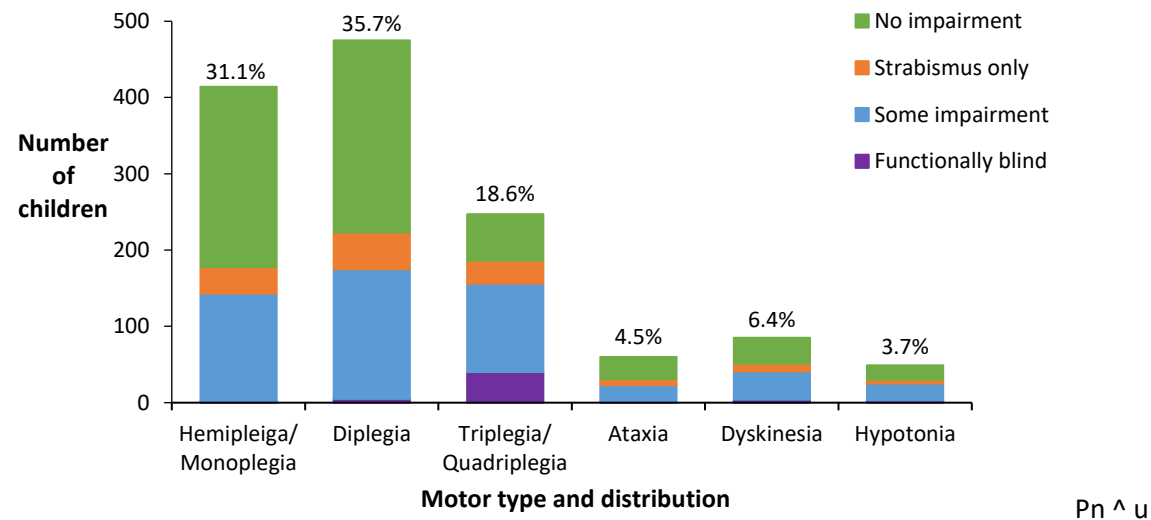
Vision status by GMFCS level

Figure 10a: Number of people with cerebral palsy, born 1993-2010, by GMFCS level and vision status



Vision status by motor type and distribution

Figure 10b: Number of people with cerebral palsy, born 1993-2010, by motor type and distribution and level and vision status



Hearing status

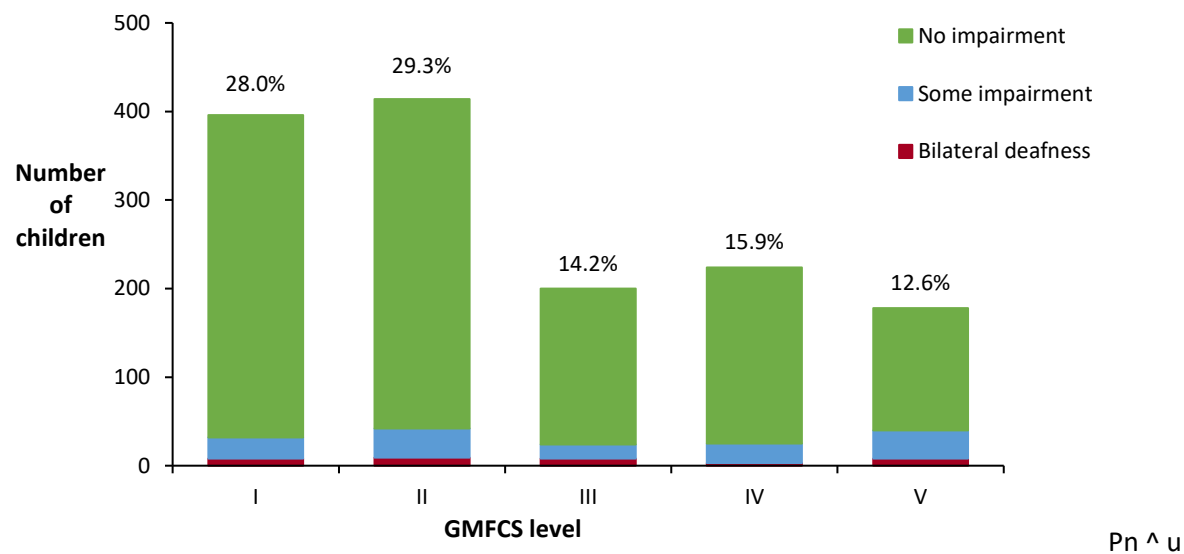
Table 11: Number of people with cerebral palsy by hearing status

Hearing Status	1993 n (%)	1994 n (%)	1995 n (%)	1996 n (%)	1997 n (%)	1998 n (%)	1999 n (%)	2000 n (%)	2001 n (%)	2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	Total n (%)
Bilateral Deafness	2 (3.9)	3 (5.1)	0 (0.0)	1 (1.0)	3 (3.7)	1 (1.3)	2 (2.4)	3 (3.7)	3 (4.3)	1 (1.3)	4 (4.8)	4 (4.3)	2 (2.2)	1 (1.2)	2 (1.8)	1 (1.0)	2 (2.9)	1 (1.6)	36 (2.5)
Some impairment	3 (5.9)	4 (6.8)	5 (7.4)	7 (7.1)	8 (9.9)	7 (9.2)	9 (10.7)	12 (14.8)	7 (10.1)	5 (6.7)	6 (7.2)	13 (14.1)	6 (6.6)	7 (8.3)	6 (5.5)	10 (9.9)	8 (11.4)	6 (9.8)	129 (9.0)
No impairment	46 (90.2)	52 (88.1)	63 (92.6)	90 (91.8)	70 (86.4)	68 (89.5)	73 (86.9)	66 (81.5)	59 (85.5)	69 (92.0)	73 (88.0)	75 (81.5)	83 (91.2)	76 (90.5)	101 (92.7)	90 (89.1)	60 (85.7)	54 (88.5)	1268 (88.5)
Total Known	51	59	68	98	81	76	84	81	69	75	83	92	91	84	109	101	70	61	1433
Unknown	8	12	13	7	14	4	7	16	10	8	16	17	11	4	4	8	7	24	190
Total	59	71	81	105	95	80	91	97	79	83	99	109	102	88	113	109	77	85	1623

Pn ^

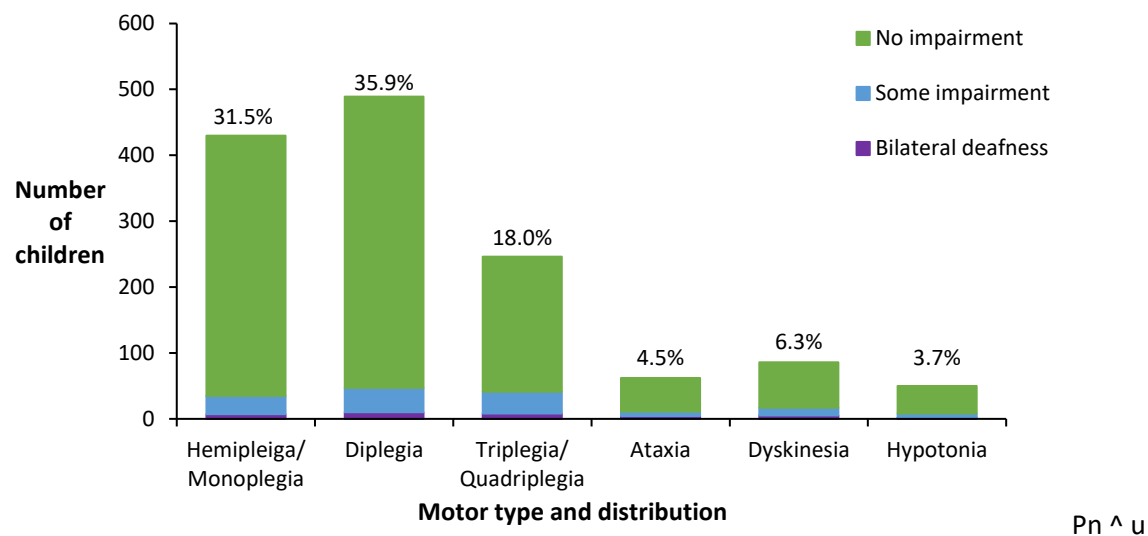
Hearing status by GMFCS level

Figure 11a: Number of people with cerebral palsy, born 1993-2010, by GMFCS level and hearing status



Hearing status by motor type and distribution

Figure 11b: Number of people with cerebral palsy, born 1993-2010, by motor type and distribution and level and hearing status



Intellectual status

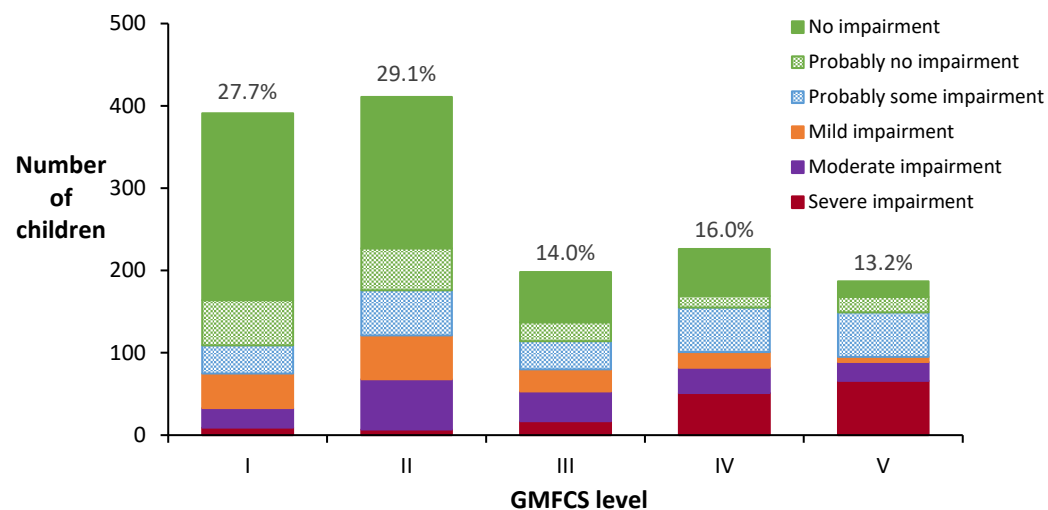
Table 12: Number and percentage of people with cerebral palsy by intellectual status

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Intellectual impairment	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Severe impairment	14 (26.4)	9 (15.3)	14 (20.0)	18 (18.0)	11 (13.8)	9 (12.0)	14 (16.3)	9 (11.0)	5 (7.2)	5 (6.8)	4 (4.9)	5 (5.4)	11 (12.4)	6 (7.2)	10 (9.3)	4 (4.0)	4 (5.6)	1 (1.8)	153 (10.7)
Moderate impairment	6 (11.3)	5 (8.5)	12 (17.1)	16 (16.0)	9 (11.3)	14 (18.7)	17 (19.8)	14 (17.1)	8 (11.6)	4 (5.5)	11 (13.6)	12 (12.9)	10 (11.2)	7 (8.4)	14 (13.0)	12 (11.9)	4 (5.6)	3 (5.3)	178 (12.4)
Mild impairment	2 (3.8)	5 (8.5)	8 (11.4)	17 (17.0)	14 (17.5)	10 (13.3)	4 (4.7)	9 (11.0)	15 (21.7)	7 (9.6)	14 (17.3)	6 (6.5)	4 (4.5)	8 (9.6)	10 (9.3)	9 (8.9)	4 (5.6)	1 (1.8)	147 (10.3)
Probably some impairment	5 (9.4)	10 (16.9)	8 (11.4)	15 (15.0)	13 (16.3)	10 (13.3)	12 (14.0)	18 (22.0)	14 (20.3)	15 (20.5)	15 (18.5)	19 (20.4)	10 (11.2)	13 (15.7)	18 (16.7)	10 (9.9)	16 (22.2)	12 (21.1)	233 (16.3)
Probably no impairment	3 (5.7)	7 (11.9)	9 (12.9)	6 (6.0)	4 (5.0)	7 (9.3)	9 (10.5)	6 (7.3)	8 (11.6)	9 (12.3)	14 (17.3)	19 (20.4)	11 (12.4)	9 (10.8)	8 (7.4)	16 (15.8)	6 (8.3)	14 (24.6)	165 (11.5)
No impairment	23 (43.4)	23 (39.0)	19 (27.1)	28 (28.0)	29 (36.3)	25 (33.3)	30 (34.9)	26 (31.7)	19 (27.5)	33 (45.2)	23 (28.4)	32 (34.4)	43 (48.3)	40 (48.2)	48 (44.4)	50 (49.5)	38 (52.8)	26 (45.6)	555 (38.8)
Total Known	53	59	70	100	80	75	86	82	69	73	81	93	89	83	108	101	72	57	1431
Unknown	6	12	11	5	15	5	5	15	10	10	18	16	13	5	5	8	5	28	192
Total n	59	71	81	105	95	80	91	97	79	83	99	109	102	88	113	109	77	85	1623

Pn ^

Intellectual status by GMFCS level

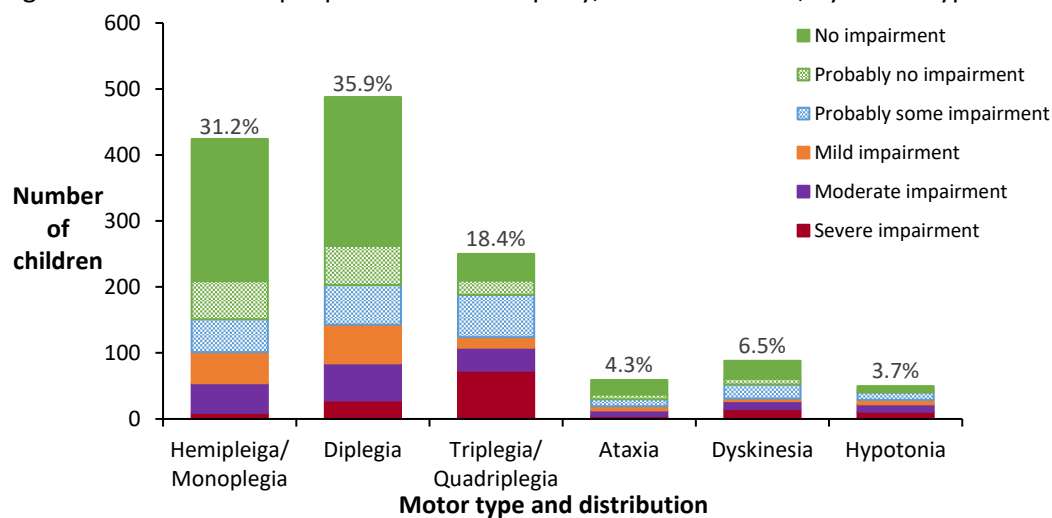
Figure 12a: Number of people with cerebral palsy, born 1993-2010, by GMFCS level and intellectual status



Pn ^ u

Intellectual status by motor type and distribution

Figure 12b: Number of people with cerebral palsy, born 1993-2010, by motor type and distribution and level and intellectual status



Pn ^ u

Speech status

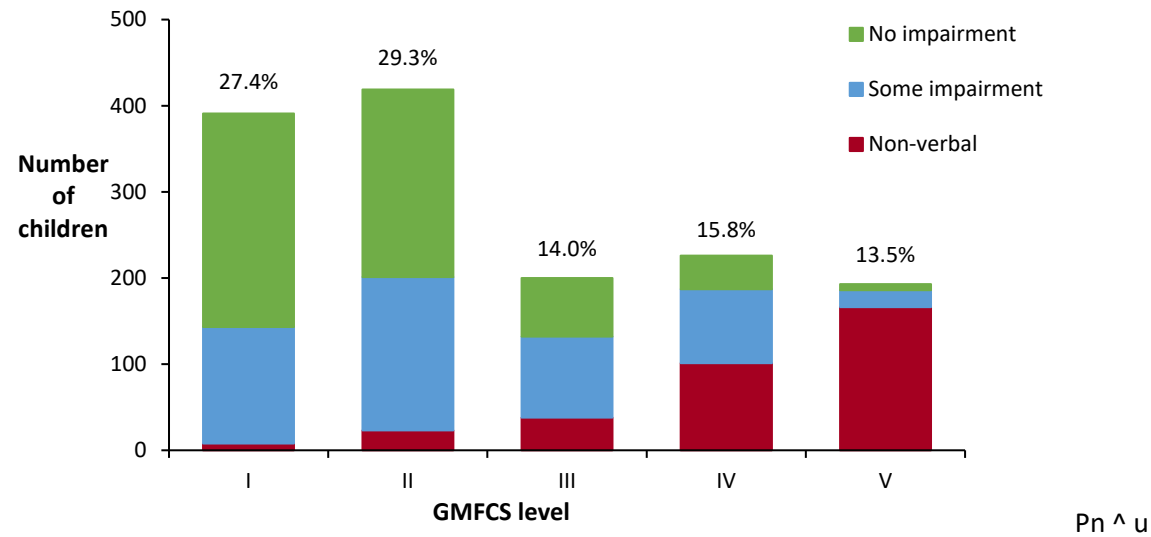
Table 13: Number and percentage of people with cerebral palsy by speech status

Speech Status	1993 n (%)	1994 n (%)	1995 n (%)	1996 n (%)	1997 n (%)	1998 n (%)	1999 n (%)	2000 n (%)	2001 n (%)	2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	Total n (%)
Non-verbal	20 (39.2)	17 (28.8)	18 (25.7)	27 (27.6)	12 (14.6)	17 (22.7)	18 (20.7)	21 (25.3)	17 (23.6)	17 (22.4)	18 (21.2)	20 (21.7)	15 (16.5)	17 (20.0)	38 (34.9)	20 (19.6)	15 (21.1)	12 (20.7)	339 (23.4)
Some impairment	13 (25.5)	17 (28.8)	30 (42.9)	30 (30.6)	34 (41.5)	26 (34.7)	31 (35.6)	22 (26.5)	33 (45.8)	23 (30.3)	30 (35.3)	38 (41.3)	32 (35.2)	33 (38.8)	32 (29.4)	41 (40.2)	29 (40.8)	25 (43.1)	519 (35.9)
No impairment	18 (35.3)	25 (42.4)	22 (31.4)	41 (41.8)	36 (43.9)	32 (42.7)	38 (43.7)	40 (48.2)	22 (30.6)	36 (47.4)	37 (43.5)	34 (37.0)	44 (48.4)	35 (41.2)	39 (35.8)	41 (40.2)	27 (38.0)	21 (36.2)	588 (40.7)
Total Known	51	59	70	98	82	75	87	83	72	76	85	92	91	85	109	102	71	58	1446
Unknown	8	12	11	7	13	5	4	14	7	7	14	17	11	3	4	7	6	27	177
Total	59	71	81	105	95	80	91	97	79	83	99	109	102	88	113	109	77	85	1623

Pn ^

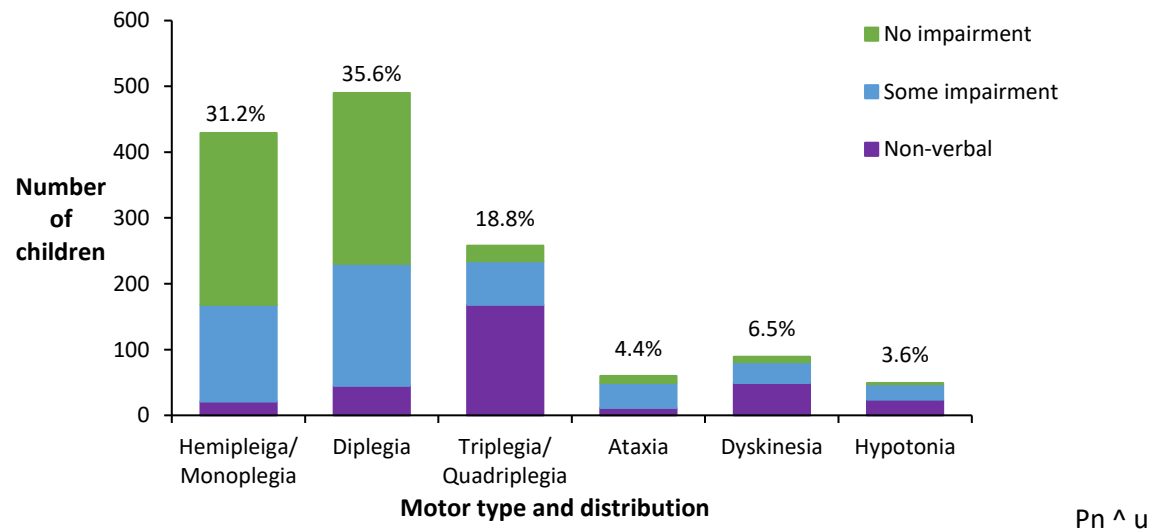
Speech status by GMFCS level

Figure 13a: Number of people with cerebral palsy, born 1993-2010, by GMFCS level and speech status



Speech status by motor type and distribution

Figure 13b: Number of people with cerebral palsy, born 1993-2010, by motor type and distribution and level and speech status



Epilepsy status

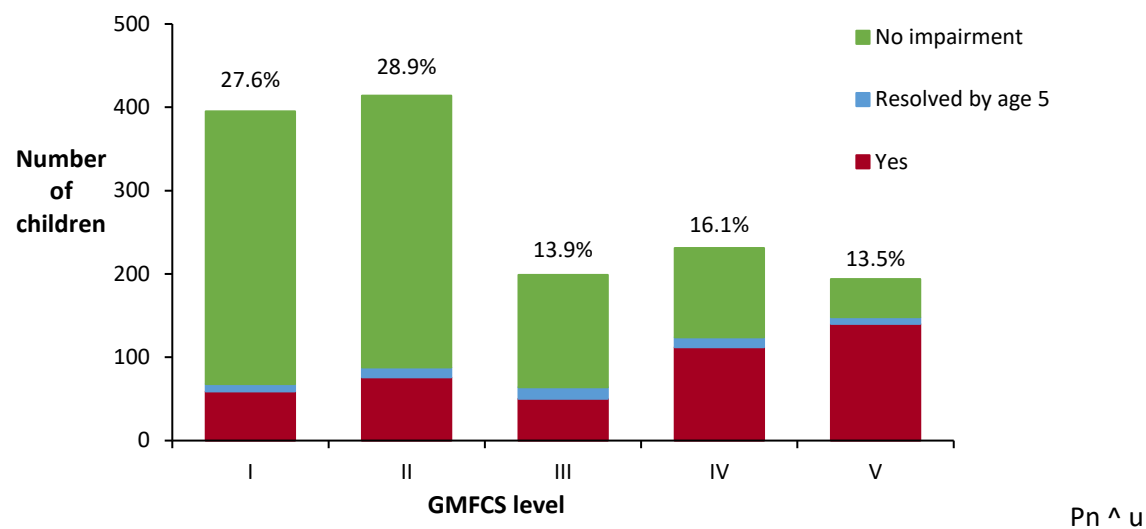
Table 14: Number and percentage of people with cerebral palsy by epilepsy status

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Epilepsy Status	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Yes	30 (56.6)	24 (42.1)	32 (45.1)	39 (39.4)	21 (25.6)	22 (28.9)	31 (36.5)	28 (33.7)	29 (39.7)	18 (23.4)	23 (26.7)	20 (20.6)	22 (24.2)	21 (24.7)	29 (26.9)	27 (26.2)	17 (23.9)	12 (20.3)	445 (30.6)
Resolved by age 5	2 (3.8)	2 (3.5)	1 (1.4)	5 (5.1)	5 (6.1)	4 (5.3)	3 (3.5)	8 (9.6)	0 (0.0)	3 (3.9)	1 (1.2)	4 (4.1)	1 (1.1)	4 (4.7)	5 (4.6)	4 (3.9)	2 (2.8)	3 (5.1)	57 (3.9)
No	21 (39.6)	31 (54.4)	38 (53.5)	55 (55.6)	56 (68.3)	50 (65.8)	51 (60.0)	47 (56.6)	44 (60.3)	56 (72.7)	62 (72.1)	73 (75.3)	68 (74.7)	60 (70.6)	74 (68.5)	72 (69.9)	52 (73.2)	44 (74.6)	954 (65.5)
Total Known	53	57	71	99	82	76	85	83	73	77	86	97	91	85	108	103	71	59	1456
Unknown	6	14	10	6	13	4	6	14	6	6	13	12	11	3	5	6	6	26	167
Total	59	71	81	105	95	80	91	97	79	83	99	109	102	88	113	109	77	85	1623

Pn ^

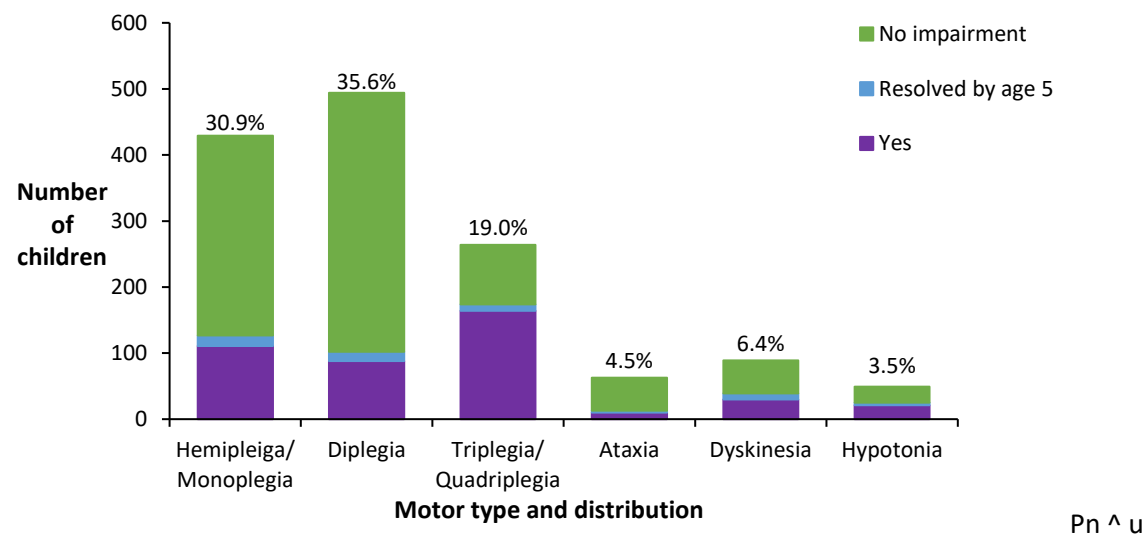
Epilepsy status by GMFCS level

Figure 14a: Number of people with cerebral palsy, born 1993-2010, by GMFCS level and epilepsy status



Epilepsy status by motor type and distribution

Figure 14b: Number of people with cerebral palsy, born 1993-2010, by motor type and distribution and level and epilepsy status

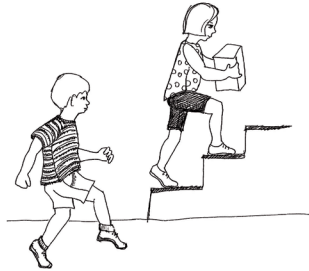


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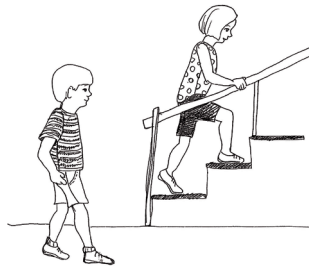
Appendix a

Gross motor function system for children aged 4-6 years - illustrations and descriptors



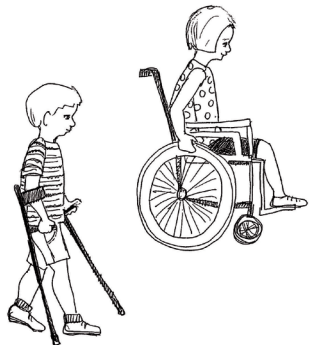
GMFCS Level I

Children get into and out of, and sit in, a chair without the need for hand support. Children move from the floor and from chair sitting to standing without the need for objects for support. Children walk indoors and outdoors, and climb stairs. Emerging ability to run and jump.



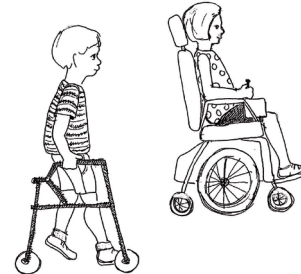
GMFCS Level II

Children sit in a chair with both hands free to manipulate objects. Children move from the floor to standing and from chair sitting to standing but often require a stable surface to push or pull up on with their arms. Children walk without the need for any assistive mobility device indoors and for short distances on level surfaces outdoors. Children climb stairs holding onto a railing but are unable to run or jump.



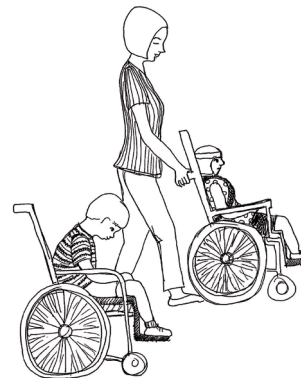
GMFCS Level III

Children sit on a regular chair but may require pelvic or trunk support to maximize hand function. Children move in and out of chair sitting using a stable surface to push on or pull up with their arms. Children walk with an assistive mobility device on level surfaces and climb stairs with assistance from an adult. Children frequently are transported when travelling for long distances or outdoors on uneven terrain.



GMFCS Level IV

Children sit on a chair but need adaptive seating for trunk control and to maximize hand function. Children move in and out of chair sitting with assistance from an adult or a stable surface to push or pull up on with their arms. Children may at best walk short distances with a walker and adult supervision but have difficulty turning and maintaining balance on uneven surfaces. Children are transported in the community. Children may achieve self-mobility using a power wheelchair.



GMFCS Level V

Physical impairments restrict voluntary control of movement and the ability to maintain antigravity head and trunk postures. All areas of motor function are limited. Functional limitations in sitting and standing are not fully compensated for through the use of adaptive equipment and assistive technology. At Level V, children have no means of independent mobility and are transported. Some children achieve self-mobility using a power wheelchair with extensive adaptations.

Contributors

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Mr Michael deLacy and Ms Christalla Louca

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