

Catalogue no. 89-654-X2018001
ISBN 978-0-660-27535-2

Canadian Survey on Disability

Canadian Survey on Disability, 2017: Concepts and Methods Guide

by Elisabeth Cloutier, Chantal Grondin and Amélie Lévesque

Release date: November 28, 2018



How to obtain more information

For information about this product or the wide range of services and data available from Statistics Canada, visit our website, www.statcan.gc.ca.

You can also contact us by

Email at STATCAN.infostats-infostats.STATCAN@canada.ca

Telephone, from Monday to Friday, 8:30 a.m. to 4:30 p.m., at the following numbers:

- | | |
|---|----------------|
| • Statistical Information Service | 1-800-263-1136 |
| • National telecommunications device for the hearing impaired | 1-800-363-7629 |
| • Fax line | 1-514-283-9350 |

Depository Services Program

- | | |
|------------------|----------------|
| • Inquiries line | 1-800-635-7943 |
| • Fax line | 1-800-565-7757 |

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, Statistics Canada has developed standards of service that its employees observe. To obtain a copy of these service standards, please contact Statistics Canada toll-free at 1-800-263-1136. The service standards are also published on www.statcan.gc.ca under "Contact us" > "[Standards of service to the public](#)."

Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued co-operation and goodwill.

Published by authority of the Minister responsible for Statistics Canada

© Her Majesty the Queen in Right of Canada as represented by the Minister of Industry, 2018

All rights reserved. Use of this publication is governed by the Statistics Canada [Open Licence Agreement](#).

An [HTML version](#) is also available.

Cette publication est aussi disponible en français.

Table of contents

1. Introduction	6
1.1 Survey overview	6
1.2 Background.....	7
1.3 A Caution to users.....	7
1.4 Purpose of the Concepts and Methods Guide	8
2. Survey content: Themes, concepts and questions.....	9
2.1 Disability Screening Questions (DSQ).....	9
2.2 Identifying persons with a disability: Ten disability types	9
2.3 Calculating disability rates in Canada.....	11
2.4 Measuring the severity of disabilities	11
2.5 Creating a portrait of Canadian adults with disabilities	13
2.6 Development and testing of thematic content.....	14
2.7 Questionnaire modules	15
2.8 Derived variables.....	17
2.9 Linked content from the 2016 Census.....	17
2.10 A special note about age data	19
2.11 Geographies.....	19
3. Sample design of the Canadian Survey on Disability	20
3.1 Target population and coverage.....	20
3.2 Reference period.....	22
3.3 Sampling frame created from the 2016 Census	22
3.4 Sample design	22
3.5 Estimation domains and stratification.....	23
3.6 Sample allocation.....	24
3.7 Sample sizes	25
3.8 The NO sample	25
4. Data collection.....	27
4.1 Time Frame	27
4.2 Communications	27
4.3 Mode of collection	27
4.4 Security of online survey questionnaires	28
4.5 Supervision and quality control.....	29
4.6 Proxy interviews.....	29
4.7 Special issues	30
4.8 Response rate.....	30
5. Data processing	32
5.1 Pre-processing: Data capture	32
5.2 Survey processing steps.....	32
5.3 Record clean up: In-scope and complete records.....	33
5.4 Recodes: Variable changes and multiple-response questions	34
5.5 Flow edits: Response paths, valid skips and question non-response	35
5.6 Coding	36

5.7 Consistency edits	37
5.8 Variable conversion	39
5.9 Derived variables	39
5.10 External census-linked variables	39
6. Weighting and creation of final data files	41
6.1 Weighting	41
6.2 File structure and content	45
6.3 Final datasets and data dictionaries	47
6.4 Guidelines for analysis	47
7. Data quality	48
7.1 Overview of data quality evaluation	48
7.2 Sampling errors and bootstrap method	48
7.3 Non-sampling errors	50
8. Differences between the 2017 and 2012 cycles of the Canadian Survey on Disability	52
8.1 New census filter questions	52
8.2 Changes to the CSD collection methods.....	52
8.3 Lag time between the 2016 Census and the 2017 CSD.....	53
8.4 Other methodological changes.....	53
8.5 Changes to CSD content	53
8.6 Summary and recommendation.....	54
9. Data dissemination.....	55
9.1 Data products and services	55
9.2 Reference products.....	55
9.3 Disclosure control	56
Appendix A – Flow chart of the 2017 CSD questionnaire modules	57
Appendix B – Identifying disability types	58
Seeing disabilities	58
Hearing disabilities	58
Mobility disabilities.....	59
Flexibility disabilities.....	60
Dexterity disabilities	60
Developmental disabilities	61
Mental health-related disabilities	61
Memory disabilities	62
Learning disabilities	62
Pain-related disabilities.....	63
Unknown disabilities	64
Appendix C – Disability severity indicators	65
Severity scores and classes.....	65
Score for each disability type.....	65
Special cases	66
Severity class for each disability type.....	66
Global score.....	66
Global severity class	67
Global score for persons without a disability in the CSD	67

Appendix D – Survey indicators by questionnaire module	68
The Canadian Survey on Disability, 2017.....	68
Appendix E – Employment equity questions.....	74
Persons who have a long-term disability	74
Disadvantage in employment.....	74
Perception.....	74
Accommodation.....	74
Appendix F – Coding: Extra categories created and standard classifications used	76
“Other – specify” questions: Extra response categories created	76
Other open-ended coding questions: New categories generated.....	76
Standard classifications used for the 2017 CSD	78
Appendix G – How to obtain key supporting documents	80
Documents available on Statistics Canada Website.....	80
Documents available in the Research Data Centres (RDC)	80
Documents from Statistics Canada Client Services or call 1-800-263-1136	80
Information about Real Time Remote Access (RTRA) system.....	80
References	81

Canadian Survey on Disability, 2017: Concepts and Methods Guide

by Elisabeth Cloutier, Chantal Grondin and Amélie Lévesque

1. Introduction

1.1 Survey overview

The 2017 Canadian Survey on Disability (CSD) is a national survey of Canadians aged 15 and over whose everyday activities are limited because of a long-term condition or health-related problem. The CSD was developed by Statistics Canada in collaboration with Employment and Social Development Canada (ESDC). Input for the survey was also obtained from the ESDC Persons with Disabilities Technical Advisory Group which consists of experts in the field of disability, including academics and representatives from various community associations across Canada. The survey was conducted from March 1 to August 31, 2017.

The CSD is based on a social model of disabilities. The premise of the social model is that disability is the result of the interaction between a person's functional limitations and barriers in the environment, including social and physical barriers that make it harder to function day-to-day. Thus, disability is a social disadvantage that an unsupportive environment imposes on top of an individual's impairment (Mackenzie et al, 2009).

The 2017 CSD provides a range of data on 10 different disability types, focusing on activity limitations related to hearing, vision, mobility, flexibility, dexterity, pain, learning, mental health, memory and developmental disabilities.¹ Different levels of severity are also measured. The survey includes data on the use of aids and assistive devices, daily help received or required by respondents, and the use of various therapies and social service supports. Survey content also addresses the education and employment experiences of persons with disabilities. Requirements and unmet needs for accommodations in these areas are included. Detailed indicators of labour market participation are captured as well as data related to labour force discrimination. Sources of income are also included. In addition, information on Internet usage and methods used to access government services are measured. Data for veterans of the Canadian Armed Forces with disabilities will also be available for the first time on the 2017 CSD.

Data from the CSD will provide an evidence-based foundation to serve disability and social policy analysts at all levels of government, as well as associations for persons with disabilities and researchers working in the field of disability policy and programs. The CSD will be used to plan and evaluate services, programs and policies for Canadian adults with disabilities to help enable their full participation in society. In particular, this information on adults with disabilities is essential for the effective development and operation of the Employment Equity Program. Data on disability are also used to fulfill Canada's obligations relating to the United Nations Convention on the Rights of Persons with Disabilities.

The 2017 CSD was based on a sample of persons who reported having a long-term condition or difficulty on the Activities of Daily Living question from the 2016 Census long-form questionnaire, and who were 15 years of age or older as of the date of the Census, May 10, 2016. Since the census excludes the institutionalized population and those living in other collective dwellings, such as Canadian Armed Forces bases, the CSD only covers persons living in private dwellings in Canada. Also, for operational reasons, the population living on First Nation reserves is excluded. Total sample size for the CSD was approximately 50,000² individuals. The overall collection response rate was 69.5%. The CSD provides reliable data on persons with disabilities for each province and territory in Canada and by age group.

1. An additional "unknown" type is included.

2. An additional sample of 5,000 persons was selected for internal research purposes, but their data will not be made available.

1.2 Background

Data on disability in Canada have been collected for over 35 years, reflecting an evolving recognition of the importance of data to support the goal of full participation of persons with disabilities. Concepts and methods used in the production of data on disability have also evolved over time. The first survey on disability in Canada was conducted in 1981, the International Year of the Disabled, shortly after the Canadian Parliamentary Committee on the Disabled and the Handicapped published its report entitled “Obstacles”. Among the report’s 130 recommendations was that Statistics Canada produce data on persons with disabilities. This recommendation read, in part:

“ ... that the Federal Government direct Statistics Canada to give a high priority to the development and implementation of a long-term strategy which will generate comprehensive data on disabled persons in Canada, using population-based surveys and program data.”

This launched the Canadian Health and Disability Survey, which was conducted as a supplement to the October 1983 and June 1984 Labour Force Survey. In addition, the 1986 Census included a question about activity limitations that would help to identify persons who were likely to have a disability. Later that year, Statistics Canada used that census information to select a sample for the Health and Activity Limitation Survey (HALS), making it the first post-censal survey on disability. The 1986 HALS served to identify Canadians with disabilities and also to determine the limitations they experienced and the barriers they faced. A second HALS took place in 1991.

In 1996, no post-censal survey was conducted. However, in 1998, the federal, provincial and territorial governments released their common disability framework, *In Unison*, calling for the promotion of greater inclusion of persons with disabilities in all aspects of Canadian society. Their 1998 report noted the importance of developing a reliable statistical database on disability and underlined the key role survey data would play in supporting policy development and research in this area.

In 2001, the International Classification of Functioning, Disability and Health (ICF), was approved by all World Health Organization (WHO) member states, including Canada. The ICF defined disability as the relationship between body structures and functions, daily activities and social participation, while recognizing the role of environmental factors. Influenced by this new definition of disability driven by a social model approach, the HALS was redesigned³ and renamed as the Participation and Activity Limitations Survey (PALS). PALS was conducted in 2001 and 2006. The new name reflected the fact that the new survey would increase the focus on the participation of persons with activity limitations. Once again, it was conducted as a post-censal survey on disability, using census information to create a sampling frame. As with HALS, PALS was a joint effort by Statistics Canada and Employment and Social Development Canada (known in 2006 as Human Resources and Social Development Canada).

In 2010, Canada ratified the United Nations Convention on the Rights of Persons with Disabilities. In keeping with Article 31 on Statistics and Data Collection, ESDC launched the New Disability Data Strategy and began developing a new set of questions to identify persons with disabilities, called the Disability Screening Questions (DSQ). The DSQ sought to move more fully towards the social model of disability, to achieve greater consistency in disability identification by type, and to improve coverage of the full range of disability types, especially disabilities related to mental health, development, learning and memory. The DSQ instrument was extensively tested qualitatively and quantitatively and then used for the first time to identify adults with a disability on the 2012 CSD. The CSD provided a portrait of adult Canadians with disabilities in relation to their participation in society. A second CSD has now been conducted in 2017, continuing with the DSQ framework for the measurement of disability in Canada. It also continues in the tradition of a post-censal survey conducted on a five-year cycle.

1.3 A Caution to users

Improvements were made to the methodology of the 2017 CSD which affect time series comparability with 2012 CSD data. Changes allowed the full implementation of the Disability Screening Questions (DSQ) for identifying persons with disabilities. In 2016, the Activities of Daily Living questions on the census, which serve to create the sampling frame for the CSD, were replaced by new filter questions taken from the DSQ framework. Qualitative

3. For more details on the survey’s redesign, see Grondin (2016).

and quantitative testing have shown that the new filter questions allow for better coverage overall of persons with disabilities, and especially of persons with disability types that are less visible, such as disabilities related to pain, memory, learning, development and mental health.

Because of these important changes, it is neither possible nor recommended to compare disability data over time between the 2012 and 2017 CSD. Any attempts at comparison will be considered invalid. A more in-depth discussion of these changes and their significance is provided in Chapter 8.

1.4 Purpose of the Concepts and Methods Guide

This Concepts and Methods Guide is intended to provide an understanding of the 2017 CSD with respect to its subject-matter content and its methodological approaches. It is designed to assist CSD data users by serving as a guide to the concepts and questions used in the survey as well as the technical details of survey design, data collection and data processing. The guide provides helpful information on how to use and interpret survey results. Its discussion of data quality also allows users to review the strengths and limitations of the data for their particular needs.

Chapter 1 of this guide provides an overview of the 2017 CSD by introducing the survey's background and objectives. Chapter 2 discusses the survey's content, explaining the key concepts and definitions used for the survey. This chapter introduces the CSD questionnaire modules as well as data linkages with the 2016 Census. Chapters 3 to 6 cover important aspects of the survey methodology, from sampling design, through data collection and processing and ending in the creation of final data files. Chapters 7 and 8 cover issues of data quality and caution users against making comparisons with data from the 2012 CSD. Chapter 9 outlines 2017 survey products that are more widely available to the public, including CSD data tables, an infographic, an analytical article, a short sign-language video and reference material. Appendices provide more detail on the questionnaire modules, the measurement of disability types and the disability severity score, questions used for assessing employment equity, supplementary coding categories for the survey and standard classifications used. Links to other key supporting documents for the CSD are also provided.

2. Survey content: Themes, concepts and questions

The Canadian Survey on Disability (CSD) involves a comprehensive set of modules designed to provide a detailed portrait of persons aged 15 years and over with disabilities in Canada. The survey begins with a set of questions designed to identify respondents with a disability, their disability type and level of severity. Respondents who were identified as having one or more disabilities received subsequent modules, which included many indicators of social and economic participation as well as the types of supports and barriers encountered in the social and physical environment. New areas of survey content were added for the 2017 CSD to address emerging data needs, such as the use of various therapies and social service supports, modes of accessing government services, Internet use and data on veterans of the Canadian Armed Forces with disabilities. New content was implemented following consultation and testing protocols. A complete flow chart of the 2017 CSD questionnaire modules is presented in Appendix A.

2.1 Disability Screening Questions (DSQ)

The first component of the CSD is a questionnaire module called the Disability Screening Questions (DSQ). The DSQ involve a rigorous set of questions which are used to identify respondents with a disability. They identify ten distinct disability types and allow for the computation of a severity score for each disability type, as well as an overall severity score. The DSQ form the basis for calculating rates of disability across Canada among persons aged 15 years and over.

The DSQ were originally developed as part of Employment and Social Development Canada's (ESDC) New Disability Data Strategy of 2010. At that time efforts were initiated to create a new comprehensive instrument for the identification of persons with disabilities which moved more fully towards the social model of disability and improved the coverage of the full range of disability types. The DSQ were developed over a two-year period from 2010 to 2012. The questions were drafted following an extensive review of existing disability indicators used in Canada and internationally. Development involved several rounds of qualitative testing conducted to ensure the validity of each question. This was followed by two major quantitative tests, one with the Labour Force Survey and the other with the Canadian Community Health Survey, to assess the reliability of the DSQ on surveys with very different contexts. These tests established the reliability and the validity of the DSQ as an instrument for estimating the prevalence of disability in the adult population.⁴ For a full discussion of the development of this measure, see [Grondin \(2016\)](#).

The DSQ were first used on the 2012 CSD. For the 2017 CSD, most questions remained unchanged. The only significant change to the DSQ for 2017 involved the addition of questions for each disability type related to the age at which the difficulty or condition began (onset) and the age at which activity limitations began. Otherwise, the DSQ were only slightly modified, primarily to adapt to an Internet-based questionnaire environment, reflecting new data collection methods used in 2017 (see Chapter 4 for details on data collection). Qualitative testing of all changes to the 2017 CSD questionnaire was conducted across the country, in both English and French, in 2015 and 2016. The full set⁵ of questions for the [2017 DSQ module](#) as well as all CSD modules can be viewed on the Statistics Canada website.

2.2 Identifying persons with a disability: Ten disability types

The DSQ follow the social model of disability and require that a limitation in daily activities be reported for the identification of a disability—the presence of a difficulty alone is not sufficient. To identify persons with a disability, the DSQ first measure the degree to which difficulties are experienced across various domains of functioning and then ask how often daily activities are limited by these difficulties. Only persons who report a limitation in their day-to-day activities are identified as having a disability.

4. The DSQ were specifically developed for the measurement of disability among adult Canadians but have not yet been tested for use with children.

5. Note that the first six questions appearing at the beginning of the CSD questionnaire (DSQ_Q005 to DSQ_Q030) were only asked to a test sample of persons for methodological research purposes exclusively. These test data will not be included in the CSD data files. These questions replicate filter questions appearing in the Activities of Daily Living section of the 2016 Census long-form questionnaire, which are discussed in detail in Chapter 3 in the context of the CSD sampling design.

The DSQ use screener questions to comprehensively identify ten distinct disability types and to quantify the severity level of each type. Screening questions emphasize consistency of measurement across the disability types, including the presence of a long-term condition or health-problem lasting or expected to last six months or more.

The DSQ cover the following ten disability types:⁶

1. Seeing
2. Hearing
3. Mobility
4. Flexibility
5. Dexterity
6. Pain-related
7. Learning
8. Developmental
9. Mental health-related
10. Memory

The DSQ also contain a question concerning any other health problem or condition that has lasted or is expected to last for six months or more. This question is meant to be a catch-all in case the 10 disability types did not cover the respondent's situation. This question is associated with an 11th "unknown" disability type. That is, when respondents reported this other limitation but did not report any of the 10 disability types already captured by the DSQ, they were identified as having an "unknown" disability. Where there was both a limitation under one of the 10 known types and an "other" limitation, the latter was ignored.⁷

Operational definition of a disability for the CSD

For each of the 10 disability types, the DSQ always have at least one question on the associated level of difficulty ("No difficulty", "Some difficulty", "A lot of difficulty", or "Cannot do") and a question on the frequency of the limitation of daily activities ("Never", "Rarely", "Sometimes", "Often", or "Always"). To meet the definition of a disability for a particular type, the frequency for the corresponding limitation in daily activities must be "Sometimes", "Often" or "Always" or, for persons who report being "Rarely" limited, it must be combined with a difficulty level of "A lot of difficulty" or "Cannot do".

Table 2.1 below summarizes the combination of answers to the DSQ that are generally used to identify a disability. This approach applies to the majority of disability types measured on the DSQ.

Table 2.1
Combination of answers on the Disability Screening Questions that were used to identify a disability

How much difficulty do you have...?	How often are your daily activities limited by...?				
	Never	Rarely	Sometimes	Often	Always
No difficulty	No disability	No disability	Disability	Disability	Disability
Some difficulty	No disability	No disability	Disability	Disability	Disability
A lot of difficulty	No disability	Disability	Disability	Disability	Disability
Cannot do at all	No disability	Disability	Disability	Disability	Disability

Source: Statistics Canada, Canadian Survey on Disability, 2017.

6. The DSQ do not cover "Communication" disabilities. Questions to identify persons with a Communication disability were tested during qualitative interviews when the DSQ was developed and did not work as expected, owing largely to the evolving nature of communication, notably, the growing importance and use of social media and technology. However, respondents with a communication disability may report having another health problem or long-term condition that has lasted or is expected to last for six months or more (DSQ_Q290).
7. A decision was made to ignore the "other limitation" when there was already a limitation under one of the 10 disability types because it was observed that respondents with a disability that fell under one of the 10 types tended to report the disease that caused their disability in this "other limitation" question. In such cases, the "other limitation" was known and already reported.

It should be noted that in some situations, these criteria were modified. In particular, a person who reports having a developmental disorder is identified as disabled if the respondent has been diagnosed with this condition, regardless of the level of difficulty or the frequency of the activity limitation reported.

Another noteworthy exception is the “unknown” type, where the level of difficulty is not asked. A person will be identified with an “unknown” disability only if he or she reports being limited in terms of daily activities “sometimes”, “often” or “always” because of another health problem or condition not previously identified and if he or she has not reported any limitation under the 10 previous disability types.

Lastly, for disabilities involving seeing, hearing, mobility, flexibility and dexterity, which are measured with task-based questions, a response of “no difficulty” results in skipping the follow-up question on daily activity limitations. Thus, all “no difficulty” responses for these disability types are classified as “no disability”.

For full details on the specific questions and classification used for each disability type, see Appendix B.

2.3 Calculating disability rates in Canada

One of the primary objectives of the 2017 CSD is to produce disability rates among adults in Canada. These can be calculated by province and territory, for example, or by age group. Disability rates are calculated with the following formula:

$$\text{(Persons with a disability / (Persons with a disability + Persons without a disability))} \times 100$$

In order to provide such statistics, the methodology of the CSD required not only identifying persons with a disability but also producing estimates of the number of persons without a disability in Canada. Thus, the CSD drew two distinct samples of persons from the 2016 Census of Population:

1. Those who were filtered in by the census question on Activities of Daily Living (called the YES sample) and who would proceed through the DSQ in the CSD to determine if they have a disability, and
2. Those who were filtered out by the census question on Activities of Daily Living (called the NO sample) and who were automatically considered persons without a disability.

Details about these methods are provided in Chapter 3 of this guide.

2.4 Measuring the severity of disabilities

Usefulness of a severity score⁸

It is clear from previous research using the 2012 Canadian Survey on Disability that disability severity is a strong predictor of the reduced participation of people with disabilities, particularly in the domain of economic activity (Till et al., 2015; Arim, 2015; Turcotte, 2014). People with severe or very severe disabilities are less likely to participate in the labour force, for example, or to hold a university degree. Those with severe or very severe disabilities are also more likely to be in need of supports and services, such as aids, devices, caregiving, specialized public transportation and income supports.

The inclusion of disability severity is thus an important consideration in analyses of the participation of people with disabilities. The ready-to-use and consistent disability severity score and severity classes included in the CSD data files enable analysts to develop more accurate inferences about the situation currently faced by persons with disabilities. Researchers involved in disability policy can also use these important analytical variables for developing policies and programs to help persons with disabilities.

8. The terms “severity score” and “severity indicator” are used interchangeably in this guide as they have identical meanings.

The Severity Score

The severity score developed using the Disability Screening Questions (DSQ) reflects the social model of disability. In addition to taking a person's level of functional difficulty into account, this model also considers their subjective assessment of the impact of these difficulties on their daily activities.

For each of the 10 disability types,⁹ a score is assigned using a scoring grid that takes into account both the intensity of the difficulties (no difficulty, some difficulty, a lot of difficulty, or cannot do) and the frequency of the activity limitations (never, rarely, sometimes, often, or always). If a person does not have a particular type of disability, a value of zero is assigned to the score for that disability type; in cases where a particular type of disability is identified, the score for that disability type increases with the level of difficulty and the frequency of the limitation.

A global severity score is then derived based on the scores calculated for all disability types. A person's global severity score is calculated by taking the average of the scores for the 10 disability types¹⁰ (i.e., the 10 scores are summed and divided by 10). Consequently, the more types of disability a person has, the higher his or her global score will be.

Severity classes

To make the severity score for each disability type easier to use, severity classes were established for each disability type.

The following severity classes apply to the score for each disability type:

- 1 = Less severe disability
- 2 = More severe disability

Four severity classes have been established for the global score that takes the 10 disability types into account:

- 1 = mild disability
- 2 = moderate disability
- 3 = severe disability
- 4 = very severe disability

It is important to understand that the name assigned to each class is simply intended to facilitate its use. It is not a label or judgement concerning the person's level of disability. In other words, the classes should be interpreted as follows: people in class 1 have a less severe disability than people in class 2; people in class 2 have a less severe disability than people in class 3; and people in class 3 have a less severe disability than people in class 4.

The breakdown of persons with a disability across the four severity classes (based on global score, taking into account all disability types) is shown in the table below.

Table 2.2
Distribution of persons with a disability, by severity class, Canada

Severity class	Persons with a disability	
	number	percent
Class 1 = mild	2,324,430	37.2
Class 2 = moderate	1,242,910	19.9
Class 3 = severe	1,295,660	20.7
Class 4 = very severe	1,383,630	22.2

Source: Statistics Canada, Canadian Survey on Disability, 2017.

For additional information on the methods used to derive severity scores and severity classes, see Appendix C.

9. A score is also assigned to the Unknown type.

10. People who reported no disability for the 10 types, but reported another health problem or condition (i.e., "unknown" type) have a global score equal to the score for the "unknown" type divided by 10.

2.5 Creating a portrait of Canadian adults with disabilities

In addition to the DSQ, which identify disability types and severity, a further set of 45 questionnaire modules were developed for the more comprehensive Canadian Survey on Disability (CSD). The overall content of the 2017 CSD represents hundreds of indicators across many spheres of functioning and participation, allowing for an in-depth picture of the issues affecting Canadian adults with disabilities (see detailed description of survey indicators in Appendix D).

The survey included the following broad themes:

Disability characteristics

Survey measures included a range of important questions related to characteristics of basic functioning and impairment, including the age at which the difficulty or condition began (onset) and the age at which activity limitations began for each disability type and the main underlying medical conditions.

Supports and barriers

Other priority measures for 2017 involved the types of supports that persons with disabilities are using to overcome their functional challenges. An extensive set of questions was asked about aids and assistive devices, medications and support services for daily living. New for 2017 were questions on the use of various therapies and social service supports, modes of accessing government services and Internet use in general. Gaps in support and the specific types of barriers encountered in trying to get needed help were also captured on the survey, including the situation of being housebound. Other indicators included financial supports through various sources of personal income, including disability-related income sources such as Canada Pension Plan (CPP) and Quebec Pension Plan (QPP) Disability benefits and private or employment-related disability insurance plans.

Education

Representing core data needs were questions on the educational experiences of adults with disabilities. Education indicators included current school attendance, highest level of schooling achieved and major field of study. Detailed questions also examined requirements for accommodations at school, unmet needs and other barriers encountered while acquiring an education, including additional expenses, extra completion time needed and any experiences of social exclusion or bullying.

Employment

In relation to employment as a core theme for the survey, many labour force participation details were measured, such as industry, occupation and hours of work, experiences of unemployment or being completely prevented from working and retirement details. Several new employment-related indicators were added for 2017, such as job search methods, labour mobility and reasons for self-employment. Survey indicators also examined the barriers faced by persons with disabilities in relation to employment, accommodations needed, unmet needs and labour force discrimination that may have been encountered.

In addition, veterans of the Canadian Armed Forces with disabilities were identified for the first time on the CSD, allowing a portrait of disability among the men and women who have provided Canadian military service.

The CSD also serves as a benchmark on issues of employment equity for persons with disabilities in Canada, as compared to the overall Canadian population. The survey allows for the identification of persons with a disability who meet the specific criteria in the 1995 *Employment Equity Act*. These criteria are outlined in Appendix E, along with the specific survey questions used to fulfill the Employment Equity definitional criteria.

More details on survey content are provided in sections 2.7 to 2.11 as well as in Appendices A to F. Section 8.6 provides a summary of the major changes to CSD content from the 2012 cycle to 2017.

2.6 Development and testing of thematic content

The development of thematic content for the 2017 CSD began with an in-depth review of 2012 CSD content. Detailed feedback was collected from CSD methodologists, analysts, research data centre users, survey developers and managers from both Statistics Canada and ESDC who had experience in working with the 2012 CSD. ESDC's Persons with Disabilities Technical Advisory Group also provided input. Findings from this consultative process formed the basis for new content development for the 2017 survey as well as improvements to content areas carried forward from 2012.

Once 2017 priorities were established, survey indicators were drawn from a number of sources. The 2012 CSD was the primary source, as many questions continued to be relevant for disability research. Several standardized and well-established measures used on other Statistics Canada surveys were added to the questionnaire, including general health questions and labour force activity modules. This content was modified as needed for the CSD context. New areas of survey content for the 2017 CSD involved several original questions developed in consultation with specialized sources, including Veterans Affairs Canada and Service Canada. Canada Mortgage and Housing Corporation also provided valuable input. The specific source for each survey question is specified in the 2017 CSD Data Dictionary.

The CSD questionnaire was adapted to a new data collection system implemented for 2017. For the first time, questions in the 2017 CSD were designed for use in an Internet-based electronic questionnaire (EQ). Electronic questionnaires are designed as a set of user-friendly and accessible screens that can be navigated online. In terms of content, the EQ sometimes required minor adaptations in the question wording and format from their previous versions developed in a Computer-Assisted Telephone Interview (CATI) environment. For example, former interviewer instructions were converted to on-screen help text.

In order to evaluate the new electronic questionnaire for the CSD, a series of testing operations were undertaken over a 15-month period. This involved both content-focused assessments of question wording and flows as well as technical testing of the new EQ survey application. Initial qualitative pretesting of a draft paper questionnaire was conducted from November 2015 to January 2016. This involved 47 in-depth cognitive interviews in both English and French, in four locations across Canada. Results of testing led to recommendations for improvements to the wording of questions, instructions and response categories, as well as to the flow of the questionnaire. This led to the building and preliminary in-house testing of the EQ application, involving rigorous protocols for quality assurance. The next step involved the formal technical test of the EQ application, which took place in September of 2016 across three different cities. This test evaluated the functionality of the system through observations of respondents as they navigated through the survey screens and through cognitive interviews to analyze their experience with the application. Both the self-reporting format (rEQ) and the interviewer-led format (iEQ) were tested in both English and French. Results were positive overall, with some additional modifications required, mostly to skip pattern flows and some question wording. A final period of internal acceptance testing was conducted, involving modular and integrated testing of the survey. The final sign-off of the survey modules was completed in December 2016.

One final step was taken with respect to content development for the 2017 CSD: an in-depth review of 2016 Census variables for their potential analytical contribution to the CSD dataset through record linkage. Since the 2017 CSD drew its sample from the 2016 Census (see Chapter 3 for details), relevant information from the census could be combined with information provided during the 2017 CSD interview. This approach reduced the number of questions that needed to be asked on the CSD and provided for a richer portrait of persons with disabilities for CSD data users. These variables also allow users to compare persons with and without disabilities. Over 600 census variables covering 13 distinct subject matter areas were reviewed for potential linkage. Selection of the final census variables for linkage with the CSD (approximately 300) was based on extensive consultations with census subject matter specialists, disability policy researchers, CSD analysts, methodologists and client services experts.

2.7 Questionnaire modules

Listed below are the questionnaire modules found on the 2017 CSD. A full flow chart of the modules is presented in Appendix A and more detailed information about the survey indicators within each module is provided in Appendix D. The complete [2017 Canadian Survey on Disability](#) questionnaire can be found on the Statistics Canada website.

The Canadian Survey on Disability – 2017

Introduction – Getting started

- Purpose of the survey and its voluntary nature
- Explanation of data linkage with the 2016 Census
- Identification of respondent or proxy

Disability screening questions

- Six filter questions for internal testing purposes only (see footnote 5, section 2.1)
- Disability screening questions for each disability type
- Age at which the difficulty or condition began (onset) and the age at which activity limitations began for each disability type

Episodic disabilities

Main condition

Aids and assistive devices

Respondents are streamed through different aids and assistive devices modules based on their disability type(s), as identified in the disability screening questions.

- Aids and assistive devices for hearing disabilities
- Aids and assistive devices for seeing disabilities
- Aids and assistive devices for mobility and agility (flexibility and dexterity) disabilities
- Aids and assistive devices for learning and developmental disabilities
- Aids and assistive devices for all disability types

Medication use

Help received

- Help received with everyday activities
- Areas of unmet needs for everyday help

Health care services

- Use of various health care therapies and social support services
- Unmet needs for these therapies and services

Education

- School attendance—recent and past
- Educational experiences related to disability (accommodations and unmet needs)
- Educational background pertaining to highest level of schooling

Employment

Respondents are streamed through different employment modules based on whether they are currently employed, unemployed or outside of the labour force, as determined by the first two modules.

All groups

- ▶ Labour market activities
- ▶ Labour force status

For employed population

- ▶ Class of worker
- ▶ Self-employed
- ▶ Job tenure
- ▶ Industry
- ▶ Occupation
- ▶ Workplace
- ▶ Usual hours of work
- ▶ Part-time employment
- ▶ Permanent work
- ▶ Periods of unemployment
- ▶ Employment details

For unemployed population

- ▶ Looking for work
- ▶ Past job attachment
- ▶ Unemployed details
- ▶ Periods of employment
- ▶ Labour mobility

For population not in the labour force

- ▶ Past job attachment
- ▶ Not in the labour force details
- ▶ Labour market attachment
- ▶ Periods of employment
- ▶ Labour mobility

All groups

- ▶ Classification of retirement
- ▶ Retirement details
- ▶ Workplace training
- ▶ Employment modifications
- ▶ Labour force discrimination

General health

Housebound

Veterans

Internet use

Accessibility of government services

Sources of income

In addition to information on the questionnaire indicators in Appendix D, Appendix E lists the specific survey questions used to fulfill the *Employment Equity Act* definitional criteria, and Appendix F lists the extra question categories created during survey coding as well as the standard classifications used to create indicators for open-ended survey questions.

A comprehensive description of all the variables available from the survey data is provided in the 2017 CSD Data Dictionaries (codebooks). For details on how to obtain the data dictionaries, contact Statistics Canada [Client Services](#) or call 1-800-263-1136.

2.8 Derived variables

In order to facilitate more in-depth analysis of the rich CSD dataset, over 130 derived variables (DVs) were created by regrouping or combining answers from one or more questions on the questionnaire.

A wide array of DVs were developed to capture the core disability indicators arising from the CSD's disability screening questions. These DVs included indicators of disability status and disability type, based on definitions used for the CSD (see section 2.2 for survey definitions of disability). DVs were also created to capture disability severity ratings and classes across disability types. In addition, the age of onset of each type of difficulty or condition, the age of limitation for each disability type, and the difference between these two ages for respondents were grouped into five-year age groups to facilitate use of these new data indicators.

Other DVs were created to facilitate use of the broad range of indicators for creating a portrait of adults with disabilities in Canada and their participation in society. These included DVs on the use of assistive devices, help needed with daily activities, needs for various health care therapies and social services, and areas of unmet needs for support with everyday activities. Several DVs reflected the coding of variables to standard classification systems at different levels of detail (official series and subseries levels). These included DVs for the International Classification of Diseases, the Classification of Instructional Programs, the North American Industry Classification System, and the National Occupational Classification. Other important educational and labour force concepts were also captured by DVs, such as school attendance status, labour force status, and full-time or part-time employment status. Finally, DVs on veterans of the Canadian Armed Forces were developed for users.

2.9 Linked content from the 2016 Census

The CSD draws its sample from 2016 Census respondents (see Chapter 3 for details). At the outset of the 2017 CSD interview, all respondents were told about the plans to link the CSD survey data with the information that they provided on the census. All linked information is kept confidential and used for statistical purposes only.

The specific benefits of a CSD-Census record linkage are reduced response burden for the target population of the CSD, access to useful information to adjust survey weights for non-response, which is crucial to providing valid estimates, and the creation of a comprehensive microdata file on persons with disabilities in Canada. Together, data from these two sources provide a detailed statistical portrait of persons with disabilities in Canada—data which are not available from any other source.

As explained in more detail in Chapter 3, the CSD also drew a sample of persons without a disability from the census to be added to the survey database. Census linkage thus allows data users to compare characteristics of persons with a disability and persons without a disability.

Approximately 300 census variables covering 15 distinct subject matter areas were selected and linked to the final CSD file for 2017, both for persons with a disability and for persons without a disability. These areas ranged from socio-cultural variables, family and household living arrangements, core housing needs, education, employment,

income and special indicators of low income. Many new variables have been added to the linkage for this cycle as a result of expanded census linkage to income tax data,¹¹ increasing the variables available to the CSD. The list below highlights some of the census variables that have been appended to the CSD analytical files.

Geographies (Current place of residence) (8 variables)

- Economic regions, census metropolitan areas, Inuit regions, population centre

Subject matter listing (Alphabetical, as listed in the CSD Data Dictionaries)

Aboriginal (13 variables)

- Aboriginal identity and ancestry, Registered or Treaty Indian status

Activities of daily living (6 variables)

- Filter questions used for CSD survey sampling (see Chapter 3 for details)

Education (13 variables)

- School attendance, location of study, highest level and major field of study

Ethnocultural (20 variables)

- Place of birth, immigration, citizenship, ethnic origin

Household and family (32 variables)

- Family structure and household living arrangements
- Number and ages of children
- Multi-generational households

Housing and shelter costs (21 variables)

- Housing, including tenure (owned or rented)
- Shelter costs and subsidized housing
- Housing suitability and core housing need

Income (95 variables)

- Personal, family and household income
- Income from all sources, including market income and government transfers
- Contributions to savings plans (RPP, RRSP, QPP, TFSA)
- Low-income status (before and after tax), Market Basket indicators

Labour (21 variables)

- Labour force status, weeks worked in 2015, industry and occupation

Language (30 variables)

- Languages, at home, at work, knowledge of languages, mother tongue

Mobility (14 variables)

- Place of residence 1 year ago and 5 years ago

Place of work and journey to work (14 variables)

- Place of work, type of commute and distance

It is important to note that these census variables refer to each respondent's situation on the day of the 2016 Census, that is, as of May 10, 2016. Thus, for 2017 CSD respondents, users should be aware that in some cases, the respondent may have moved, had a change in the composition of their household, or had a change

11. Although extensive new income variable linkages were made in 2017, some income variables of interest to disability researchers (e.g. medical expenses credit, caregiver amount, credit for infirm dependents) will not be available as a result of data quality issues for particular variables.

in employment between the date of the 2016 Census and the date of the 2017 CSD interview. In other words, some of the information provided by the census may not be reflective of the respondent's situation when the CSD interview took place. In addition, some census data have undergone imputation processes or have been completed by members of the household other than the selected CSD respondent and therefore may present some inconsistencies with data collected for the CSD.

A complete list of the census variables and their specifications are provided in the 2017 CSD Data Dictionaries. Census variables are grouped by subject matter. Contact Statistics Canada [Client Services](#) for details or call 1-800-263-1136.

2.10 A special note about age data

Age is a core demographic factor of interest in the analysis of disability in Canada. When using age as a component of research with 2017 CSD data, or in combination with linked data from the 2016 Census, it is important for users to keep in mind the different reference periods involved. Section 6.2 of this guide provides an explanation of these survey reference periods. With respect to age, it is important to note that data collected from respondents in the context of the 2016 Census were collected on May 10, 2016 while data from the CSD were collected 10 to 15 months later, between March and August 2017. For example, CSD respondents who were 15 years of age at the time of the 2016 Census were 10 to 15 months older at the time of the CSD. In general, estimates about persons with disabilities disseminated by Statistics Canada will be based on age as of the reference date of May 10, 2016. With respect to particular research studies that may be sensitive to this time lag, data users will have the option of selecting an age indicator based on the 2016 Census reference period or an age variable based on the date of the 2017 CSD interview. Section 6.2 provides an understanding of the use of survey reference periods in relation to different types of data analyses that may be of interest to users.

2.11 Geographies

The 2017 CSD was designed to produce reliable data for each of the provinces and territories. Other geographic variables are also available in the 2017 CSD database, based on geographies from the 2016 Census, such as census metropolitan areas and Inuit regions. In addition, geographies will include health regions across Canada which represent administrative areas or regions as used by health authorities. However, users should note that not all CSD survey data can be cross-tabulated or analyzed at these more detailed levels of geography. Some data tables will be possible but the reliability of data estimates at these levels of geography will need to be examined on a case-by-case basis.

The [2016 Census Dictionary](#) defines geographies relevant to the CSD. More details on [health regions](#) can be found on the Statistics Canada website.

3. Sample design of the Canadian Survey on Disability

3.1 Target population and coverage

The **population covered** by the Canadian Survey on Disability (CSD) consists of all persons aged 15 and over (on Census Day, May 10, 2016) who responded that they have difficulty “sometimes,” “often,” or “always” to any of the sub-questions on activities of daily living in the long-form census questionnaire (see Textbox 3.1), which are considered CSD “filter questions”. The population covered by the long-form census questionnaire includes persons living in private dwellings¹² in the 10 provinces and 3 territories. However, for operational reasons, the population living on First Nations reserves are excluded from the CSD.

The sample for the 2017 CSD was selected from the list of all individuals who responded in the affirmative to at least one of the census filter questions on activities of daily living. These people are the most likely to have a disability and are part of the population we refer to as the **YES population**. The people within this population whose activities are limited as a result of a long-term condition or health issue (as determined through the CSD’s Disability Screening Questions [DSQ]) are part of the **target population** of persons with a disability.

While the CSD does not cover persons who responded “no” to the filter questions on the long-form census questionnaire (known as the **NO population**), a sample of these individuals is nonetheless included in the CSD data files, called the analytical files (see Section 3.8). These people are all considered to be people without a disability. A certain number of persons without a disability will also be found in the YES population. These are people who did not report any activity limitations in the DSQ module of the CSD (also called “false positives”). As we will see later, the sample of persons without a disability is used in two ways: to calculate disability rates and to compare the census characteristics of persons with and without a disability.

12. All collective dwellings are therefore excluded since they do not receive the long-form Census questionnaire, and so do not respond to the filter questions. See Section 3.4 below for a list of collective dwellings.

Textbox 3.1**2016 Census filter questions on activities of daily living****Activities of daily living**

The following question is about difficulties a person may have doing certain activities. Only difficulties or long-term conditions that have lasted or are expected to last for six months or more should be considered.

11. a) Does this person have any:
difficulty seeing (even when wearing glasses or contact lenses)?

- 1: No
- 2: Sometimes
- 3: Often
- 4: Always

b) Does this person have any:
difficulty hearing (even when using a hearing aid)?

- 1: No
- 2: Sometimes
- 3: Often
- 4: Always

c) Does this person have any:
difficulty walking, using stairs, using his/her hands or fingers or doing other physical activities?

- 1: No
- 2: Sometimes
- 3: Often
- 4: Always

d) Does this person have any:
difficulty learning, remembering or concentrating?

- 1: No
- 2: Sometimes
- 3: Often
- 4: Always

e) Does this person have any:
emotional, psychological or mental health conditions (e.g., anxiety, depression, bipolar disorder, substance abuse, anorexia, etc.)?

- 1: No
- 2: Sometimes
- 3: Often
- 4: Always

f) Does this person have any:
other health problem or long-term condition that has lasted or is expected to last for six months or more?
Exclude: any health problems previously reported above.

- 1: No
- 2: Sometimes
- 3: Often
- 4: Always

3.2 Reference period

The CSD represents the population aged 15 and over on Census Day, **May 10, 2016**. However, all the information collected during the CSD represents the population's characteristics as measured from **March to August 2017**. To understand how these two reference periods affect the use and interpretation of CSD data, refer to section 6.2.

3.3 Sampling frame created from the 2016 Census

The sampling frame for the CSD was constructed from the Census Response Database, a preliminary database called the RDB. The database contained all responses received via the various reporting modes (Internet, paper questionnaires, personal interviews, etc.). Responses in this database are responses pre-processing and imputation by the census team. The frame had to go through a number of processing steps to ensure that all the information would be as complete as possible:

- when the age was missing for a person on the census questionnaire, it had to be imputed on the basis of responses to census long form questions (for example, data on education, employment and income, etc.);
- various data sources were used to detect errors in telephone numbers or find missing telephone numbers or addresses;
- various data sources were used to find phone numbers associated with the household of the selected person to increase chances of contacting it;
- various data sources were used to fill in incomplete addresses to increase chances of respondents receiving the letter of introduction¹³ informing them of the upcoming survey;
- preliminary weights for the census had to be derived so that estimates of the population size in each stratum could be computed for sample allocation.

3.4 Sample design

The sample design is a two-phase stratified design based on the 2016 Census. The first phase, the census itself, is the selection of the sample of households that received the long-form census questionnaire, and the second phase involves the selection of people for the CSD sample.

Phase 1

The first phase corresponds to the selection of the sample of households that received the long-form census questionnaire, approximately one in four households, systematically selected across Canada. Canadian citizens temporarily living abroad, full-time members of the Canadian Forces posted abroad, and visitors or representatives of foreign governments are excluded from the target population of the long-form census questionnaire. The following are also excluded: people living in collective dwellings (institutional and non-institutional), such as hospitals, long-term care facilities (including group homes for people with disabilities or addictions), correctional institutions or detention centres, nursing homes, residences for senior citizens, religious establishments (such as convents, monasteries or seminaries), rooming and boarding houses, hostels, Hutterite colonies, establishments offering temporary lodging (such as hotels, motels, campgrounds, YMCA, Ronald McDonald Houses, and shelters), as well as other establishments, including school residences, military bases, work camps, and ships.

There are two versions of the long-form census questionnaire: the 2A-L and the 2A-R. [Questionnaire version 2A-L](#) is distributed to approximately one in four households in most regions of Canada and is completed by self-enumeration. In addition to the basic census demographic questions (name, sex, date of birth, legal marital status, common-law status, relationship to person 1, various language questions, and the consent question to release the data in 92 years), the 2A-L questionnaire also includes questions on labour market activity, income, education, citizenship, housing, ethnic origin, Aboriginal identity, etc. The [2A-R questionnaire](#) is identical to the

13. See section 4.3.

2A-L version, but it is administered to all households in remote areas and on First Nations reserves by way of personal interview. CSD filter questions (i.e., questions on activities of daily living) are only included in the long-form questionnaire.

In sampling terminology, the first phase is a stratified systematic sample of occupied private dwellings with a constant sampling rate of $\frac{1}{4}$ in most regions of Canada and complete enumeration in remote areas and on First Nations reserves. The sampling unit for the first phase is the household.

Phase 2

In the second phase, the CSD sample was selected among individuals who reported having difficulty in response to the sub-questions about activities of daily living on the long-form census questionnaire. The sample excludes people living on First Nations reserves and those under the age of 15 as of May 10, 2016. The sampling unit for the second phase is the person.

The CSD sample was selected so that there would be a sufficiently large sample in each estimation domain and to optimize the sample allocation, as explained in section 3.5.

3.5 Estimation domains and stratification

Domains of estimation are groups of units for which estimates are targeted with an “acceptable” level of precision. The CSD domains of estimation consist of the provinces cross-classified with the following age groups:

- 15 to 24
- 25 to 44
- 45 to 64
- 65 to 74
- 75 and over

For Prince Edward Island, the first two age groups had to be combined because of their very small population sizes. For each of the three territories, the estimation domain includes a single age group (15 and over).

Each estimation domain was then divided into strata. Stratification makes the sampling strategy efficient, ensures that the sample sizes are adequate for the known areas of interest, and helps prevent a “bad” sample from being selected. The census sample design was taken into account when establishing strata for each domain. The strata comprise people with similar preliminary sampling weights (i.e., remote or non-remote areas) as well as similar degrees of potential disability severity.¹⁴ The degree of severity used for stratification purposes reflects the answers to the filter questions on activities of daily living. In order to group individuals with a similar probability¹⁵ of having a disability, three severity classes were created based on the answers (i.e., No, Sometimes, Often, or Always) to each filter question (i.e., vision, hearing, physical, cognitive, mental health, or other). Six strata were thus generated for each estimation domain, with three levels of severity sorted by whether a person lives in a remote area or not.

Hence, each estimation domain was divided into six possible strata defined as follows:

- Non-remote area — mild severity
- Non-remote area — moderate severity
- Non-remote area — high severity
- Remote area — mild severity
- Remote area — moderate severity
- Remote area — high severity

14. The concept of “severity” used here is not the same as the one used for the severity score described in Section 2.4. Here, it only takes answers to the census filter questions into account.

15. Answers to the Disability Screening Questions asked during a test conducted as part of the 2011 Labour Force Survey were used to estimate these probabilities.

Note that not all 6 strata necessarily occurred in each estimation domain. Since there are no remote areas in Prince Edward Island, Nova Scotia and New Brunswick, there were only three strata for each domain in these provinces. Conversely, since there are only remote areas in Nunavut, this territory also only had three strata.

All persons meeting the conditions for the CSD frame were then classified into these estimation domains and strata prior to sample selection.

3.6 Sample allocation

The sample sizes were determined in such a way that, for each estimation domain, one could estimate a minimum proportion with a maximum coefficient of variation (CV) of 16.5%. At Statistics Canada, 16.5% is often used as the upper limit for the CV of an acceptable estimate. The minimum proportion to estimate in each estimation domain is shown in the table below. A design effect of 1.2 was assumed for these calculations. In other words, it was assumed that in the estimation domains, the variance that would be obtained with the CSD's sample design would be 20% higher than the variance that would be obtained if a simple random sample of the same size in each domain was selected.

Table 3.1
Minimum proportion to estimate with a maximum coefficient of variation (CV) of 16.5%, by estimation domain

Province of territory	Age group						
	15 and over	15 to 44	15 to 24	25 to 44	45 to 64	65 to 74	75 and over
	percent						
Newfoundland and Labrador	...	...	10.0	8.5	8.5	12.0	13.0
Prince Edward Island ¹	...	10.0	...	...	8.5	12.0	13.0
Nova Scotia	...	...	10.0	8.5	8.5	12.0	13.0
New Brunswick	...	...	10.0	8.5	8.5	12.0	13.0
Quebec	...	...	10.0	8.5	8.5	12.0	13.0
Ontario	...	...	10.0	8.5	8.5	12.0	13.0
Manitoba	...	...	10.0	8.5	8.5	12.0	13.0
Saskatchewan	...	...	10.0	8.5	8.5	12.0	13.0
Alberta	...	...	10.0	8.5	8.5	12.0	13.0
British Columbia	...	...	10.0	8.5	8.5	12.0	13.0
Yukon ²	9.0	...	...	...	...	...	...
Northwest Territories ²	9.0	...	...	...	...	...	...
Nunavut ²	9.0	...	...	...	...	...	...

... not applicable

1. For Prince Edward Island, age groups 15 to 24 and 25 to 44 had to be combined because of their very small population sizes.

2. For each of the three territories, the estimation domain includes a single age group (15 and over).

Source: Statistics Canada, Canadian Survey on Disability, 2017.

A method of optimal allocation among the strata in a particular domain was used, taking into account the expected non-response and the expected false positive rate (people who answered in the affirmative to the filter questions on activities of daily living in the census but have no disability according to the DSQ) in each stratum. This allocation depended in part on the long form census weights adjusted for non-response. It should be noted that at the time of allocation, those weights had not yet been calculated. Consequently, preliminary weights were calculated solely for the purposes of the allocation. However, the final census long form weights were used in the CSD weighting process. For background information on census long form weighting, see Chapter 9 of the [Guide to the Census of Population, 2016](#).

3.7 Sample sizes

The final sample sizes for the CSD sample sent to collection (the YES sample), by province and territory, are shown in Table 3.2 below.

Table 3.2
Sample size by province and territory

Province or territory	Sample sent to collection
Newfoundland and Labrador	4,620
Prince Edward Island	3,188
Nova Scotia	4,387
New Brunswick	5,014
Quebec	5,252
Ontario	4,811
Manitoba	4,803
Saskatchewan	4,695
Alberta	4,920
British Columbia	5,009
Yukon	1,054
Northwest Territories	1,120
Nunavut	1,103
Total	49,976

Source: Statistics Canada, Canadian Survey on Disability, 2017.

3.8 The NO sample

As previously mentioned, the CSD analytical file is used in part to estimate disability rates for various geographies but also to compare the characteristics of persons with and without a disability. For that purpose, the analytical file must also include a representative sample of persons without a disability, which is not the case when only the YES sample is considered.¹⁶ A sample from the NO population therefore had to be selected, i.e. people who answered “no” (or did not answer at all) to all the filter questions on activities of daily living in the long-form census questionnaire. The underlying assumption here is that the members of the census NO population are less likely to have a disability, or that if they have a disability, it is very mild.

The NO sample was not sent to the field, since each individual is considered not to have a disability. The analytical file contains a large number of characteristics from the census for this sample and for the YES sample, which makes it possible to compare persons with a disability and persons without a disability. With this NO sample, analysts are also able to produce the denominators required to calculate the disability rates for a number of subgroups of the Canadian population.

To keep the analytical file from getting too large, a sample of the NO population was selected instead of taking the entire population. To select the sample, the population was stratified by province, sex, and five-year age groups, the oldest group being 75 years and over (and therefore, more detailed than the YES sample). The census sample design was also taken into account for the NO sample since the strata were then subdivided based on remote and non-remote areas.

The NO sample size was established in order to estimate lower minimum proportions and/or to attain a lower CV (for better precision) than those established for the YES sample. A minimum proportion to estimate and a CV to attain were set for each domain to ensure the total sample size was roughly 140,000 individuals—a size with which estimates of adequate quality can be produced. The minimum proportions used to calculate the sample sizes for the NO population were the same as the proportion used for the YES population in the territories (15 years or over), and for the last two age groups in the provinces (65 to 74 years, and 75 years or over). However, for better accuracy, they were lowered slightly in the provinces for working-age groups, i.e., 15 to 24 years, 25 to 44 years, and 45 to 64 years (see Table 3.3). CV targets were reduced to 6.5% across most of the domains¹⁷ (compared

16. The YES sample comprises a certain number of persons without a disability, referred to as false positives, but this sample is far from being representative of all persons without a disability.

17. In Prince Edward Island, the CV was set at 8% for the 65-to-74 age group, and 12% for the 75 and older age group to prevent selecting all available units in the sampling frame. In the three territories, the CV was set at 6%.

with 16.5% in all domains for the YES sample) since a larger sample size was possible for the NO population. This offers the advantage of producing a sample with a relatively stable size per domain, thereby improving the accuracy of the estimators at the domain level. The table below lists the minimum proportions to estimate for each domain of estimation.

Table 3.3
Minimum proportion to estimate for NO sample, by estimation domain

Province of territory	Age group						75 and over
	15 and over	15 to 44	15 to 24	25 to 44	45 to 64	65 to 74	
	percent						
Newfoundland and Labrador	...	...	9.0	7.5	7.5	12.0	13.0
Prince Edward Island ¹	...	9.0	...	...	7.5	12.0	13.0
Nova Scotia	...	...	9.0	7.5	7.5	12.0	13.0
New Brunswick	...	...	9.0	7.5	7.5	12.0	13.0
Quebec	...	...	9.0	7.5	7.5	12.0	13.0
Ontario	...	...	9.0	7.5	7.5	12.0	13.0
Manitoba	...	...	9.0	7.5	7.5	12.0	13.0
Saskatchewan	...	...	9.0	7.5	7.5	12.0	13.0
Alberta	...	...	9.0	7.5	7.5	12.0	13.0
British Columbia	...	...	9.0	7.5	7.5	12.0	13.0
Yukon ²	9.0	...	...	...	...	...	...
Northwest Territories ²	9.0	...	...	...	...	...	...
Nunavut ²	9.0	...	...	...	...	...	...

... not applicable

1. For Prince Edward Island, age groups 15 to 24 and 25 to 44 had to be combined because of their very small population sizes.

2. For each of the three territories, the estimation domain includes a single age group (15 and over).

Source: Statistics Canada, Canadian Survey on Disability, 2017.

The following table lists the NO sample sizes by province.

Table 3.4
NO sample size by province and territory

Province or territory	NO sample (not sent to collection)
Newfoundland and Labrador	13,037
Prince Edward Island	7,345
Nova Scotia	13,340
New Brunswick	13,245
Quebec	13,821
Ontario	13,855
Manitoba	13,428
Saskatchewan	13,366
Alberta	13,711
British Columbia	13,770
Yukon	2,818
Northwest Territories	2,901
Nunavut	2,777
Total	137,414

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Since all units in the NO population are considered not to have a disability, the severity score for each unit in the file was set to 0, and the severity class was set to 0. This was done in order to calculate disability rates.

4. Data collection

4.1 Time Frame

The Canadian Survey on Disability (CSD) was conducted from March 1 to August 31, 2017. As a post-censal survey, it followed the 2016 Census of Population which was conducted on May 10, 2016. A time lag of approximately 10 to 15 months existed between the two surveys.

4.2 Communications

In the months leading up to data collection for the 2017 CSD, preparations were made to ensure that respondents had all the information they would need about the survey. A [CSD survey webpage](#) appeared on the Statistics Canada website as part of the agency's official survey repository and registry system, called the Integrated Metadatabase (IMDB). The CSD webpage included a survey description, background information on the survey and its methodology, and a link to the questionnaire. In addition, a special webpage of [Information for Survey Participants](#) (ISP) was developed with step-by-step information on how to participate, "Questions and Answers" about the survey, and an [infographic](#) highlighting Canadian statistics on disability from the 2012 CSD.

In order to create on-line visibility for CSD collection activities, a social media campaign for the survey was launched on Twitter and Facebook. Social media postings were made throughout the survey collection period with weekly to biweekly announcements about the survey, a variety of promotional infographics, customized images and other relevant statistical results from the 2012 CSD.

4.3 Mode of collection

For the first time, collection for the 2017 CSD was done using an Internet-based electronic questionnaire (EQ). Respondents could answer the EQ directly online without interviewer assistance (i.e., self-response) using a secure access code they received in the mail. We refer to this type of collection using the acronym rEQ. In addition, telephone interviews were used at the start of collection with people who were less likely to respond online, as well as in the middle and at the end of collection for non-response follow-up. For this type of collection mode, the interviewers asked the questions to the respondent and entered the answers directly in the respondent's EQ during the interview. The acronym iEQ is used to refer to this type of collection.

In order to optimize online responses while considering the availability of interviewers in the regional offices, the sample was divided into two right from the beginning: respondents most likely to respond online and others. The group of respondents most likely to respond online comprised people in households who responded to the 2016 Census online; people who reported often or always having difficulty hearing¹⁸; and people whose household provided an email address in the 2016 Census. Based on these criteria, two-thirds of respondents were assigned to the online collection mode (rEQ) at the start of collection. The remaining third was sent to Statistics Canada's regional offices for telephone collection (iEQ). Due to issues with high-speed Internet access in Nunavut, the above criteria were waived and all respondents from this territory were assigned to telephone collection right from the beginning.

A few days before the start of collection, a letter of introduction was sent to all respondents to inform them of the upcoming survey and mentioning the importance of participating. Each letter included a link to the CSD web page, as well a toll-free number to call if they had questions (and a TTY number for the hearing impaired). Each respondent also received a colour infographic in both official languages showing results of the 2012 CSD. The letters were always in English and French, while Inuktitut and Inuinnaqtun versions were also sent to respondents in Nunavut.

18. As per question 11b of the 2016 long-form Census questionnaire.

In addition, a Braille insert was included with each letter, providing information for the visually impaired on how to contact Statistics Canada by phone or how to visit the CSD web page for more information about the survey for which they had been selected.

The introduction letters sent to respondents assigned to the rEQ method included a link to the electronic questionnaire as well as a secure access code. To encourage timely participation, they were asked to respond by March 24¹⁹ at the latest. Respondents assigned to the iEQ method were informed that an interviewer would try to reach them by phone over the following weeks. Over the six-month collection period, up to five reminder letters were sent to rEQ respondents who had not yet submitted their questionnaire. A new deadline was hence given on the reminder letters. During the first two months of collection, interviewers only tried to make telephone contact with respondents selected for the iEQ collection mode. From the third month, interviewers also tried to call rEQ respondents who had not yet completed the questionnaire to give them the option of doing so by telephone interview. In some cases, iEQ respondents asked to complete the survey themselves using the electronic questionnaire. A procedure was established to promptly send them an email with a link to the EQ and a secure access code. Approximately two in five respondents (40%) opted to use the electronic questionnaire.

For respondents designated for telephone contact, interviewers were instructed to make all reasonable attempts to obtain a completed interview with the selected member of the household. For cases in which the timing of the interviewer's call was inconvenient, an appointment was arranged to call back at a more convenient time. For cases in which there was no one home, call backs were made at different moments of the day and different days of the week to maximize chances of reaching the respondent. Those who refused to participate were sent a letter to explain the importance of the survey and encourage their participation, and were re-contacted by telephone.

Across Canada, respondents were interviewed in the official language of their choice — English or French.

The time required to complete the survey varied from person to person but, on average, the survey took approximately 35 minutes to complete.

4.4 Security of online survey questionnaires

The electronic data collection system for the 2017 CSD involved a secure web server for the Internet-based EQ questionnaire, which captured both the iEQ and rEQ survey data. In addition, the iEQ was framed by a Blaise software system for the purpose of interviewer case management.

Statistics Canada takes the protection of confidential information provided online very seriously. A secure login process and robust encryption are key elements in helping to prevent anyone from viewing or tampering with a respondent's survey information when it is completed and submitted online.

To protect the security of respondents' personal information when using the Internet, Statistics Canada has incorporated the following safeguards:

- It uses strong bi-directional encryption technologies to ensure end-to-end security of data passing between the respondent's computer device and Statistics Canada's web server.
- Survey data are processed and stored on a highly restricted internal network and cannot be accessed by anyone who has not taken the oath of secrecy.
- Data submitted to Statistics Canada's web servers are encrypted before being stored and remain encrypted until they are transferred to the high security internal network.
- Powerful firewalls, intrusion detection and stringent access control procedures are used to limit access to back-end systems and databases. Survey employees who have proper authorization and who have affirmed an oath of secrecy can access survey data but only from secure Statistics Canada locations.

The Blaise software system is also used in the context of stringent safeguards for protecting respondent information, including industry standard encryption technology, firewalls and restricted internal networks.

19. This date was given in the introduction letters sent to rEQ respondents, but later dates were used in the reminder letters sent afterward.

4.5 Supervision and quality control

Data collection was closely monitored throughout the six months of field activities through coordinated efforts between three specialized teams: Statistics Canada's regional data collection offices, the Collection Planning and Research Division and the methodologists, analysts and managers of the CSD survey team.

Quality control began with in-depth training of regional data collection managers and senior interviewers. Training addressed both the survey content and the interviewer-led electronic questionnaire (IEQ) application. A detailed interviewers' manual was developed and presented through a combination of classroom learning and a period of self-study. Presentations were delivered by analysts, methodologists and collection experts. Interviewers completed a series of mock interviews to become familiar with the survey's concepts and definitions as well as the EQ screens. In addition, a special session of disability awareness training was provided by the Champion for Persons with Disabilities at Statistics Canada along with an employment equity and diversity specialist of the department.

Regional data collection managers and senior interviewers ensured that training for the CSD was provided to all front-line interviewers across all regional offices. They also ensured that all interviewers were familiar with the concepts and procedures of the survey. In addition, they were responsible for the ongoing supervision of interviewers, including the monitoring of interviews throughout the survey collection period to ensure that standard procedures were being followed.

CSD head office managers, methodologists and analysts also provided oversight and quality control throughout data collection. CSD managers made in-person visits to the regions once the survey was underway in order to observe live interviews and provide feedback to field staff. Statistical reports on collection progress were generated and closely scrutinized by analysts and methodologists on a daily basis. Ongoing communication and feedback between the regions and head office was provided through a quick-response ticket system, along with regular meetings for coordinating field work efforts and fine-tuning collection strategies.

4.6 Proxy interviews

Since disability is difficult to measure and very subjective, interviewers were asked to make every effort to conduct the interview with the selected person. However, in the following circumstances, a proxy interview was acceptable:

- The selected person was away for the duration of the survey.
- The selected person spoke neither English nor French.
- The selected person was unable to participate because of mental or physical health problems.
- A parent insisted on responding for his or her child.

In order to be accepted as a proxy respondent, the person responding must be:

- an adult who speaks either English or French;
- reachable during the survey's data collection period;
- the person most knowledgeable, or among the most knowledgeable, about the selected person's difficulties and challenges related to activity limitations and participation restrictions.

A total of 4,399 proxy interviews were conducted, 4,122 of which are considered complete, 158 out of scope,²⁰ and 119 incomplete. The 4,122 complete proxy interviews represent 12.2% of complete responses

The table below shows the distribution of the 4,122 proxy interviews deemed to be completed, by respondent's age and reason for the proxy interview.

20. An interview is considered out of scope if the respondent is less than 15 years of age, lives in an institution, resides outside Canada, or is deceased at the time of the survey.

Table 4.1
Distribution of the number of proxy interviews by respondent age and reason for proxy interview

Age group	Reason for doing a proxy interview					Total
	Health	Absent	Language	Parent ¹ insists on answering	Unknown	
15 to 24	350	247	6	655	161	1,419
25 to 44	171	112	44	56	73	456
45 to 64	125	121	102	9	92	449
65 to 74	246	78	104	0	133	561
75 and over	698	58	176	4	301	1,237
Total	1,590	616	432	724	760	4,122

1. In the case of young respondents, the proxy is typically a parent or guardian. For older respondents, it may have been the person's spouse, caregiver, friend or other family member.

Source: Statistics Canada, Canadian Survey on Disability, 2017.

4.7 Special issues

There were logistical challenges involved in managing the CSD collection, in that the collection system used was a temporary “in-house”²¹ version that didn’t allow communication or automatic transfers between the rEQ and iEQ collection modes. Employees at headquarters had to perform a series of manual operations to ensure that cases could eventually be “transferred” from one collection mode to the other. We wanted this type of transfer to be possible in order to allow respondents to use the collection mode that was most convenient for them.

The impact of this in-house collection system was all the more significant mid-way through collection when all the cases became available in the interviewers’ tasks, while also being available in rEQ mode. We wanted to prevent respondents who had just completed their questionnaire in rEQ mode being contacted by an interviewer who had no way of knowing that the case was already complete. To do this, special daily procedures were put in place. As rEQ questionnaires were received by headquarters, a series of manual operations were performed to update the interviewers’ system and remove these cases from their lists. This helped optimize the interviewers’ work by making sure they did not contact respondents who had already completed the questionnaire.

On occasion, the in-house collection system also caused the same respondent to receive more than one questionnaire. Many verifications had to be done during processing to ensure that only one of the two questionnaires was kept.

4.8 Response rate

Collection for the CSD ended with a response rate of 69.5%. This response rate is the number of complete respondents (with or without a disability) divided by the number of cases sent to collection minus the out-of-scope cases. Out of scope cases include people who died, emigrated, were institutionalized, moved to a First Nations reserve, are full-time members of the Canadian Forces living on a military base, are visitors to Canada (misclassified during the census) or who reported being less than 15 years of age at the time of the interview. Hence, the response rate reflects the percentage of cases that completed the interview relative to the number of cases that should have completed it (which is why the out-of-scope cases are excluded from the denominator).

$$\text{Response rate} = \frac{\text{Completed cases}}{\text{Cases sent to collection} - \text{Out-of-scope cases}}$$

Once the data are examined, cases which appeared to be “respondent” can sometimes be considered incomplete or out of scope, affecting the number of cases that can be used for analytical purposes. After cleaning the data and reclassifying certain cases as non-respondent, the number of respondent and out-of-scope cases were recalculated, and thus a “clean” response rate was recalculated. The tables below provide the clean response rates by province/territory and age group.

21. The Integrated Collection and Operation System (ICOS) used for the 2016 Census was not yet ready for use in the CSD collection. Therefore, a single-use temporary system had to be used.

Table 4.2
Response rate by province and territory

Province or territory	Sent to collection	Completed	Out of scope	Response rate
	number			percent
Newfoundland and Labrador	4,620	3,013	126	67.0
Prince Edward Island	3,188	2,083	89	67.2
Nova Scotia	4,387	3,032	100	70.7
New Brunswick	5,014	3,254	120	66.5
Quebec	5,252	4,045	96	78.5
Ontario	4,811	3,346	83	70.8
Manitoba	4,803	3,365	83	71.3
Saskatchewan	4,695	3,059	115	66.8
Alberta	4,920	3,321	100	68.9
British Columbia	5,009	3,288	83	66.7
Yukon	1,054	675	25	65.6
Northwest Territories	1,120	657	24	59.9
Nunavut	1,103	557	21	51.5
Total	49,976	33,695	1,065	68.9

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Table 4.3
Response rate by age group

Age group	Sent to collection	Completed	Out of scope	Response rate
	number			percent
15 to 24	11,132	6,879	63	62.1
25 to 44	13,355	8,641	70	65.0
45 to 64	11,451	8,195	110	72.3
65 to 74	7,387	5,532	199	77.0
75 and over	6,651	4,448	623	73.8

Source: Statistics Canada, Canadian Survey on Disability, 2017.

5. Data processing

5.1 Pre-processing: Data capture

All responses to the 2017 Canadian Survey on Disability (CSD) questions were captured directly in the electronic questionnaire (EQ) application, both for the interviewer-led (iEQ) component and the respondent self-reporting (rEQ) component. Additional case management information for the iEQ was captured through a Blaise software system in Statistics Canada's regional offices prior to the transmission of data to head office. Data from the rEQ were transmitted directly to head office. These electronic systems create many efficiencies in both time and costs associated with data capture and transmission. All survey responses were kept highly secure through industry-standard encryption protocols, firewalls and encryption layers.

For some CSD questions, data underwent a preliminary verification process when respondents were completing the survey. This was accomplished by means of a series of edits programmed into the EQ. That is, where a particular response appeared to be inconsistent with previous answers or outside of expected values, the interviewer or the self-reporting respondent was notified with an on-screen warning message, providing them with an opportunity to modify the response provided. Approximately 90% of respondents who received these triggered messages made a correction to their answers. The response data were subjected to more in-depth processing once they were transmitted to head office, as described in the sections below.

5.2 Survey processing steps

Once survey responses were transmitted to head office, more extensive data processing for the CSD began. This involved a series of steps to convert the questionnaire responses from their initial raw format to a high-quality, user-friendly database involving a comprehensive set of variables for analysis. A series of data operations were executed to clean files of inadvertent errors, edit the data for consistency, code open-ended questions, create useful variables for data analysis, and finally to systematize and document the variables for ease of analytical usage.

The CSD uses a set of social survey processing tools developed at Statistics Canada called the "Social Survey Processing Environment" (SSPE). The SSPE involves statistical software programs (SAS-based), custom applications and manual processes for performing the following systematic processing steps:

- Receipt of raw data
- Clean up
- Recodes
- Flow edits
- Coding
- Consistency edits
- Variable conversion
- Derived variables
- Creation of final processing file
- Creation of dissemination files

Each step of processing from the initial clean-up to the construction of derived variables are described in more detail in the sections of this chapter below. Chapter 6 provides the details related to final database creation.

5.3 Record clean up: In-scope and complete records

Following the receipt of raw data from the electronic questionnaire applications, a number of preliminary cleaning procedures were implemented for the 2017 CSD at the individual records level. These included the removal of all personal identifier information from the files, such as names and addresses, as part of a rigorous set of ongoing mechanisms for protecting the confidentiality of respondents. In addition, we made sure to save only one copy of any duplicates (i.e., two entries for a single respondent) found at this stage. Each pair was examined individually and the general rule was to keep the first entry received. The only exceptions to this rule were when the first record obviously contained errors.

Also part of clean-up procedures was the review of all respondent records to ensure each respondent was “in-scope” and had a sufficiently completed questionnaire. Specific criteria for respondents are outlined below.

1. To be “in scope” for the 2017 CSD, respondents must be at least 15 years of age on Census Day, May 10, 2016, and reside in a private household in Canada at the time of the survey. Specific questions in the entry module were used to confirm these criteria before beginning the interview. In-scope respondents include two groups: 1) those who were screened in upon completing the Disability Screening Questions (DSQ) and were therefore part of the disability population and 2) those who were screened out by the DSQ and were thus considered non-disabled. Both groups remain in the final survey database.
2. To have a “complete” questionnaire, respondents who met the criteria of the **population of persons with a disability** must have provided an answer to the last question in the Labour Force Discrimination (LFD) module.²² This ensures that we get responses to a number of essential questions: those required to produce data tables for persons with disabilities as required by the 1995 *Employment Equity Act*. See Appendix E for more information.
3. To have a “complete” questionnaire, respondents who were assigned to the **population of persons without a disability** must have provided an answer to the last question in the DSQ. Respondents without a disability were not required to complete the rest of the CSD questionnaire since it did not apply to them.

During data collection, information was exchanged several times between headquarters and the regional office interviewers. Since this information could not always be saved adequately in the collection system, a log was created and maintained at headquarters for all useful information pertaining to the respondents. For example, a respondent might have contacted the regional office after the interview to provide additional information or to make a correction to the information they initially provided. Since the case had been finalized, the interviewer no longer had access to update it or add notes, so the log was used to record this information. All the notes entered in the application by both interviewers and respondents were reviewed at headquarters and all relevant information was entered in the log.

To determine the final status of a questionnaire (complete or incomplete) for a sample unit, the additional information saved in the log was considered and given precedence over contradictory information automatically generated by the system.

Once the final status of each respondent was determined, cases considered out of scope or incomplete were removed from the database. The weights of respondents with complete questionnaires were adjusted upward to compensate for these losses (see section 6.1 for more information on weighting).

22. See Appendix A for the questionnaire flowchart including all its modules.

5.4 Recodes: Variable changes and multiple-response questions

This stage of processing involved changes at the level of individual variables. Variables could be dropped, recoded, re-sized or left as is. Formatting changes were intended to facilitate processing as well as analysis of the data by end-users. One such change at the variable level was the conversion of multiple-response questions (“Select-all-that-apply” questions) to corresponding sets of single-response variables which are easier to use. For each response category associated with the original question, a new variable²³ was created with “yes/no” response values. An example is provided below. This process is called “destringing” the variables.

Original multiple-response question:

IU_Q15 During the past 12 months, did you use the Internet from

Select all that apply.

1. home
2. personal smart phone, tablet or other wireless handheld device
3. another person’s home
4. work
5. school or training institute
6. some other location
e.g., public Wi-Fi, library, community center, etc.

Final variables in single-response “yes/no” format:

IU_15A During the past 12 months, did you use the Internet from - home

1. Yes
2. No

IU_15B During the past 12 months, did you use the Internet from - personal smart phone, tablet or other wireless handheld device

1. Yes
2. No

IU_15C During the past 12 months, did you use the Internet from - another person’s home

1. Yes
2. No

... additional “yes/no” questions for each response category, including IU_15D for – work, IU_15E for - school or training institute, and for the last category:

IU_15F During the past 12 months, did you use the Internet from - some other location, e.g., public Wi-Fi, library, community center, etc.

1. Yes
2. No

23. Users will also note the dropping of the letter Q which appeared on the acronym of every question on the questionnaire at the beginning of the question number (e.g. IU_Q15). This change to the variable name is applied later, at the stage of variable conversion.

5.5 Flow edits: Response paths, valid skips and question non-response

Another set of data processing procedures applied to the 2017 CSD was the verification of questionnaire flows or skip patterns. All response paths and skip patterns that were built into the questionnaire were verified to ensure that the universe for each question was accurately captured during processing.

Different category types for question response and non-response are explained below in order to assist users to better understand question universes as well as statistical outputs for CSD survey variables.

Question response and non-response categories

The electronic questionnaire items were identical for both interviewers (iEQ) and self-completing survey respondents (rEQ). Respondents or interviewers were generally invited to select a response from among a set of answer categories provided on the screen. In some instances, survey questions were open-ended, requiring a write-in response. An optional response category of “Don’t know” was provided in a limited number of questions. In some situations, a respondent may have skipped past the question by hitting the Next button without having provided a response. For certain critical survey questions, a missed question would elicit an automated reminder to the respondent to complete the missed question. However, respondents always had the option to skip over a question.

Special numeric codes have been designated for each type of non-response²⁴ in order to facilitate user recognition and data analysis.

Response

- An answer directly relevant to the content of the question that is captured by a list of pre-existing answer categories or that can be categorized through coding, as is the case with ‘other-specify’ items and open-ended questions.

Valid skip

- Indicates that the question was not asked of the respondent, based on their response to a previous question. Where there is a valid skip, the respondent is not considered to be part of the universe for that question.
- Code is set to “6” as the last digit, with any preceding digits set to “9”, such as 6, 96, or 996 (etc.), based on the length of the variable.

Don’t know

- In an EQ survey, it is not always possible to identify situations where a respondent doesn’t know the answer. This is because the respondent always has the choice to skip past a question by pressing the Next button, without specifying the reason why. These missed items are normally coded as Not Stated (see category below). However, for some CSD questions, it was important to distinguish whether respondents truly did not know the answer and so a Don’t Know category was included in the list of available responses.
- Code is set to “7” as the last digit, with any preceding digits set to “9”, such as 7, 97, or 997 (etc.), based on the length of the variable.

Not stated

- Indicates that the question was asked of the respondent but not answered, such as when a respondent skips a question by hitting the Next button without having provided an answer.
- Code is set to “9” as the last digit, with any preceding digits set to “9”, such as 9, 99, or 999 (etc.), based on the length of the variable.

24. It should be noted that the Refusal category used in previous surveys is no longer used in the EQ environment. A respondent who does not wish to answer a question may hit the Next button and this situation is captured as “Not Stated”. However, due to system limitations, a refusal code will still appear among other standardized codes in the Data Dictionary for all CSD variables, and will always show a frequency of zero. This code is set to “8” as the last digit, with any preceding digits set to “9”, such as 8, 98, or 998 (etc.), based on the length of the variable.

Non-response for derived variables (DVs)

The construction of derived variables (DVs) for the CSD database often involved combining or regrouping answers of more than one survey question. Among the component variables of a DV, it is possible that some may have had valid answers, while others may have had non-response values. Where components for a given DV included any non-response code of Don't Know or Not Stated, DVs were coded to reflect the best possible understanding of the combination of responses involved.

Non-response for external census linked variables

In the case of external census variables linked to the CSD, it should be noted that these variables do not generally contain any missing data such as Don't Know, Refusal or Not Stated responses, since census processing operations for most variables involved imputation of all missing responses before they were linked to the CSD. The only exception to this involves variables related to the Activities of Daily Living question on the census, where data were not imputed as these variables were intended only to provide a sampling frame for the post-censal CSD. As noted below, any missing values for these variables are coded to "Not stated".

However, there were other categories of non-response for census variables as described below:

Not applicable

- Indicates that the question did not apply to the respondent's situation, as determined by valid answers to a previous question. For some census variables, there may have been multiple Not Applicable categories available, each indicating that the question did not apply for a different reason. In any such cases, the respondent is not considered to be part of the universe for that question.
- New CSD codes were created to replace the census "not applicable" codes, which had negative values. The new codes were necessary in order for the CSD data to be compliant with the processing system used, which didn't allow for negative values in categorical variables. However, the new CSD codes preserve the distinctions made by the census codes for identifying different reasons why the variable may not apply. Also, where needed, census variables were extended in length by one digit to accommodate these special codes.
- CSD code is set to "2", "3", "4" or "5" as the last digit (replacing census codes of -2, -3, -4, and -5), with any preceding digits set to "9", such as 92, 992 or 9992 (etc.); 93, 993 or 9993 (etc.); 94, 994 or 9994 (etc.); or 95, 995 or 9995 (etc.), based on the length of the variable.

Suppressed

- Indicates that census data have not been linked to the CSD database based on the respondent's request, as expressed at the time of the CSD interview.
- CSD code is set to "0" as the last digit, with any preceding digits set to "9", such as 90, 990 or 9990 (etc.), based on the length of the variable.

Not stated

- Indicates that the census question was not answered nor imputed. Refers only to the census Activities of Daily Living question variables, where data were not imputed, as these variables were intended only to provide a sampling frame for the post-censal CSD.
- CSD code is set to 92, replacing census code of -2-Not stated.

More information on derived variables and census variables is provided in sections 5.9 and 5.10 below.

5.6 Coding

The next step of data processing involved the review and classification of write-in responses to questionnaire items, wherever applicable—a process called coding. Two types of questions required the application of coding procedures: "Other-specify" items and questions that were completely open-ended. These are described in more detail below.

“Other-specify” items

For most questions on the CSD questionnaire, a list of answer category options were presented to respondents for their consideration. These often included on-screen help text with explanations and examples to assist with respondent selection of the most appropriate category for their situation. However, in the event that a respondent’s answer could not be easily assigned to an existing category, many questions also allowed respondents or interviewers to enter a long-answer text response in the “Other-specify” category.

All questions with “Other-specify” categories were examined and coded during processing. A total of 30 questions were coded for ‘other-specify’ responses. Twenty-five of these involved multiple response questions (“mark all that apply”) and five involved single response questions. Based on coding guidelines prepared by subject-matter specialists, many of the long answers provided by respondents for these questions were recoded back into one of the existing answer categories. Responses that were unique and qualitatively different from existing categories were kept as “Other”. Where counts warranted, new categories were created to capture emerging themes in the data that were not reflected in existing categories. Appendix F presents the extra categories added for the 2017 CSD, all of which will be noted in the data dictionaries. These new categories will also be taken into account when refining the answer categories for future cycles of the survey.

Open-ended questions and standard classifications

An additional 27 questions on the 2017 CSD questionnaire were recorded in a completely open-ended format. These included questions related to the following:

1. The respondent’s main medical condition which causes them the most difficulty or limits their activities the most (up to two conditions may be reported);
2. Occupation and industry of work;
3. Main reason for self-employment;
4. Barriers in finding work;
5. Major field of post-secondary study;
6. Aspects of accessing government services that would be difficult because of their condition

For most of these questions, responses were coded using a combination of automated and interactive (manual) coding procedures. Where applicable, standardized classification systems were used. Coding for standardized classifications involved a team of experienced coders and quality control supervisors. Subject matter experts in data processing applied additional verification procedures. For other variables, the data were reviewed by subject matter specialists using systematic qualitative methods for identifying and coding relevant themes. See Appendix F for more detail on the classification systems used as well as the emergent qualitative codes generated for open-ended questions.

5.7 Consistency edits

A number of edits and imputations are required to ensure that survey data are consistent and complete. We examined the CSD data to check for inconsistencies between some of the survey variables. The data had already gone through various edits built into the electronic questionnaire. For instance, we programmed edits to compare the age provided for certain questions with the respondent’s age at the time of the interview and to alert the respondent if a discrepancy was found. Other edits were used to avoid receiving impossible values for the number of hours usually worked in a week (which necessarily had to be less than 168). Warning messages were also programmed to minimize the risk that certain key questions used to determine labour force status would inadvertently be left unanswered.

In addition to these integrated edits, we performed edits and imputations on the data we received to ensure the consistency of a number of important survey variables since identified inconsistencies may not have been corrected during the interview. The edits and imputations applied to the 2017 CSD are described below.

Age of onset of condition and age of limitation of daily activities

The first set of edits pertained to new questions in the DSQ module related to each disability type, which asked about both the age of onset of a difficulty or condition²⁵ and the age when that difficulty or condition began to limit their daily activities.²⁶ A consistency edit ensured that the age of limitation was not younger than the age at which the difficulty began. The only exception was for developmental disabilities, where the survey asked for the age when the respondent was diagnosed with the problem²⁷, as opposed to the age of onset of the condition itself. In this case, the diagnosis could have been made at an older age than the age when their limitation in daily living began²⁸ and so no edit was performed. For all other disability types, where there was an inconsistency, the age of difficulty was changed to the age of limitation. This involved approximately 3,000 (9%) edited cases.

Once these edits were completed, a special program was run to verify the consistency between these two age variables and the respondent's current age as reported at the beginning of the CSD questionnaire. For example, the age of onset or the age at which the person became limited could not be greater than the respondent's current age. Fewer than 10 cases showed an inconsistency. In some cases, the age of onset or the age of limitation was corrected and in the other cases, the current age of the respondent was changed. It was often clear that these were typographical errors.

Reference age versus age at interview

The CSD analytical file contains two age variables: the reference age (REF_AGE), which is the respondent's age on May 10, 2016 (Census Day), and age at the time of the interview (INT_AGE), which was derived on the day of the CSD interview (between March 1st and August 30, 2017). Both these age variables were derived so as to be consistent. Therefore, REF_AGE can be equal to or less than INT_AGE by no more than two years. In general, INT_AGE was always considered valid as it was self-reported by the respondent during the interview. However, in cases where respondents did not report their age during the interview, the application defaulted to the applicant's age as of March 1st, 2017, based on the date of birth available on the survey frame.

When we examined the data post-collection, we compared the age reported on the day of the interview (INT_AGE) and the age on May 10, 2016 (REF_AGE) based on the survey frame data. If the gap between REF_AGE and INT_AGE was greater than two years, the date of the CSD interview and the birth date and month reported in the census were used to deduce the birth year, which was then used to recalculate the respondent's age as of May 10, 2016 (REF_AGE).

Age in the Census Dissemination Database

The CSD analytical file includes many variables from the 2016 Census long-form questionnaire. When we matched CSD respondents to the Census Dissemination Database, we found that the age of seven CSD respondents in the Census Dissemination Database had been imputed²⁹ to a value of less than 15 years. This created a problem since several census values for these seven respondents were coded as "not applicable because of age," even though an interview had been conducted with them and we knew that they were at least 15 years or older. To prevent this inconsistency in the analytical file, we decided to find donors for these seven respondents among the CSD respondents based on province, age group, and disability severity and type, where possible. We then replaced the values of all census variables for these seven respondents with those of their donors. The CSD variables were kept as is.

25. i.e., DSQ_045, DSQ_070, DSQ_095, DSQ_120, DSQ_140, DSQ_165, DSQ_195, DSQ_220, DSQ_245, DSQ_Q270, and DSQ_295

26. i.e., DSQ_055, DSQ_080, DSQ_105, DSQ_130, DSQ_150, DSQ_175, DSQ_205, DSQ_230, DSQ_255, DSQ_280, and DSQ_305

27. i.e., DSQ_220

28. i.e., DSQ_230

29. It should be noted that the CSD survey frame is constructed from the Census Response Database (CRDB) and that the birth dates in this database are sometimes missing or incomplete. The Census Dissemination Database is the final database after edit and imputation.

Aids and assistive devices

An inconsistency was found for some respondents who reported that they needed an assistive aid or device that they did not presently have.³⁰ When asked in a follow-up question which particular aid or device did they need but did not have, they responded “none”.³¹ For such cases, the response to the initial question was changed to a “No”, indicating there was no aid or assistive device that they needed but did not have. This involved approximately 450 (1%) edited cases.

Job tenure and Past job attachment

An inconsistency was found for a small number of respondents who indicated that they started their current job or business in 2017 but the month when they started came later than the month in which survey completion took place.³² In these few cases, it was assumed that the respondent started their current job or business in the month reported, but in 2016, not 2017; corresponding values were thus changed to 2016. Similarly, in the module on past job attachment, if a respondent indicated that they last worked at a job or business in 2017, but the month when they last worked came later than the month in which the survey was completed³³, it was assumed that the respondent started their current job or business in the month reported, but in 2016, not 2017; the corresponding variable was thus changed to 2016. Approximately 15 cases were edited in relation to these three sets of variables.

External edits

There are several indicators for labour market activity and level of education in both the CSD and the census whose concepts overlap significantly. Therefore, there may be some inconsistency in the data from these two sources. When inconsistencies were found in the 2012 CSD, the census data were suppressed. There was however a drawback to doing so, as analysts comparing data for people with and without a disability would be faced with suppression rates for people with a disability that were much higher than for people without a disability, very few of the latter having responded to the survey. To prevent this from occurring in the 2017 CSD, it was decided that inconsistent data would not be suppressed. These inconsistencies can be explained in a number of ways: imputation of the census data, response error caused by proxy responses to the census or survey, response error caused by memory problems or misunderstanding of the question, data being switched between respondents in the same household in the census, etc. Consequently, we suggest that analysts not try to analyze the changes between census data and CSD data. Census data remain an important source of information to analyze the characteristics of people with and without a disability and should be used mainly for this purpose.

5.8 Variable conversion

At this stage, final variable names are established on the file. For example, the letter Q which appears in all question acronyms is removed from final variable names. All final variable names must respect an 8-character limit.

5.9 Derived variables

In order to facilitate more in-depth analysis of the rich CSD dataset, over 130 derived variables (DVs) were created by regrouping or combining answers from one or more questions on the questionnaire. All DV names have a “D” in the first character position of the name for quick identification. The 2017 CSD Data Dictionaries identify all DVs. DVs are also listed by theme in Appendix D along with other survey indicators.

30. i.e., AADH_10 = Yes; or AADV_10 = Yes; or AADM_025 = Yes; or AADL_10 = Yes; or AADA_045 = Yes

31. i.e., AADH_15 = None; or AADV_15 = None; or AADM_030 = None; or AADL_15 = None; or AADA_050 = None

32. i.e. (JT_05 = 2017 and JT_10 > Month of survey completion) or (JT_15 = 2017 and JT_20 > Month of survey completion)

33. i.e., PJA_10 = 2017 and PJA_15 > Month of survey completion

5.10 External census-linked variables

In addition to the CSD variables, approximately 300 census variables were added to the final CSD processing file for 2017 through record linkage. At the outset of the 2017 CSD interview, all respondents were told about the plans to link the CSD survey data with the information that they provided on the census. All linked information is kept confidential and used for statistical purposes only.

For all census variables, the census variable name was preserved as much as possible on the CSD database. Some exceptions applied since CSD variable names are restricted to eight characters whereas census variable names sometimes exceeded eight characters in length. The 2017 CSD Data Dictionaries provide a complete listing of census variables. Highlights of the census variables are provided in section 2.6 above.

The final structure and content of the data files are described in Chapter 6.

6. Weighting and creation of final data files

6.1 Weighting

In a sample survey, each respondent represents not only himself or herself but also other people who have not been sampled. For that reason, each respondent is assigned a weight which indicates the number of people that he or she represents in the population. To maintain data coherence and ensure that the results accurately represent the target population and not just the individuals sampled, that weight must be used to compute all estimates.

There are several steps in calculating the weights for the Canadian Survey on Disability (CSD). The first step is to assign each unit selected for the CSD an initial weight based on the sample design. The initial weight is the inverse of the inclusion probability. A number of adjustments are then made to the weights to control for exclusions during collection, for non-response and to avoid extreme weights in the estimation domains. The final step involves calibrating the survey weights on the census estimated totals and making some adjustments to account for units that were in scope during the May 2016 selection process but out of scope at the time of the survey in 2017. The main steps in the weighting process are described in the subsections below.

Calculation of the initial weights

Initial weights need to be calculated for both the YES and NO samples.

Since the sample design of the YES sample (the CSD sample) is based on the design of the long-form census questionnaire (distributed to a sample of the population), the initial weight is the product of the weight of the YES frame³⁴ and the inverse of the CSD sampling fraction. The CSD sampling fraction is the size of the sample selected in a stratum divided by the number of units available in the sampling frame in that stratum.

Meanwhile, the initial weight of the NO sample is determined by multiplying the final weight of the long-form census questionnaire by the inverse of the NO sample's sampling fraction. For more information on the weighting strategy for the long-form census questionnaire, see Chapter 9 of the [Guide to the Census of Population](#).

The weight adjustments described in the next subsections only pertain to the YES sample, as there was no collection done for the NO sample; and therefore no need for any adjustment other than the final calibration.

Adjustment for units not sent to collection

The sample selected for the CSD was expanded slightly in anticipation of the exclusion of some units from collection for the following reasons:

- selection of more than three members of the same household;
- no telephone number available to contact the selected person;
- no name and no date of birth reported on the census for a person, so no way to identify the right respondent in the household;
- selection of persons in households previously selected for the Aboriginal Peoples Survey when the total number of interviews for both surveys is four or more (we do not want to interview more than three people per household).

These losses were taken into account in calculating the sample size, and oversampling in some strata was done to compensate for them. Units excluded from collection were thus treated as non-respondents and weights of units sent to collection were adjusted.

To do this, the sample was divided into two groups: units sent to collection and units not sent to collection. A logistic regression model was used to model the probability of being sent to collection using variables from the

34. The weight of the YES frame is the initial weight of the long-form census questionnaire (which takes into account the design used to select the sample for the long-form questionnaire) adjusted for non-response to the long-form questionnaire (as these cases are excluded from the YES frame) and corrected to reflect exclusion of overlap with other surveys.

census frame, as they were available for all the sampled units. The following variables were used for this model: Aboriginal group; census collection mode; low-income indicator for the household; size of household; marital status; stratum (combination of the type of region and degree of severity); number of bedrooms in dwelling; population centre indicator; consent to release census data in 92 years; census family type; household income; language spoken at home; dwelling type; home ownership versus rental indicator; and, age and sex of the selected person. Interaction between some of these variables was also taken into account.

Using this model, we obtained the probability of being sent to collection for each sample unit. Homogeneous response classes were then formed by combining units with a similar probability of being sent to collection. An automatic class formation method³⁵ was used to generate homogeneous classes with respect to predicted probability which comprised a sufficient number of units sent to collection to avoid excessively large weight adjustment factors. A total of 42 classes were formed, and within each, the weight of the units not sent to collection was redistributed to the units sent to collection.

Non-contact and non-response adjustments

There were two major categories of non-response in the CSD: non-contact, and non-response after contact. These two types of non-response were treated separately, as they constituted two different phenomena. The factors that explained non-contact tended to be more related to household characteristics and the geographic mobility of persons, while the factors that explained non-response in a contacted household tended to be more related to the individual's characteristics.

First, units sent to the field were separated into two large groups: units that were contacted, and units that were not contacted. Logistic regression was used to model the probability of being contacted. The explanatory variables for the model came from the census frame. The variables selected for the non-contact model were: owning or renting the dwelling, domain of estimation, reporting method on the census, census family structure, one-year geographic mobility indicator, highest level of schooling completed, dwelling condition, consenting to release one's census data in 92 years, registered Indian status, indicator of an emotional, psychological or mental health condition, five-year geographic mobility indicator, total household income, number of people in the household, occupation, language spoken at home, indicator of other health problem or long-term condition, structural type of dwelling, age group, indicator of difficulty seeing, total personal income, main mode of commuting, the number of children of respondent and respondent's sex.

With this model, for each unit (contacted or not), a probability of being contacted was calculated. Then, response homogeneity classes were formed by grouping units that had similar probabilities of being contacted. An automatic class-formation method³⁶ was used to generate classes that were homogeneous with respect to predicted probability of being contacted and contained a sufficient number of units contacted to avoid excessively large weight adjustment factors. A total of 70 classes were formed, and within each one, the weight of the non-contact units was redistributed to the contacted units.

Next, an adjustment was made for a subset of contacted persons who had a disability or health condition that prevented them from responding, or who completed the Disability Screening Questions (DSQ) module (and, based on their responses, had a disability) but not the rest of the CSD interview and hence could not be considered as respondents. Since there were very few of these cases (about 200), a relatively simple adjustment was made at the stratum level, redistributing the weight of non-respondents with a disability among respondents with a disability.

The next step was the adjustment of the weights for other non-respondents (generally refusals). In this case as well, logistic regression was used to model the probability of responding given the fact that contact had been made at the household level. The variables selected for the non-response with contact model were: domain of estimation (combination of province and age group), strata (combination of type of area and level of severity), marital status, consenting to release one's census data in 92 years, household living arrangements of person, indicator of an emotional, psychological or mental health condition, indicator of other health problem or long-term condition, indicator of difficulty seeing, visible minority indicator, highest level of schooling completed, total

35. The SAS procedure PROC FASTCLUS was used here.

36. The SAS procedure PROC FASTCLUS was used here.

household income, living in a large urban centre or not, number of bedrooms in the dwelling, owning or renting the dwelling, number of household maintainers, NAICS³⁷ sector, knowledge of official languages, first official language spoken, Inuit mother tongue, place of residence one year ago, and main mode of commuting.

With this non-response model, for each unit (respondent³⁸ or not), a probability of responding given contact was obtained. Response homogeneity classes were then formed by grouping units that had similar probabilities of responding. The same procedure was used as for the contact model, which resulted in the formation of 52 classes. Within each class, the weight of the non-respondent units was redistributed among the respondent units.

It should be noted that out-of-scope units (deaths, institutional admissions, persons who now live outside the country, etc.) were initially considered to be respondent units, in that we were able to speak with a household member who confirmed the unit's out-of-scope status. Their weight was not set to 0; rather, it was retained because they represented units of the initial population (on May 10, 2016) that were out of scope in the spring of 2017. However, these units are excluded from the analytical file.

Adjustment for extreme weights by province

Following the non-contact and non-response adjustments, the distribution of respondents' weights was examined to detect the presence of very large weights by province or by estimation domain. Some adjustment factors may have generated very large weights for some individuals compared with others in some domains, which could have a detrimental effect on the estimates and their variance. The sigma-gap method was used to detect these extreme weights first within each province. An example of how the sigma-gap method can be applied is given in Bernier and Nobrega (1998).³⁹ As used here, the sigma-gap method is intended to detect large gaps between successive weights sorted in ascending order (when they are greater than the median). When an excessively large gap is found between two successive weights, the larger of the two weights and all subsequent weights are classified as outliers. To assess the size of a gap between two weights, it was compared with a certain number of standard deviations of the distribution of all weights. For the CSD, gaps between weights that were two times the distribution's standard deviation within each province were identified. The choice of two standard deviations was made because it matched the gap that would have been used to identify outlier weights had we used a manual process. All the weights identified as outliers were set to the province's highest non-outlier value. In total, weights were decreased for 11 units. The resulting weight reduction from this step will be offset at the calibration step.

Before identifying extreme weights in estimation domains, estimation domain jumpers were examined.

Estimation domain jumpers and extreme weights by domain

CSD estimation domains are formed by cross-classifying the province and age group. The age used for this purpose was taken from the Census Response Database. In some cases, the age reported on the census is incorrect, either because the person who completed the census questionnaire for the household made a mistake or because of a data entry error or an issue with the optical reader used for paper questionnaires. In some cases as well, no birth date or age were reported on the Census, so an approximate age had to be imputed in the survey frame. However, since all respondents are asked their age at the beginning of the CSD interview, it is possible to assign them to their proper estimation domain. Consequently, 183 CSD respondents changed estimation domains. In such cases, the weight was compared with the range of weights for their new domain. When the individual's weight fell within the range of weights in the new domain, it was retained with no change. On the other hand, if it fell outside the range of weights in the new domain, it was changed to the new domain's minimum value (if it was below the range) or maximum value (if it was above the range). In this step, we adjusted the weight of 34 individuals in the CSD sample.

37. North American Industry Classification System.

38. Note that out-of-scope units were excluded from this adjustment (but included in the non-contact adjustment). Since the household had already been contacted in all these cases, we would have known if the selected person was out of scope. We therefore assumed that all non-respondents with contact were in-scope, and their weight was redistributed among in-scope respondents only.

39. Bernier, J., and Nobrega, K. (1998). "Outlier detection in asymmetric samples: A comparison of an inter-quartile range method and a variation of a sigma-gap method". Annual meeting of the Statistical Society of Canada, June 1998.

Next, the sigma-gap method was used once again, this time using the final estimation domain, and comparing the gap between two successive weights (above the median) in relation to twice the standard deviation of the distribution of weights in the domain. At this point, the weights of seven units were reduced. Weight reductions made at this step will be offset in the post-stratification step.

Post-stratification

Post-stratification was performed separately for the YES and NO samples. The weights of the NO sample were then adjusted to reflect certain losses observed in the YES sample between the census and CSD collection, which could not be observed in the NO sample as there is no collection for this sample. The losses observed are mainly due to deaths, institutionalizations and emigration. These steps are described in the following sections.

Post-stratification for the YES sample involved adjusting the weights of CSD respondents (out-of-scope cases, respondents with a disability, and respondents without a disability) in order to obtain the same weighted totals as the Census of Population (long-form questionnaire, excluding First Nations reserves and people under 15 years) for the YES population by province, age group, sex and severity. The term “severity” refers to the three levels of severity used to stratify the CSD based on responses to the six filter questions on Activities of daily living. Post-stratification across the 10 provinces was done using the following age groups: 15 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, 65 to 74, and 75 and over. It was decided to use 10-year age groups rather than 5-year groups to calibrate all three severity levels within each group. In the territories, three age groups were used for post-stratification: 15 to 44, 45 to 64, and 65 and over. In addition, due to the small samples sizes in Nunavut, all three levels of severity were combined for respondents in the 65+ age group.

A similar post-stratification was performed on the preliminary weights of the NO sample using the initial weights calculated earlier. Post-stratification for this sample was done by province, five-year age groups, and sex. As the severity is null for the entire NO population, there is no need to post-stratify based on this variable. Post-stratification was done for the following age groups in the 10 provinces and 3 territories: 15 to 19, 20 to 24, 25 to 29, 30 to 34, 35 to 39, 40 to 44, 45 to 49, 50 to 54, 55 to 59, 60 to 64, 65 to 69, 70 to 74, and 75 and over.

Out-of-scope adjustment

During collection of the CSD, some out-of-scope cases were found among the selected respondents. The weight associated with these out-of-scope cases was used to estimate the number of people in the YES population who became out of scope between Census Day and CSD collection. CSD collection occurred between 11 and 16 months after the census, and just over 196,000 out-of-scope cases are estimated in the YES population, or 2% of this population. Estimates for the various types of out-of-scope cases in the YES population are presented in the table below.

Table 6.1
Estimated number of out-of-scope cases among the YES population

Type of out-of-scope case	Unweighted	Weighted	Weighted
	number		percent
Deaths	703	139,810	71.2
Institutional admissions	318	47,920	24.4
Emigrants	24	6,100	3.1
Persons less than 15 years old	13	1,790	0.9
Other	7	710	0.4
Total	1,065	196,330	100.0

Source: Statistics Canada, Canadian Survey on Disability, 2017.

The three most common types of out-of-scope cases in the YES population are deaths (72%), institutional admissions (24%) and emigrants (3%). There were very few other types of out-of-scope cases.

Since out-of-scope cases are excluded from the analytical file—and therefore from the disability rates—it is important to also try to exclude them from the rate denominator (which includes both the YES and NO populations) to avoid underestimating disability rates. Since the NO sample was not sent to collection, out-of-scope cases cannot easily be identified. Furthermore, it cannot be assumed that the proportion of out-of-scope cases in

the NO population is the same as it is in the YES population, specifically as regards death and institutionalization. Therefore, an indirect method was used to estimate and exclude out-of-scope cases in the NO population. It is not possible to correct for all types of losses in the NO sample because there are often no reliable data to do so; however, we tried to make corrections where possible.

We asked the Demography Division to provide the attrition rates of the population aged 15 and over from May 10, 2016 to midway through the CSD collection period (June 1st, 2017). These rates are calculated for the entire population, including collective dwellings and institutions, but excluding First Nations reserves. They were then applied to the population covered by the 2016 long-form Census questionnaire (which excludes collective dwellings and institutions, as well as First Nations reserves) to estimate the total number of losses due to death and emigration for this population. Seeing as these losses cover the entire population (i.e., both the YES and NO populations), the estimates for deaths and emigration derived from the YES population can be subtracted to obtain an estimate of the losses due to death and emigration for the NO population. The weight of the NO sample is then adjusted downward to reflect these losses. This adjustment is made by province/territory, age group and sex.

This method slightly overestimates losses because the attrition rates are calculated for a population that includes people who were living in an institution at the time of the census. However, the fact that it is not possible to correct the NO population for losses due to institutionalization somewhat offsets the overestimation. It should be noted that some of the deaths that occurred in institutions may have involved people who had been living in a private household at the time of the census, then were institutionalized and eventually died. Consequently, part of the overcorrection for deaths offsets the lack of corrections made for institutionalizations.

In the YES population, the number of deaths and emigrants between May 10, 2016 and June 1, 2017, is estimated to be roughly 146,000, or 1.5% of the YES population in the census. Adjustments for deaths and emigrants in the NO population reduced it by approximately 168,000 people, or 0.9% of the NO population in the census.

Table 6.2 provides the population counts for the YES and NO populations before and after the exclusion of out-of-scope cases.

Tableau 6.2
Weighted count for the YES and NO populations

Population	Weighted count	Weighted count
	before excluding out-of-scope cases	after excluding out-of-scope cases
	number	
YES population	10,016,500	9,820,170
NO population	18,360,000	18,188,690
Total	28,376,500	28,008,860

Source: Statistics Canada, Canadian Survey on Disability, 2017.

6.2 File structure and content

Two analytical data files were created for CSD data: a file for persons who have a disability, and a file for persons who do not have a disability. Depending on the type of analysis required, researchers will use either the file on persons with a disability only or both files together.

The **file on persons with a disability** contains data on those persons selected for the CSD who, according to the definition of disability used in the CSD, are considered to have a disability. This file is the more comprehensive of the two. It contains all CSD data and many variables linked from the census. Any analysis that deals exclusively with persons with a disability can be done with this file alone.

The **file on persons without a disability** contains data on two groups of people: one from the CSD's YES sample, and one from the NO sample. The two groups are as follows:

- a. **False positives from the Yes Sample:** Persons interviewed for the CSD who, upon completion of the Disability Screening Questions (DSQ), were not identified as having a disability (false positives). These respondents either reported that they were "never" limited in their day to day activities because of their

condition or they reported being limited only “rarely” with “no difficulty” or “some difficulty” in performing certain tasks. All of these respondents were deemed not to have a disability and therefore did not have to complete the rest of the questions in the CSD.

- b. **Persons from the NO sample:** Persons from the NO sample are those who reported no difficulties or long-term conditions on any of the 2016 Census Activities of Daily Living filter questions. This group was not sent to CSD collection for disability identification: as a result of their responses to the census filter questions, these persons were automatically deemed not to have a disability.

Hence, the file on persons without a disability has different content depending on the group of people involved. For the persons in group (a), the false positives, only the data from the CSD’s DSQ module is captured, since the interview was terminated immediately after that module. However, the census variables are also available for this group. For the persons in group (b), from the NO sample, only the census variables are captured, since no CSD collection was done for those units.

The file on persons without a disability should be used together with the file on persons with a disability for two types of analysis: 1) calculation of disability rates, since the denominator must include both persons with a disability and persons without a disability, and 2) comparison of the census characteristics⁴⁰ of persons with a disability and persons without a disability.

To distinguish between the two groups in the analytical files, a derived variable was created, CSDPOPFL, which takes a value of 1 for persons with a disability, 2 for group (a) persons without a disability (false positives), and 3 for group (b) persons without a disability (NO sample).

The table below summarizes the contents of the two data files for each of the population groups. As shown, the two files will have different sets of variables. The analytical file on persons WITH a disability will have a complete set of variables. For the analytical file on persons WITHOUT a disability, some of the variables will be missing from the file. Missing variables will be slightly different for each of the two population groups on that file. As a result, when using the analytical file on persons WITH a disability together with the file on persons WITHOUT a disability, some variables will show missing values for persons WITHOUT a disability.

Table 6.3
Available content for various groups of persons in the Canadian Survey on Disability analytical files

Analytical data file	Population group	CSDPOPFL	Demographic variables	DSQ	CSD thematic content	Census variables	Final person-weight ¹
File on persons WITH a disability	Persons WITH a disability	1	√	√	√	√	√
File on persons WITHOUT a disability	Persons WITHOUT a disability (group (a))	2	√	√		√	√
	Persons WITHOUT a disability (group (b))	3	√			√	√

√ content is available

1. Note that separate files have been created containing bootstrap weights for persons with and without a disability. For a description of bootstrap weights, see section 7.2.

Source: Statistics Canada, Canadian Survey on Disability, 2017.

A note on reference periods

When calculating disability rates or comparing the characteristics of persons with a disability and persons without a disability, the **reference date is May 10, 2016**, Census Day. This is the date when the CSD sampling frame was defined and when comparative census indicators were collected for persons with and without disabilities. However, when researchers are only interested in persons with a disability, they will work with the CSD data collected and measured in the spring and summer of 2017 for the subset of persons with a disability. In this case, the **reference period is from March 1 to August 30, 2017**.

40. We use Census characteristics because for most people without a disability, we have only those variables (the NO sample).

In other words, for the CSD, persons with a disability are individuals who reported having difficulty sometimes, often or always on the Activities of Daily Living question of the 2016 long-form Census, and who reported having a disability in the CSD in 2017. Hence, the CSD's characteristics for persons with a disability are based on **2017 information** about a **population defined in 2016**.

6.3 Final datasets and data dictionaries

Final data files included the following:

- Analytical files for use in Research Data Centres (RDCs) across Canada
- Data files for use by subscribers of the Real Time Remote Access (RTRA) system at Statistics Canada

The analytical files are dissemination files with enhanced protection of respondent confidentiality for release and distribution to RDCs across Canada. They are also used at Statistics Canada to produce data tables in response to client requests. Person-weights are available on the files. Weighting is described in more detail in Section 6.1. Any variables used exclusively for processing purposes or for internal research were removed from the analytical files.

Accompanying the 2017 CSD analytical files are the following supporting documents:

- The record layout
- SAS (Statistical Analysis System), SPSS (Statistical Package for the Social Sciences) and Stata syntax to load the files
- Metadata in the form of a data dictionary for each analytical file that describe every variable and provide weighted and unweighted frequency counts
- A user guide entitled, *CSD 2017: A User Guide to the Analytical Data Files*, as described in section 6.4
- This *CSD 2017: Concepts and Methods Guide*, as an essential companion document to the user guide

RTRA data files are housed at Statistics Canada for use by subscribers who can run statistical programs on the data from remote locations. These files consist of the analytical data files but have undergone further processing. All sub-provincial geographies have been removed, permitting analysis only at the national, provincial and territorial levels.

For RTRA users, data dictionaries are provided with full descriptions for all the variables but without any data frequencies, called the “zero-frequency” versions.

6.4 Guidelines for analysis

The User Guide created for the RDC analytical files provides detailed step-by-step instructions for using the 2017 CSD data files. It includes guidelines for tabulation and statistical analysis, how to apply the necessary weights to the data, information on software packages available and guidelines for the release of data, such as rounding rules. The process of calculating the reliability of estimates, both quantitative and qualitative, is covered in detail.

For RTRA users, confidentiality rules and reliability standards are applied to all tabulation requests in an automated way by the RTRA system.

The CSD User Guide is for use in combination with the Concepts and Methods Guide and the data dictionaries.

7. Data quality

7.1 Overview of data quality evaluation

The objective of the Canadian Survey on Disability is to produce quality estimates on the type and severity of disabilities of Canadians aged 15 years and over (as of May 10, 2016) as well as on a variety of other important indicators of the experiences and challenges of persons with disabilities. This chapter reviews the quality of the data for this survey.

Sections 7.2 and 7.3 below explain the two types of errors that occur in surveys—sampling and non-sampling errors. Each type of error is evaluated in the context of the CSD. Sampling error is the difference between the data obtained from the survey sample and the data that would have resulted from a complete census of the entire population taken under similar conditions. Thus, sampling error can be described as differences arising from sample-to-sample variability. Non-sampling errors refer to all other errors that are unrelated to sampling. Non-sampling errors can occur at any stage of the survey process, and include non-response for the survey as well as errors introduced before or during data collection or during data processing.

This chapter describes the various measures adopted to prevent errors from occurring wherever possible and to adjust for any errors found throughout the different stages of the CSD. Areas of caution for interpreting CSD data are noted. Readers may also refer to the [Guide to the Census of Population, 2016](#) for related information on data quality.

7.2 Sampling errors and bootstrap method

The estimates that can be produced with this survey are based on a sample of individuals. Somewhat different estimates might have been obtained if we had conducted a complete census with the same questionnaires, interviewers, supervisors, processing methods and so on, as those actually used. The difference between an estimate derived from the sample and an estimate based on a comprehensive enumeration under similar conditions is known as the estimate's "sampling error".

To produce estimates of the sampling error for statistics produced from the CSD, we used a particular type of bootstrap method. Several bootstrap methods exist in the literature, but none was appropriate for the CSD's complex sample design. The following characteristics of the sample design make it difficult to estimate the sampling errors:

- A two-phase design in which households (or dwellings) are selected in the first phase and individuals in the second phase. In the first phase, a random sample of approximately one in four households, stratified by collection unit (CU), was selected to respond to the long-form census. In the second phase, a sample of some 50,000 individuals having reported a difficulty in activities of daily living on the census was selected for the CSD.
- The sampling fraction of the first-phase sample (census long-form) is non-negligible (about 1/4 in the non-remote regions), and the sampling fraction of the CSD is rather high in some strata.
- The CSD strata (combinations of province/territory, age group, remote or non-remote region, mild, moderate or high severity level) are non-nested within the census strata (CUs or groups of CUs).
- The method used has to be flexible enough to produce standard statistics such as proportions, totals, averages and ratios, as well as more sophisticated statistics, including percentiles and logistic regression coefficients.

In 2006, a general bootstrap method for two-phase sampling was developed and applied to the Aboriginal Peoples Survey (APS) (Langlet, Beaumont and Lavallée, 2008).⁴¹ The underlying idea of the general bootstrap method is that the initial bootstrap weights can be seen as the product of the initial sampling weights and a random adjustment factor. In the case of a two-phase sample, the variance can be split into two components, each

41. This method was not used for the 2006 Participation and Activity Limitation Survey (PALS) because its development was still ongoing at the time of the data release.

associated with one sampling phase. The two-phase general bootstrap method generates a random adjustment factor for each phase of sampling. In this case, the initial bootstrap weight of a given unit is the product of its initial sampling weight and the two random adjustment factors. Once initial bootstrap weights have been calculated, all weight adjustments applied to the initial sampling weights were applied to the initial bootstrap weights to obtain the final bootstrap weights, which capture the variance associated not only with the particular sample design but also with all weight adjustments applied to the full sample to derive the final weights.

For the 2012 CSD, we were able to adapt the method developed for the 2006 APS to reflect the complexities of the design of the National Household Survey (NHS), which replaced the long-form census questionnaire. In terms of calculating variance, the 2011 NHS sample design was considered a three-phase plan: the first phase involved the initial selection of approximately one in three households; the second involved the selection of a household sample among all non-respondent households for non-response follow-up; and the third involved a sample of respondents following non-response follow-up. In order to use the generalized two-phase method, the three NHS phases were combined into a single phase, while the CSD sample made up the second phase.

Given the return of the long-form census questionnaire in 2016, a slightly modified version of the 2012 method was used for the 2017 CSD. In terms of calculating variance, the 2016 Census sample design is considered a two-phase plan: the first phase involves the initial selection of approximately one in four households, while the second is the census respondent sample. Although the 2016 Census had a very high response rate (97.8% for the long-form), the second phase of the census accounted for non-response in calculating variance. Therefore, in order to use the generalized two-phase method, the two census phases were combined into a single phase, while the 2017 CSD sample made up the second phase.

There is a major advantage in having two sets of random adjustment factors. The first set of adjustment factors can be used for estimates based on the first phase only, i.e., estimates based on the census long-form sample. These estimates are used when the weights are adjusted to the census totals during post-stratification (Section 6.1). This produces variable census totals for each bootstrap sample, which reflects the fact that the census totals used are based on a sample and not on known fixed totals.

For the CSD, 1,000 sets of bootstrap weights were generated using the general bootstrap method. The method used is slightly biased in that it slightly overestimates the variance. The extent of the overestimation is considered negligible for the CSD. The method can also produce negative bootstrap weights. To overcome this problem, the bootstrap weights were transformed to reduce their variability. Consequently, the variance calculated with these transformed bootstrap weights has to be multiplied by a factor which is a function of a certain parameter, known as *phi*. The parameter's value is chosen as the smallest integer that makes all bootstrap weights positive. For the CSD, this factor is 4. The variances calculated from the transformed bootstrap weights must therefore be multiplied by $4^2 = 16$. Similarly, the coefficients of variation (square root of the variance divided by the estimate itself) must be multiplied by 4. However, most software applications that produce sampling error estimates from bootstrap weights have an option to specify this adjustment factor, so that the correct variance estimate is obtained without the extra step of multiplying by the constant.

It is extremely important to use the appropriate multiplicative factor for any estimate of sampling error such as variance, standard error or CV. Omission of this multiplicative factor will lead to erroneous results and conclusions. This factor is often specified as the “Fay adjustment factor” in software applications that produce sampling error estimates from bootstrap weights.

For examples of procedures using the Fay adjustment factor, see the 2017 Canadian Survey on Disability User Guide to the Analytical Data files.

The measure of sampling error used for the CSD is the coefficient of variation (CV) of the estimate, which is the standard error of the estimate divided by the estimate itself. For this survey, when the CV of an estimate is greater than 16.5% but less than or equal to 33.3%, the estimate is accompanied by the letter “E” to indicate that the data should be used with caution. When the CV of an estimate is greater than 33.3%, or if an estimate is based on 10 units or less, the cell estimate is replaced by the letter “F” to indicate that the entry is suppressed for reliability reasons.

7.3 Non-sampling errors

Besides sampling errors, non-sampling errors can occur at almost every step of a survey. Respondents may misunderstand the questions and answer them inaccurately, responses may be inadvertently entered incorrectly during data capture and errors may be introduced in the processing of data. These are all examples of non-sampling errors.

Over a large number of observations, randomly occurring errors will have little effect on estimates drawn from the survey. However, errors occurring systematically may contribute to biases in the survey estimates. Thus, much time and effort was devoted to reducing non-sampling errors in the survey. At the content development stage, extensive activities were undertaken to develop questions and response categories that would be well understood by respondents. The new questionnaire was tested thoroughly during several rounds of qualitative testing. In addition, many initiatives were taken in the field to encourage participation and reduce the number of non-response cases. Also important were the numerous quality assurance measures applied at the data collection, coding and processing stages to verify and correct errors in the data. Weighting adjustments were made by taking into account the different characteristics of non-respondents compared to respondents and thus minimizing any potential bias that may have been introduced.

The following paragraphs discuss the different types of non-sampling errors and the various measures used to minimize and correct these errors in the CSD.

Coverage errors

Coverage errors occur when the sampled population excludes people intended to be in the target population. Because the CSD is an extension of the 2016 long-form Census, it inherits the coverage problems of that survey, which in turn inherits the coverage problems of the 2016 Census. For more information about coverage errors on the census, please see the 2016 Census Coverage Technical Report, to be released on the Statistics Canada's website in 2019. For more information about the quality of census data, please consult Chapter 10 of the [Guide to the Census of Population, 2016](#).

Non-response errors

Non-response errors result from not being able to collect complete information on all units in the selected sample. Non-response produces errors in the survey estimates in two ways. First, non-respondents often have different characteristics from respondents, which can result in biased survey estimates if non-response is not corrected properly. In this case, the larger the non-response rate, the larger the bias may be. Secondly, if non-response is higher than expected, it reduces the effective size of the sample. As a result, the precision of the estimates decreases (the sampling error on the estimates will increase). This second aspect can be overcome by selecting a larger sample size initially. However, this will not reduce the potential bias in the estimates.

The scope of non-response varies. One level of non-response is item non-response, where the respondent does not respond to one or more questions, but has completed a significant pre-defined portion of the overall questionnaire. Generally, the extent of partial non-response was small in the CSD as a result of extensive qualitative reviews and testing of questionnaire items. There is also total non-response when the person selected to participate in the survey could not be contacted or did not participate once contacted. Weights of respondents were increased in order to compensate for those who did not respond, as described in Section 6.1.

To reduce the number of non-response cases, many initiatives were also undertaken prior to and during data collection (as mentioned in Chapter 4). The Statistics Canada website included a CSD web page which provided a series of questions and answers for respondents, as well as general information about the survey. At the outset of collection, each selected respondent received an introductory letter providing an overview of the survey and explaining the importance of participating. This was accompanied by a coloured [infographic](#) showing results of the last disability survey as well as a small leaflet in Braille. During data collection, tweets and messages containing graphics and information were regularly posted on Statistics Canada's Twitter account and Facebook page to promote the CSD.

In addition, in-depth interviewer training was conducted by experienced Statistics Canada staff. In conjunction with the training, detailed interviewer manuals were provided as a reference. All interviewers were under the direction of senior interviewers, who oversaw activities in the regional offices. Rigorous efforts to reach non-respondents through call-backs and follow-ups were also made by interviewers. Whenever possible, more than one phone number was provided for each selected respondent to maximize the chance of reaching the person during the collection period. These phone numbers were obtained through a record linkage with Statistics Canada's most recent residential telephone file.⁴²

During the collection period, several reminder letters were sent to respondents assigned to the online collection mode encouraging them to respond. Additionally, emails containing a link to the questionnaire and a personal secure access code were sent to respondents who preferred to respond online rather than on the phone and who gave the interviewer an email address when contacted. A table of final response rates obtained for the 2017 CSD is provided in Section 4.8 of this guide. The overall response rate for the survey was 69.5%. Response rates were highest in the older age groups, who were easier to reach by telephone. Approximately 40% of responses were obtained through self-reporting, compared with 60% through telephone interview.

Measurement errors

Measurement errors occur when the response provided differs from the real value. Such errors may be attributable to the respondent, the interviewer, the questionnaire, the collection method or the data processing system. Extensive efforts were made for the 2017 CSD to develop questions which would be understood, relevant and sensitive to respondents' needs.

Several rounds of qualitative testing were done for the CSD, in particular to test the new electronic questionnaire format and certain questions that were modified from 2012. Qualitative testing was carried out by Statistics Canada's Questionnaire Design Resource Centre (QDRC). To minimize measurement error, adjustments were made to question wording, categories of response, help text and question flows.

Many other measures were also taken to specifically reduce measurement error, including the use of skilled interviewers, extensive training of interviewers with respect to the survey procedures and content, and observation and monitoring of interviewers to detect problems due to questionnaire design or misunderstanding of instructions.

Processing errors

Processing errors may occur at various stages, including programming of the electronic questionnaire, data capture by the interviewer or the respondent, coding and data editing. Quality control procedures were applied to every stage of data processing to minimize this type of error. The CSD was conducted through an electronic questionnaire, either interviewer-led or via online self-reporting. A number of edits were built into the system to warn the respondent or the interviewer in the event of inconsistencies or unusual values, making it possible to correct them immediately (see Section 5.7).

At the data processing stage, a detailed set of procedures and edit rules were used to identify and correct any inconsistencies between the responses provided. For every step of data cleaning, a set of thorough, systematized procedures were developed to assess the quality of every variable on file and correct every error found. A snapshot of the output files was taken at each step and verification was made comparing files at the current and previous step. The programming of all edit rules were tested before being applied to the data. Examples of data processing verification included: 1) the review of all question flows, including very complex sequences, to ensure skip values were accurately assigned and distinguished from different types of missing values; 2) an in-depth qualitative review of open-ended and 'other-specify' responses for accurate and rigorous coding; 3) experienced supervision of coding to standardized classifications; and 4) review of all derived variables against their component variables to ensure accurate programming of derivation logic, including very complex derivations. For additional information on data processing, please consult Chapter 5 of this guide.

42. This file is built and maintained using various data sources, such as the census, Info-Direct, administrative records, lists from a variety of service providers, etc.

8. Differences between the 2017 and 2012 cycles of the Canadian Survey on Disability

Improvements were made to the methodology and content of the 2017 Canadian Survey on Disability (CSD) which affected time series comparability with 2012 CSD data. Differences between the 2017 and 2012 cycles are described below. Because of these changes, it is neither possible nor recommended to compare data over time between these two surveys. Any attempts at comparison will be considered invalid.

8.1 New census filter questions

As was the case in 2012, the 2017 CSD used the Disability Screening Questions (DSQ) to identify Canadians with disabilities. However, the population targeted to participate in the 2017 survey was much more inclusive than in 2012 due to changes to the filter questions (i.e., the new question on Activities of Daily Living in the 2016 Census). Responses to the census filter questions targeted people most likely to have a disability in order to create the CSD survey frame. The new questions introduced in 2016 greatly improved coverage of people with a disability compared with the questions asked in previous censuses. The old filter questions were not as effective in targeting people with a cognitive or mental health-related disability.

When the DSQ were being developed, new filter questions⁴³ had been developed and were shown to provide good coverage of all people with a disability, and, more specifically, those who were less well targeted by the filter questions used in previous censuses. However, given that it was too late to change the filter questions for the 2011 National Household Survey (NHS) (which, at the time, replaced the long-form census questionnaire), the 2012 CSD survey frame had to be created based on answers to the old filter questions. In the summer of 2014, the new DSQ filter questions were tested and compared with the old filter questions as part of the Census figure a1Content Test. The analysis clearly showed that the new questions were much more inclusive and the results of these tests aligned with the results of the previous tests conducted during development of the DSQ (Statistics Canada, 2016). Therefore, the new filter questions from the DSQ were used in the 2016 Census long-form questionnaire to replace the old questions. As a result, the 2017 CSD survey frame was created to include all respondents aged 15 and over who, in response to the new census filter questions, reported sometimes, often or always having difficulty doing certain activities of daily living.

Certain data users may seek to compare the prevalence of disability between the 2012 and 2017 surveys. However, given the improvements made to the coverage of people with a disability (through the use of the new filter questions in the 2016 Census), a comparison would not be valid. In other words, the increased prevalence of disability in the 2017 CSD is attributable in large part to the improved coverage of people with a disability. It is not possible to quantify the proportion of the increase due to changes made to the filter questions.

This methodological change was the last improvement required to complete the full implementation of the DSQ in the CSD survey frame.

8.2 Changes to the CSD collection methods

As discussed in Section 4.3, data collection for the 2017 CSD was conducted using an electronic questionnaire that could either be self-administered (rEQ mode) online or completed over the phone with the assistance of an interviewer. Approximately two in five respondents (40%) opted for the self-administered online collection. In 2012, data collection consisted primarily of telephone interviews, as well as a few pen-and-paper interviews in the Northwest Territories. This change in collection mode may have affected responses. For example, the fact that those who answered the questions in rEQ mode could see all the possible response choices, as opposed to those who have the choices read to them over the phone by an interviewer, can have an impact on the responses. This is called the “mode effect.”

Thus, changes to the collection methods between the 2012 and 2017 CSD is another factor that could affect the comparability of the data between these two surveys.

43. These filter questions are an integral part of the DSQ.

8.3 Lag time between the 2016 Census and the 2017 CSD

As mentioned above, the CSD survey frame was established based on the responses to questions on activities of daily living in the 2016 Census long-form questionnaire and the CSD was conducted 10 to 16 months later. While the time lag in this instance was shorter than the time between the 2011 NHS and the 2012 CSD (16 to 20 months), it is not inconsequential. The possibility that a respondent who reported a difficulty in the census no longer experienced it at the time of the CSD or, conversely, was institutionalized, deceased or no longer living in the country is significant. As a result, to prevent underestimating the prevalence of disability due to these losses in the YES population,⁴⁴ the weights of the units in the NO population (for whom no collection was done) were adjusted downward to account for people who may have left the country or died between the census and CSD data collection. Given that this adjustment is related to the length of the time lag, it will have an effect on data comparisons. For more information on the weighting used for the CSD, please see Section 6.1.

In addition, some of the information collected in the census and annexed to the CSD file (e.g., data on labour force status, income, household composition) may have changed in the time between the two surveys. Even though the time lag between the 2016 Census and the 2017 CSD was shorter than the one between the 2011 NHS and the 2012 CSD, it still has an impact on the data.

8.4 Other methodological changes

The 2012 CSD survey frame was established based on responses to the 2011 NHS, whereas the 2017 CSD survey frame was based on responses to the 2016 Census long-form questionnaire. Given the voluntary nature of the 2011 NHS, the response rate was lower than that of the mandatory 2016 Census. Although Statistics Canada adapted its collection and estimation procedures in order to mitigate, to the extent possible, the effect of non-response for the 2011 NHS, the difference in response rates between the 2011 NHS (77.2%) and the 2016 Census (97.8% for the long-form) may still have an impact on the comparison of results between the 2012 and 2017 CSD.

8.5 Changes to CSD content

Compared to the 2012 CSD, the content of the 2017 CSD has been expanded to include many new indicators, has been revised and updated in many respects and has also been modestly cut back in a few subject areas.

Several new survey modules were added for 2017, covering a wide range of new data priorities, as described more fully in Chapter 2. In addition, almost 300 census variables were linked to the 2017 CSD compared to the 200 variables linked in 2012. Thus, for many 2017 content areas, there are no comparative indicators from 2012.

Many survey questions were also updated in 2017 to better reflect current realities and to correct known areas for improvement in the 2012 CSD. For example, the section on aids and assistive devices underwent many updates to capture the increasing usage of certain electronic technologies, such as devices with voice recognition software, smartwatches, tablets and e-books. Other revisions included questions about the age of onset of disabilities, which were greatly strengthened for 2017. In 2012, respondents were asked to specify up to two main conditions underlying their disability and asked about the age of onset for each of these conditions. For 2017, separate age of onset and age of limitation questions were asked for each of the 10 disability types in order to obtain more accurate data for persons with multiple disabilities. Also, where disability was the result of an accident or injury, new indicators were added to differentiate between workplace, home, motor vehicle and sports related causes. Finally, labour modules were also substantially reorganized in 2017. Questions were asked in a new order that better reflected standard employment indicators found on other labour surveys by Statistics Canada. In addition, modifications were made to the classification of retirement for 2017 to better capture the changing complexities in the patterns of work among older workers. Due to these many improvements, indicators across a whole spectrum of 2017 survey modules are not historically comparable with 2012 data.

For the many survey questions which were carried forward from 2012 to 2017 essentially unchanged in content, substantial formatting changes to these questions were required in order to adapt the survey for the Internet,

44. The YES and NO populations are explained in Chapter 3 on sample design.

self-reporting EQ screen environment. For example, instructions that were once directed at interviewers had to be tailored as on-screen help text. Also, the “Refusal” option once possible for interviewers to record, was no longer available for EQ questions and the “Don’t know” option was only possible for a small minority of EQ questions (where it was available as a response category).

It should also be noted that some of the content from the 2012 CSD was removed in 2017 in order to balance the respondent burden created by extensive new content additions.

These many changes to questionnaire content, wording, ordering and formatting mean that comparisons should not be made between the 2012 and the 2017 CSD data.

8.6 Summary and recommendation

As discussed above, the main differences between the 2017 and 2012 CSD can be summarized as follows:

- Changes to the 2016 Census filter questions provided increased coverage of persons with a disability for the 2017 CSD, especially persons with a cognitive or mental health-related disability.
- Data collection for the 2017 CSD was conducted using an electronic questionnaire, which was self-administered online by some respondents and completed by phone with the assistance of an interviewer for the others. This change could affect the collected data relative to the 2012 CSD, which was entirely conducted by telephone interview.⁴⁵
- The time lag between the 2016 Census and the 2017 CSD was shorter than the one between the 2011 NHS and the 2012 CSD. Nonetheless, in both cases, survey weights of the NO sample had to be adjusted to avoid underestimating the prevalence of disability due to losses caused by deaths, institutionalization and people who left the country. The adjustment, which took into account the duration of the time lag, may have a slight impact on comparisons between the two cycles.
- The 2017 CSD survey frame was established based on the mandatory 2016 Census, which had a response rate of 97.8% (for the long-form), while the 2012 CSD frame was based on the voluntary 2011 NHS, which had a response rate of 77.2%. This change may have had an impact on the results of the 2017 CSD.
- Finally, changes to questionnaire content, wording, ordering and formatting were implemented in order to focus on new data priorities and adapt to the new EQ environment, which could potentially affect historical comparisons of indicators.

These changes, particularly the ones to the census filter questions, have a strong impact on data comparability. As a result, it is neither possible nor recommended to compare the 2017 and 2012 CSD data. Any attempts at comparison will be considered invalid.

45. With a very small number of cases having been conducted by in-person interviews with paper questionnaires.

9. Data dissemination

9.1 Data products and services

Data for the 2017 Canadian Survey on Disability (CSD) were released publicly on November 28, 2018. Included in the release on that day were: an analytical article to provide a portrait of adults with disabilities in Canada, an infographic of key survey findings and a set of data tables on the prevalence of disability among adults in Canada, by age and sex, for each of the provinces and territories. Tables also included data on the types and severity of disabilities. A short video using sign language and captions to explain some of the survey results was also posted. These items are available to the public free of charge on Statistics Canada's website. Later releases for the 2017 CSD may include additional data tables and analytical products. The November 28, 2018 release was announced on Statistics Canada's official news site, *The Daily*, as well as on Facebook and Twitter.

Starting in 2019, researchers across the country will be able to conduct in-depth analyses using the CSD analytical data files housed at Statistics Canada's Research Data Centres (RDCs). RDCs are located at over 30 Canadian universities and at the Federal Research Data Centre in Ottawa. In order to access the files, researchers must undergo a research and ethics committee review for approval. Their use of the data must be conducted according to Statistics Canada policies, guidelines and standards. For instance, only aggregate statistical estimates that conform to the confidentiality provisions of the *Statistics Act* will be released outside of Statistics Canada. For more information, please consult [The Research Data Centres \(RDC\) Program](#).

Data for the 2017 CSD will also be made available through a subscription service called the Real Time Remote Access (RTRA) system, provided for a fee to clients associated with an academic institution, a government department or a non-profit organization. This online service allows users to run SAS software programs, in real time, against microdata sets located in a central and secure location. Researchers using the RTRA system do not gain direct access to the micro-data and cannot view the content of the micro-data file.⁴⁶ Instead, users submit SAS programs to extract results in the form of aggregated frequency tables at the national, provincial or territorial level only (no sub-provincial tables for CSD data⁴⁷). Using a secure username and password, the RTRA provides around the clock access to survey results from any computer with Internet access. Confidentiality rules and reliability standards are applied to all requests in an automated way by the RTRA system allowing for rapid access to results. An RTRA agent can be reached by [RTRA email](#) or please visit [The Real Time Remote Access \(RTRA\) system](#) for more information on how to obtain a user account.

In addition to these data products and services, clients can request custom data tables from Statistics Canada on a fee-for-service basis. All such requests are screened for confidentiality and the aggregate data are rounded before being released to clients. Statistics Canada also delivers special CSD presentations and webinars to key stakeholders and at various conferences. For more information, please contact Statistics Canada [Client Services](#) or call 1-800-263-1136.

9.2 Reference products

Information about the 2017 CSD is available on Statistics Canada's website. Statistics Canada provides an [Integrated Metadata Base](#) (IMDB) on-line for all surveys that it conducts, including the 2017 CSD. The purpose of the IMDB is to provide information that will assist the public in interpreting Statistics Canada's published data. The information (also known as metadata) is provided to ensure an understanding of the basic concepts that define the data, including variables and classifications, the underlying statistical methods and surveys, and key aspects of the data quality. Direct access to the [CSD questionnaire](#) is also provided.

In addition to the IMDB, the present Concepts and Methods Guide is provided online for a detailed discussion of survey content, sampling design, data collection and processing, weighting of the data, data quality, differences between the 2017 CSD and the 2012 CSD, and dissemination products for the CSD.

46. Although users cannot view the data files, they are provided with data dictionaries which contain full descriptions for all the variables on the files but without any data frequencies (called the "zero-frequency" versions of the data dictionaries).

47. Based on RTRA confidentiality standards.

For researchers using the analytical files in Statistics Canada’s RDCs, an RDC User Guide is available with detailed step-by-step instructions for accessing and using the data files. The RDC User Guide describes the structure of the data files in detail, including all core variables, derived variables and linkages to the census. Detailed data dictionaries provide information for all variables available. The RDC User Guide also provides detailed guidelines for tabulation and statistical analysis, how to apply the necessary weights to the data, information on software packages available and guidelines for the release of data, such as rounding rules. The process of estimating the reliability of estimates, both quantitative and qualitative, is covered in detail.

For CSD clients who are not RDC researchers, the detailed CSD Data Dictionaries of variables are also available in a special reference-only format (called the “zero-frequency versions”). These products are designed for use by the general public and include all variable definitions and other content information, but exclude any data frequencies. These reference documents can assist CSD clients to prepare their data specifications for any custom requests for tabulations to be prepared by Statistics Canada employees. For details on how to obtain the zero-frequency CSD Data Dictionaries, please contact Statistics Canada [Client Services](#) or call 1-800-263-1136.

9.3 Disclosure control

Statistics Canada is prohibited by law from releasing any data that would divulge information obtained under the *Statistics Act* that relates to any identifiable person, business or organization without the prior knowledge or the consent in writing of that person, business or organization. Various confidentiality rules are applied to all data that are released or published to prevent the publication or disclosure of any information deemed confidential. If necessary, data are suppressed to prevent direct or residual disclosure of identifiable data.

Appendix A – Flow chart of the 2017 CSD questionnaire modules

Figure A.1
2017 Canadian Survey on Disability questionnaire modules



1. Agility includes flexibility and dexterity.

2. Beginning of modules for employed population.

3. Beginning of modules for unemployed population.

4. Beginning of modules for population not in the labour force.

5. Employment-related modules for all groups.

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Appendix B – Identifying disability types

The 2017 Canadian Survey on Disability (CSD), covering persons aged 15 years or over, used the Disability Screening Questions (DSQ) to identify each disability type discussed below.

Seeing disabilities

Persons with a seeing disability are identified as persons whose daily activities are limited because of difficulties with their ability to see. Two questions are used to identify persons with a seeing disability. The first question asked about the level of difficulty a person has in seeing (with their glasses or contact lenses on, where applicable). Then, for those with at least some difficulty seeing, a subsequent question asked how often this difficulty limited their daily activities (see table below).

Among persons who indicated that they have at least some difficulty seeing (with their glasses or contact lenses on, where applicable), those who reported that this difficulty limited their daily activities were defined as having a seeing disability. One exception to this is where a person reported a specific combination of “some” difficulty seeing but “rarely” being limited in their daily activities – this group was not identified as having a seeing disability. The table below summarizes the combination of responses to the two questions that served to classify someone as having a seeing disability.

Table B.1
Combination of answers on the Disability Screening Questions used to identify a seeing disability¹

1. Which of the following best describes your ability to see? (with your glasses or contact lenses)	2. How often does this condition limit your daily activities?				
	Never	Rarely	Sometimes	Often	Always
No difficulty seeing	No seeing disability ²	No seeing disability ²	No seeing disability ²	No seeing disability ²	No seeing disability ²
Some difficulty seeing	No seeing disability	No seeing disability	Seeing disability	Seeing disability	Seeing disability
A lot of difficulty seeing	No seeing disability	Seeing disability	Seeing disability	Seeing disability	Seeing disability
Are legally blind or blind	No seeing disability	Seeing disability	Seeing disability	Seeing disability	Seeing disability

1. Respondents are asked about difficulties or conditions that have lasted or are expected to last for six months or more.

2. The follow-up question about limitations in daily activities was not asked of respondents who reported no difficulty seeing.

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Hearing disabilities

Persons with a hearing disability are identified as persons whose daily activities are limited because of difficulties with their ability to hear. Two questions are used to identify persons with a hearing disability. The first question asked about the level of difficulty a person has in hearing (with their hearing aid or cochlear implant, where applicable). Then, for those with at least some difficulty hearing, a subsequent question asked how often this difficulty limited their daily activities (see table below).

Among persons who indicated that they have at least some difficulty hearing (even with their hearing aid or cochlear implant), those who reported that this difficulty limited their daily activities were defined as having a hearing disability. One exception to this is where a person reported a specific combination of “some” difficulty hearing but “rarely” being limited in their daily activities – this group was not identified as having a hearing disability. The table below summarizes the combination of responses to the two questions that served to classify someone as having a hearing disability.

Table B.2
Combination of answers on the Disability Screening Questions used to identify a hearing disability¹

1. Which of the following best describes your ability to hear? (with your hearing aid or cochlear implant)	2. How often does this condition limit your daily activities?				
	Never	Rarely	Sometimes	Often	Always
No difficulty hearing	No hearing disability ²	No hearing disability ²	No hearing disability ²	No hearing disability ²	No hearing disability ²
Some difficulty hearing	No hearing disability	No hearing disability	Hearing disability	Hearing disability	Hearing disability
A lot of difficulty hearing	No hearing disability	Hearing disability	Hearing disability	Hearing disability	Hearing disability
Cannot hear at all or are Deaf	No hearing disability	Hearing disability	Hearing disability	Hearing disability	Hearing disability

1. Respondents are asked about difficulties or conditions that have lasted or are expected to last for six months or more.

2. The follow-up question about limitations in daily activities was not asked of respondents who reported no difficulty hearing.

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Mobility disabilities

Persons with a mobility disability are identified as persons whose daily activities are limited because of difficulties with their ability to move around, including walking or using stairs. Three questions are used to identify persons with a mobility disability. The first question asked about the level of difficulty a person has with walking on a flat surface for 15 minutes without resting (with the use of an aid providing minimal support, such as a cane, walking stick or crutches, where applicable). The second question asked if they had difficulty walking up or down a flight of stairs, about 12 steps without resting (with the use of an aid such as a cane, walking stick or crutches, where applicable). Then, for those who reported at least some difficulty either walking or with stairs, a third question asked how often this difficulty limited their daily activities (see table below).

Among persons who indicated that they have at least some difficulty with mobility (with the use of an aid providing minimal support, such as a cane, where applicable) those who reported that this difficulty limited their daily activities were defined as having a mobility disability. One exception to this is where a person reported a specific combination of at most “some” difficulty walking on a flat surface or walking up and down a flight of stairs but “rarely” being limited in their daily activities – this group was not identified as having a mobility disability. The table below summarizes the combination of responses to the three questions that served to classify someone as having a mobility disability.

Table B.3
Combination of answers on the Disability Screening Questions used to identify a mobility disability¹

1. How much difficulty do you have walking on a flat surface for 15 minutes without resting? ² 2. How much difficulty to you have walking up or down a flight of stairs, about 12 steps, without resting? ²	Where Question 1 or Question 2 indicates at least some difficulty... 3. How often does this difficulty limit your daily activities?				
	Never	Rarely	Sometimes	Often	Always
No difficulty	No mobility disability ³	No mobility disability ³	No mobility disability ³	No mobility disability ³	No mobility disability ³
Some difficulty	No mobility disability	No mobility disability	Mobility disability	Mobility disability	Mobility disability
A lot of difficulty	No mobility disability	Mobility disability	Mobility disability	Mobility disability	Mobility disability
Cannot do at all	No mobility disability	Mobility disability	Mobility disability	Mobility disability	Mobility disability

1. Respondents are asked about difficulties or conditions that have lasted or are expected to last for six months or more.

2. With the use of an aid providing minimal support, such as a cane, a walking stick or crutches, where applicable.

3. The follow-up question about limitations in daily activities was not asked of respondents who reported no difficulty walking or with stairs.

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Flexibility disabilities

Persons with a flexibility disability are identified as persons whose daily activities are limited because of difficulties bending down or reaching. Three questions are used to identify persons with a flexibility disability. The first question asked about the level of difficulty a person has with bending down and picking up an object from the floor. The second question asked if they had difficulty reaching in any direction, for example, above their head. Then, for those who reported at least some difficulty with bending down or reaching, a subsequent question asked how often this difficulty limited their daily activities (see table below).

Among persons who indicated that they have at least some difficulty with flexibility, those who reported that this difficulty limited their daily activities were defined as having a flexibility disability. One exception to this is where a person reported a specific combination of at most “some” difficulty bending down or reaching but “rarely” being limited in their daily activities – this group was not identified as having a flexibility disability. The table below summarizes the combination of responses to the three questions that served to classify someone as having a flexibility disability.

Table B.4
Combination of answers on the Disability Screening Questions used to identify a flexibility disability¹

1. How much difficulty do you have bending down and picking up an object from the floor? 2. How much difficulty do you have reaching in any direction, for example, above your head?	Where Question 1 or Question 2 indicates at least some difficulty... 3. How often does this difficulty limit your daily activities?				
	Never	Rarely	Sometimes	Often	Always
No difficulty	No flexibility disability ²	No flexibility disability ²	No flexibility disability ²	No flexibility disability ²	No flexibility disability ²
Some difficulty	No flexibility disability	No flexibility disability	Flexibility disability	Flexibility disability	Flexibility disability
A lot of difficulty	No flexibility disability	Flexibility disability	Flexibility disability	Flexibility disability	Flexibility disability
Cannot do at all	No flexibility disability	Flexibility disability	Flexibility disability	Flexibility disability	Flexibility disability

1. Respondents are asked about difficulties or conditions that have lasted or are expected to last for six months or more.

2. The follow-up question about limitations in daily activities was not asked of respondents who reported no difficulty either bending down and picking up an object or reaching.

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Dexterity disabilities

Persons with a dexterity disability are identified as persons whose daily activities are limited because of difficulties using their fingers to grasp small objects. Two questions are used to identify persons with a dexterity disability. The respondent is asked first about the level of difficulty they have using their fingers to grasp small objects like a pencil or scissors. Then, for those who reported at least some difficulty, a subsequent question asks how often this difficulty limited their daily activities (see table below).

Among persons who indicated that they have at least some difficulty with dexterity, those who reported that this difficulty limited their daily activities were defined as having a dexterity disability. One exception to this is where a person reported a specific combination of “some” difficulty grasping small objects with their fingers but “rarely” being limited in their daily activities – this group was not identified as having a dexterity disability. The table below summarizes the combination of responses to the three questions that served to classify someone as having a dexterity disability.

Table B.5
Combination of answers on the Disability Screening Questions used to identify a dexterity disability¹

1. How much difficulty do you have using your fingers to grasp small objects like a pencil or scissors?	2. How often does this difficulty limit your daily activities?				
	Never	Rarely	Sometimes	Often	Always
No difficulty	No dexterity disability ²	No dexterity disability ²	No dexterity disability ²	No dexterity disability ²	No dexterity disability ²
Some difficulty	No dexterity disability	No dexterity disability	Dexterity disability	Dexterity disability	Dexterity disability
A lot of difficulty	No dexterity disability	Dexterity disability	Dexterity disability	Dexterity disability	Dexterity disability
Cannot do at all	No dexterity disability	Dexterity disability	Dexterity disability	Dexterity disability	Dexterity disability

1. Respondents are asked about difficulties or conditions that have lasted or are expected to last for six months or more.

2. The follow-up question about limitations in daily activities was not asked of respondents who reported no difficulty using their fingers to grasp small objects.

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Developmental disabilities

Persons with a developmental disability are identified as persons who have been diagnosed with this condition, regardless of the level of difficulty or the frequency of the activity limitations reported. One question is used to identify persons with a developmental disability. Respondents were asked if a doctor, psychologist or other health care professional ever said that they had a developmental disability or disorder. Where the respondent said “yes” to this question, they were identified as having a developmental disability. The table below identifies the question that served to classify someone as having a developmental disability.

Table B.6
Combination of answers on the Disability Screening Questions used to identify a developmental disability¹

1. Has a doctor, psychologist or other health care professional ever said that you had a developmental disability or disorder? This may include Down syndrome, autism, Asperger syndrome, mental impairment due to lack of oxygen at birth, etc.	Yes	No
	Developmental disability	No developmental disability

1. Respondents are asked about difficulties or conditions that have lasted or are expected to last for six months or more.

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Mental health-related disabilities

Persons with a mental health-related disability are identified as persons whose daily activities are limited because of difficulties with an emotional, psychological or mental health condition. Three questions are used to identify persons with a mental health-related disability. The first question asked the respondent if they had any emotional, psychological or mental health conditions. For those who said “yes” to this question, a subsequent question asked how often their daily activities were limited by their condition (when using medication or therapy, where applicable). Finally, for those reporting such a limitation, a follow-up question asked how much difficulty they have in their daily activities when they are experiencing this condition (see table below).

Among persons who indicated that they had an emotional, psychological or mental health condition, those who reported that this condition limited their daily activities were defined as having a mental health-related disability. One exception to this is where a person reported a specific combination of “rarely” being limited in their daily activities along with experiencing “some” difficulty or “no difficulty” with their daily activities – this group was not identified as having a mental health-related disability. The table below summarizes the combination of responses to the three questions that served to classify someone as having a mental health disability.

Table B.7
Combination of answers on the Disability Screening Questions used to identify a mental health-related disability¹

3. When you are experiencing this condition, how much difficulty do you have with your daily activities? ²	Where Question 1 = Yes ...				
	2. How often are your daily activities limited by this condition? ²				
	Never	Rarely	Sometimes	Often	Always
No difficulty	No mental health-related disability ³	No mental health-related disability	Mental health-related disability	Mental health-related disability	Mental health-related disability
Some difficulty	No mental health-related disability ³	No mental health-related disability	Mental health-related disability	Mental health-related disability	Mental health-related disability
A lot of difficulty	No mental health-related disability ³	Mental health-related disability	Mental health-related disability	Mental health-related disability	Mental health-related disability
Cannot do most activities	No mental health-related disability ³	Mental health-related disability	Mental health-related disability	Mental health-related disability	Mental health-related disability

1. Respondents are asked about difficulties or conditions that have lasted or are expected to last for six months or more.

2. When using medication or therapy, where applicable.

3. The follow-up Question 3 about level of difficulty in daily activities was not asked of respondents who reported never being limited in their daily activities in Question 2.

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Memory disabilities

Persons with a memory disability are identified as persons whose daily activities are limited because of difficulties with ongoing memory problems or periods of confusion. Three questions are used to identify persons with a memory disability. The first question asked the respondent if they had any ongoing memory problems or periods of confusion, excluding occasional forgetfulness such as not remembering where they put their keys. For those who said “yes” to this question, a subsequent question asked how often their daily activities were limited by this problem (when using medication or therapy, where applicable). Finally, for those reporting such a limitation, a follow-up question asked how much difficulty they have in their daily activities when they are experiencing this problem (see table below).

Among persons who indicated that they had ongoing memory problems or periods of confusion, those who reported that this problem limited their daily activities were defined as having a memory disability. One exception to this is where a person reported a specific combination of “rarely” being limited in their daily activities along with having “some” difficulty or “no difficulty” with their daily activities – this group was not identified as having a memory disability. The table below summarizes the combination of responses to the three questions that served to classify someone as having a memory disability.

Table B.8
Combination of answers on the Disability Screening Questions used to identify a memory disability¹

1. Do you have any ongoing memory problems or periods of confusion? Exclude occasional forgetfulness such as not remembering where you put your keys.					
3. How much difficulty do you have with your daily activities because of this problem? ²	Where Question 1 = Yes ...				
	2. How often are your daily activities limited by this problem? ²				
	Never	Rarely	Sometimes	Often	Always
No difficulty	No memory disability ³	No memory disability	Memory disability	Memory disability	Memory disability
Some difficulty	No memory disability ³	No memory disability	Memory disability	Memory disability	Memory disability
A lot of difficulty	No memory disability ³	Memory disability	Memory disability	Memory disability	Memory disability
Cannot do most activities	No memory disability ³	Memory disability	Memory disability	Memory disability	Memory disability

1. Respondents are asked about difficulties or conditions that have lasted or are expected to last for six months or more.

2. When using medication or therapy, where applicable.

3. The follow-up Question 3 about level of difficulty in daily activities was not asked of respondents who reported never being limited in their daily activities in Question 2.

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Learning disabilities

Persons with a learning disability are identified as persons whose daily activities are limited because of a self-identified learning difficulty or a learning disability diagnosed by a health care professional. Four questions are used to identify persons with a learning disability. The first question asked respondents if they thought they had a condition that makes it difficult in general for them to learn. Respondents were then asked if a teacher, doctor or other health care professional ever said they had a learning disability. For those who said “yes” to either of these two questions, a subsequent question asked how often this condition limited their daily activities. Finally, for those reporting such a limitation, a follow-up question asked how much difficulty they experienced in their daily activities because of this condition (see table below).

Among persons who indicated a self-identified or diagnosed learning condition, those who reported that this condition limited their daily activities were defined as having a learning disability. One exception to this is where a person reported a specific combination of “rarely” being limited in their daily activities along with having “some” difficulty or “no difficulty” with daily activities – this group was not identified as having a learning disability. The table below summarizes the combination of responses to the four questions that served to classify someone as having a learning disability.

Table B.9
Combination of answers on the Disability Screening Questions used to identify a learning disability¹

1. Do you think you have a condition that makes it difficult in general for you to learn? This may include learning disabilities such as dyslexia, hyperactivity, attention problems, as well as other conditions.					
2. Has a teacher, doctor or other health care professional ever said that you had a learning disability?					
4. How much difficulty do you have with your daily activities because of this condition? ²	Where Question 1 or Question 2 = Yes ...				
	3. How often are your daily activities limited by this condition?				
	Never	Rarely	Sometimes	Often	Always
No difficulty	No learning disability ²	No learning disability	Learning disability	Learning disability	Learning disability
Some difficulty	No learning disability ²	No learning disability	Learning disability	Learning disability	Learning disability
A lot of difficulty	No learning disability ²	Learning disability	Learning disability	Learning disability	Learning disability
Cannot do most activities	No learning disability ²	Learning disability	Learning disability	Learning disability	Learning disability

1. Respondents are asked about difficulties or conditions that have lasted or are expected to last for six months or more.

2. The follow-up Question 4 about level of difficulty in daily activities was not asked of respondents who reported never being limited in their daily activities in Question 3.

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Pain-related disabilities

Persons with a pain-related disability are identified as persons whose daily activities are limited because of pain that is always present or due to periods of pain that reoccur from time to time. Four questions are used to identify persons with a pain-related disability. The first question asked respondents if they have pain that is always present. Respondents were then asked if they had periods of pain that reoccur from time to time. For those who said “yes” to either of these two questions, a subsequent question asked how often this pain limited their daily activities. Finally, for those reporting such a limitation, a follow-up question asked how much difficulty they have in their daily activities when they are experiencing this pain (based on when the respondent is using medication or therapy, where applicable) (see table below).

Among persons who indicated that they had constant or reoccurring pain, those who reported that this pain limited their daily activities were defined as having a pain-related disability. One exception to this is where a person reported a specific combination of “rarely” being limited in their daily activities along with experiencing “some” difficulty or “no difficulty” with daily activities – this group was not identified as having a pain-related disability. The table below summarizes the combination of responses to the four questions that served to classify someone as having a pain-related disability.

Table B.10
Combination of answers on the 2017 Disability Screening Questions used to identify a pain-related disability¹

1. Do you have pain that is always present?					
2. Do you have periods of pain that reoccur from time to time?					
4. When you are experiencing pain, how much difficulty do you have with your daily activities? ²	Where Question 1 or Question 2 = Yes ...				
	3. How often does this pain limit your daily activities? ²				
	Never	Rarely	Sometimes	Often	Always
No difficulty	No pain-related ³ disability	No pain-related disability	Pain-related disability	Pain-related disability	Pain-related disability
Some difficulty	No pain-related ³ disability	No pain-related disability	Pain-related disability	Pain-related disability	Pain-related disability
A lot of difficulty	No pain-related ³ disability	Pain-related disability	Pain-related disability	Pain-related disability	Pain-related disability
Cannot do most activities	No pain-related ³ disability	Pain-related disability	Pain-related disability	Pain-related disability	Pain-related disability

1. Respondents are asked about difficulties or conditions that have lasted or are expected to last for six months or more.

2. When using medication or therapy, where applicable.

3. The follow-up Question 4 about level of difficulty in daily activities was not asked of respondents who reported never being limited in their daily activities in Question 3.

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Unknown disabilities

Persons with an unknown disability are identified as persons whose daily activities are limited because of any long-term health problem or condition other than the 10 specific types of disabilities identified by the survey (seeing, hearing, mobility, flexibility, dexterity, pain, learning, developmental, mental health and memory disabilities). Two questions are used to identify persons with an unknown disability. First, respondents were asked if they have any other health problem or long-term condition (not already reported) that has lasted or is expected to last for six months or more. Where the respondent said “yes” to this question, a subsequent question asked how often this health problem or condition limited their daily activities (see chart below). The survey does not ask about level of difficulty for the unknown type.

It should be noted that this unknown type of disability is counted only if no other limitation has been reported under the 10 specific types of disabilities listed above. It was observed that respondents with a disability that fell under one of the 10 types tended to report the disease or condition that caused their disability under “other”. Double counting of disability types was thus avoided.

As such, among persons who indicated that they have another long-term health problem or condition, and for whom no other limitation was reported under the 10 specific types of disabilities listed above, those who reported that this other health problem or condition limited their daily activities “sometimes”, “often” or “always” were defined as having an unknown disability. The table below summarizes the combination of responses to the two questions that served to classify someone as having an unknown disability.

Table B.11
Combination of answers on the Disability Screening Questions used to identify an unknown disability

1. Do you have any other health problem or long-term condition that has lasted or is expected to last for six months or more?	2. How often does this health problem or condition limit your daily activities?				
	Never	Rarely	Sometimes	Often	Always
Yes ¹	No unknown disability	No unknown disability	Unknown disability¹	Unknown disability¹	Unknown disability¹
No	No unknown disability ²	No unknown disability ²	No unknown disability ²	No unknown disability ²	No unknown disability ²

1. A person is identified as having an “unknown” disability only if he or she reports another long-term health problem or condition in Question 1; is limited in terms of daily activities “sometimes”, “often” or “always” in the follow-up Question 2; and has reported no other disability under the 10 specific disability types measured by the survey.

2. The follow-up Question 2 was not asked of respondents who reported not having any other long-term health problem or condition in Question 1.

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Appendix C – Disability severity indicators

Severity scores and classes

Severity scores were developed using the Disability Screening Questions (DSQ). The method used to derive a score for each disability type and a global score that takes all disability types into account is described below.

The scores had to satisfy the following three criteria:

- it had to increase with the level of difficulty associated with the disability;
- it had to increase with the frequency of the activity limitation;
- and for the global score:
 - it also had to increase with the number of disability types.

In order to facilitate usage of the severity scores, severity classes were established for each disability type and at the global level.

Score for each disability type

Using a scoring grid that takes into account both the intensity of the difficulties (no difficulty, some difficulty, a lot of difficulty, or cannot do) and the frequency of the activity limitations (never, rarely, sometimes, often, or always), a score is assigned to each of the 10 disability types. The score increases with the level of difficulty and the frequency of the limitation. Hence, a person who reports being unable to do an activity and always being limited in his or her activities will have the maximum score for that disability type. The scoring grid developed for each disability type is shown below. In the grid, the most severe responses have higher scores, moderate responses have mid-range scores, and mild responses have lower scores.

Table C.1
Scoring grid based on intensity of difficulty and frequency of daily activity limitations

Intensity of difficulty	Frequency of daily activity limitations				
	Never	Rarely	Sometimes	Often	Always
No difficulty	0	0	2 ¹	3 ¹	4 ²
Some difficulty	0	0	4 ²	6 ²	12 ³
A lot of difficulty	0	3 ¹	6 ²	18 ³	20 ³
Cannot do	0	4 ²	12 ³	20 ³	24 ³

1. Mild responses

2. Moderate responses

3. Severe responses

Source: Statistics Canada, Canadian Survey on Disability, 2017.

The score for each disability type is then standardized to a value between 0 and 1. This is done by dividing the score in each cell by the maximum score of 24. The table below shows the standardized score for each disability type.

Table C.2
Standardized score based on intensity of difficulty and frequency of daily activity limitations

Intensity of difficulty	Frequency of daily activity limitations				
	Never	Rarely	Sometimes	Often	Always
No difficulty	0	0	0.0833 ¹	0.1250 ¹	0.1667 ²
Some difficulty	0	0	0.1667 ²	0.2500 ²	0.5000 ³
A lot of difficulty	0	0.1250 ¹	0.2500 ²	0.7500 ³	0.8333 ³
Cannot do	0	0.1667 ²	0.5000 ³	0.8333 ³	1.0000 ³

1. Mild responses

2. Moderate responses

3. Severe responses

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Special cases

The scoring grid shown above was used for the majority of the disability types, but it had to be adapted for three special situations: the unknown type, developmental disabilities and the mobility and flexibility types.

First, the DSQ had no questions on the intensity of the difficulty for the unknown type. Consequently, only those who reported being limited “sometimes”, “often” or “always” were considered to have a disability. Since, by definition, people in the unknown type have only one type of disability, we examined the intensity distribution for other people who had only one of the 10 disability types. We found that in most cases, the intensity level was “some difficulty”. For the unknown type, therefore, we used the scoring grid shown in Table C.2 and set the intensity level at “some difficulty”. The “sometimes” responses were hence given 0.1667 points, the “often” responses 0.25 points, and the “always” responses 0.50 points.

The second special case concerns developmental disabilities. For this disability type, a person who reports being diagnosed with this disorder is automatically deemed to have a disability, regardless of the level of difficulty and the frequency of the limitations reported. However, in calculating a score for this type, we want to avoid situations where people with a developmental disability have a score that is very low or 0. We therefore set a minimum score for people with a developmental disability. We use the grid to determine the score, but if the reported frequency of the limitation is “never”, or if it is “rarely” combined with “no difficulty” or “some difficulty”, we set the score at 0.0833, which is the minimum score that a person can have for any other disability type. We assigned a minimum score in about one of every six cases of persons with a developmental disability.

The third special case relates to the mobility and flexibility types. For these two types, we have two questions on the intensity of the difficulty, instead of just one question. To calculate the score for these two types, we used the higher intensity reported on the two questions, combined with the frequency of the limitation, to determine the score. The decision was made to use the higher intensity for the two questions, rather than an average value for example, because we wanted each of the 10 disability types to have the same importance in the calculation of the global score. The fact that we needed two questions to establish whether the respondent has difficulty for mobility or for flexibility should not lower the person’s score when the answer to one question is “no difficulty” and the answer to the other is “cannot do”, for example.

Severity class for each disability type

For **each disability type**, we define two severity classes: less severe and more severe. People with a score of 0.5 or more for a disability type are assigned to the more severe class, and others are assigned to the less severe class. People with a score of 0 for a disability type are classified as not having that disability type.

We created a severity class variable for each disability type: **DVIS_CL** for seeing, **DHEAR_CL** for hearing, **DMOB_CL** for mobility, **DFLEX_CL** for flexibility, **DDEX_CL** for dexterity, **DPAIN_CL** for pain, **DLRN_CL** for learning, **DDEV_CL** for developmental, **DMENT_CL** for mental health, **DMEM_CL** for memory, and **DUNK_CL** for unknown. Each variable takes one of the following values:

- 0 = no disability
- 1 = less severe
- 2 = more severe

Global score

A person’s **global severity score**, **DSCORE**, is calculated by taking the average of the standardized scores for the 10 disability types. Consequently, the more types of disability a person has, the higher his or her global score will be. By definition, the global score is also a number between 0 and 1. People who report no disability for the 10 types but report another health problem or condition (i.e., they have an unknown type) have a global score equal to the standardized score for the unknown type divided by 10.

Global severity class

To make the global severity score easier to use, **global severity classes** were established (variable **DCLASS**). It is important to understand that the name assigned to each class is simply intended to facilitate its use. It is not a label or judgement concerning the person's level of disability. In other words, the classes should be interpreted as follows: people in class 1 have a less severe disability than people in class 2; people in class 2 have a less severe disability than people in class 3; and people in class 3 have a less severe disability than people in class 4.

- 1 = mild disability
- 2 = moderate disability
- 3 = severe disability
- 4 = very severe disability

The cut-off point between classes 2 and 3 was first determined graphically. There is a natural discontinuity in the distribution of the overall score near the value of 0.1. In fact, this value corresponds to the score of a person who received the maximum number of points for a single disability type. That would put the person in the severe class. To be classified among the very severe disabilities, a person has to have double that score, or 0.2. A score of 0.2 corresponds to the score of a person who received the maximum number of points for two disability types. The cut-off point between class 1 and class 2 is half the score required for class 3, i.e., 0.05. This value corresponds to the score of a person who received middle-range points for a single disability type, for example, or lower-range points for multiple disability types. That would put the person in the moderate class.

The breakdown of persons with a disability across the four severity classes is shown in the table below.

Table C.3
Distribution of persons with a disability, by severity class, Canada

Severity class	Persons with a disability	
	number	percent
Class 1 = mild	2,324,430	37.2
Class 2 = moderate	1,242,910	19.9
Class 3 = severe	1,295,660	20.7
Class 4 = very severe	1,383,630	22.2

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Global score for persons without a disability in the CSD

In the CSD's sample (the YES sample), people without a disability are: people interviewed for the CSD who reported that they were "never" limited as well as those who reported being limited only "rarely" with "no difficulty" or "some difficulty" (called "false positives"). For the purposes of the CSD interview, these people were deemed not to have a disability and therefore did not have to answer the rest of the survey questions. Persons without a disability all have a global score of 0⁴⁸.

48. This statement also applies to people in the NO sample since they, by definition, do not have a disability. See the paragraph at the very end of Chapter 3.

Appendix D – Survey indicators by questionnaire module

The list below includes descriptions of questionnaire indicators as well as derived variables (DVs) which combine different questionnaire items. DVs are created to assist researchers in making full use of the data available.

For a complete list of variables, please refer to the 2017 CSD Data Dictionaries (codebooks). For details on how to obtain the Dictionaries, please contact Statistics Canada's [Client Services](#) or call 1-800-263-1136.

The Canadian Survey on Disability, 2017

Introduction – Getting started

This section describes the purpose of the survey and its voluntary nature. It also explains the nature of record linkage with the 2016 Census.

A preliminary technical module then ascertains whether the person is responding for themselves or on behalf of someone else (proxy).

Disability screening questions (DSQ)

Screening questions on the DSQ evaluate the presence and severity of 10 distinct types of disabilities related to health problems or conditions that have lasted or are expected to last for six months or more. Questions ask how often a difficulty limits daily activities for the following disability types:

1. Seeing
2. Hearing
3. Mobility
4. Flexibility
5. Dexterity
6. Pain-related
7. Learning
8. Developmental
9. Mental health-related
10. Memory

An “Unknown” type is also identified.

New for 2017 are questions on the age of onset and the age of limitation of each disability type.

Derived variables for the DSQ module include disability status, seeing disability indicator, hearing disability indicator, mobility disability indicator, flexibility disability indicator, dexterity disability indicator, learning disability indicator, pain-related disability indicator, developmental disability indicator, mental health-related disability indicator, memory disability indicator, unknown type of disability indicator and disability type counter.

Related DVs include severity class for seeing, severity class for hearing, severity class for mobility, severity class for flexibility, severity class for dexterity, severity class for pain, severity class for learning, severity class for mental health, severity class for memory, severity class for developmental, severity class for unknown, global severity score and global severity class.

An additional set of DVs provides age range groupings for age of onset and age of limitation for each disability type.

Episodic disabilities (EPD)

New to the survey content for 2017, questions in this module address whether respondents have periods of time when they are not limited by their condition, whether their conditions are getting better, worse or staying the same and the expected duration of their limitations.

Main condition (MC)

This module is used to identify the main medical condition which caused the most difficulty or limitation to daily activity for the respondent. Respondents were able to identify up to two medical conditions that contributed to difficulties or activity limitations. New for 2017 is a follow-up question on accidents and injuries to differentiate between workplace, home, motor vehicle and sports related causes.

Main conditions are coded according to the International Classification of Diseases (ICD-10).

Aids and assistive devices (AADH, AADV, AADM, AADL, AADA)

There are five modules covering aids and assistive devices. Respondents were streamed through these modules based on their disability type(s), as identified in the disability screening questions.

- Hearing (AADH)
- Seeing (AADV)
- Mobility and agility (flexibility and dexterity) (AADM)
- Learning and developmental (AADL)
- All disability types (AADA)

Questions were asked about any aids, assistive devices and specialized equipment that the respondent used and those they needed. Over 50 specific devices were included on the survey, including new technologies added for 2017 such as tablets and smartwatches. Respondents could also specify other aids that they used. Respondents who reported a need for a device that they did not have were then asked reasons for the unmet need. For persons with a hearing disability, questions were asked about the use of lip reading, sign language and sign language interpreters.

Derived variables include use of aids for hearing, the number of aids used for hearing, and whether needs for aids to help with hearing are being met; use of aids to help with vision, the number of aids used for vision, and whether needs for aids to help with vision are being met; use of aids to help with mobility or agility (flexibility or dexterity), the number of aids used for mobility or agility (flexibility or dexterity), and whether needs for aids to help with mobility or agility (flexibility or dexterity) are being met; use of aids to help with learning or a developmental condition, the number of aids used for learning or a development condition, and whether needs for aids to help with learning or a developmental condition are being met; use of aids to help with any condition, the number of aids used for any condition and whether needs for aids to help with any condition are being met; overall use of aids and number of total aids.

Medication use (MED)

This module asked about prescription medications that respondents took for their condition. Respondents are also asked about the impact of cost on their medication use.

Help received (HRE)

This module asked about the type of help that respondents received with everyday activities due to their condition. Respondents were asked to include help received from family, friends, neighbours and organizations, whether paid or unpaid. Everyday activities include meal preparation, daily housework, heavy household chores, getting to appointments and running errands, taking care of personal finances, personal care, help with basic medical care at home and with moving around inside the home.

Areas of unmet needs were identified. Respondents who reported receiving help with one or more activities were asked additional questions about the frequency of help received and about the persons or organizations that helped them with their everyday activities. Respondents were also asked about out-of-pocket or direct expenses for help received for everyday activities in the past 12 months.

Note that this section concerns only “human” help, and not technical assistance.

Derived variables include whether needs for help preparing meals are being met, whether needs for help with housework are being met, whether needs for help with heavy household chores are being met, whether needs with help getting to appointments are being met, whether needs for help with personal finances are being met, whether needs for help with personal care are being met, whether needs for help with basic medical care are being met, whether needs for help with moving around are being met and whether the respondent needs help with at least one everyday activity.

Health care services (HCS)

New for 2017 was a module that covered use of various therapies and social support services by persons with disabilities because of their condition. This included use of physiotherapy, massage therapy or chiropractic treatments, speech therapy, occupational therapy, professional nursing care at home, counselling services from a psychologist, psychiatrist, psychotherapist or social worker, support group services, drop-in center services or telephone information or support lines, addiction services, a tutor and other therapies or services. Unmet needs in these areas were also included.

Derived variables include whether needs are being met for physiotherapy, massage therapy or chiropractic treatments, whether needs are being met for speech therapy, whether needs are being met for occupational therapy, whether needs are being met for professional nursing care at home, whether needs are being met for counselling services from a psychologist, psychiatrist, psychotherapist or social worker, whether needs are being met for support group services, drop-in center services or telephone information or support lines, whether needs are being met for addiction services, whether needs are being met for a tutor and whether needs are being met for other therapies or services.

Education (EDU, EEX, EDB)

A set of three in-depth modules on education was included on the survey:

- Education (school attendance) (EDU)
- Educational experiences (EEX)
- Educational background (EDB)

The first module (EDU) asked about recent and past school attendance, full-time or part-time status, and the type of institution attended. Respondents who were currently attending school or who last attended school in 2016 or 2017 were asked additional questions about requirements for modified building features, specialized transportation, assistive devices, support services modification to curriculum or additional testing time to follow courses. If a need was identified, respondents were asked if accommodations were made available to them.

The intent of the second module (EEX) was to determine the impact of a respondent’s condition on his/her educational experience and level of schooling. Respondents were asked about difficulties encountered while acquiring an education. Questions asked about the impact of having a condition on choice of courses or careers, type or location of school, additional expenses and length of time to complete studies. Questions were also asked about the perceived social impact of the condition in terms of exclusion and bullying.

The last module (EDB) addressed the highest level of education completed, location of study, and major field of study for the highest certificate, diploma or degree completed.

DVs include school attendance by institution and full-time/part-time status and additional years required to achieve present level of education due to disability. The major field of study was coded according to the Classification of Instructional Programs (CIP Canada 2016).

Employment

A detailed set of 26 modules examined the employment experiences of persons with disabilities. Respondents were streamed through different sets of modules based on whether they were currently employed, unemployed or outside of the labour force, as determined by the first two modules.

All groups

- Labour market activities (LMAM)
- Labour force status (LMA2)

This set of modules determined the labour force status of respondents – employed, unemployed or not in the labour force. This status determined the flow of questions for respondents throughout the remainder of the employment modules.

Respondents who had worked in the week prior to the interview were classified as being employed. This includes those who were absent from work because of an illness, illness in the family, vacation, shift work schedule, maternity/paternity leave or other reasons but still occupied a job.

Respondents who indicated that they were without work but available for work in the week prior to the interview were considered unemployed. This includes: 1) those who had actively looked for paid work in the past four weeks; 2) those who were absent from a job due to a temporary lay-off, seasonal lay-off, or injury or sick leave that was no longer covered by the employer, and 3) those who had arrangements to start a job within four weeks of the time of interview.

Respondents were classified as not in the labour force if they were neither employed or unemployed in the week prior to the interview. That is, they did not have paid work, were unable to start in a job or business in the next four weeks due to school, illness/disability, personal and family responsibilities, or were not looking for work.

For employed population

- Class of worker (LMA3)
- Self-employed (SEMP)
- Job tenure (JT)
- Industry (LMA4)
- Occupation (LMA5)
- Workplace (WKPL)
- Usual hours of work (LMA6)
- Part-time employment (PT)
- Permanent work (PW)
- Periods of unemployment (POU)
- Employment details (EDE)

This set of modules was targeted to those who had worked at a job or business during the reference week (the week preceding the interview). Employed respondents were asked questions about their current job or business, including their class of worker (employee, self-employed or working in family business without pay), reason for self-employment (where applicable), year job tenure began, type of industry, occupation, workplace size and presence of a union, hours worked, reasons for part-time work (where applicable), and whether or not their work is permanent. This group of respondents are also asked about any periods of unemployment.

Respondents were also asked about the impact of their disability on their work. This included whether having a disability limited the amount or kind of work they were able to do, and whether their condition affected their ability to change jobs or advance at their present job.

For unemployed population

- Looking for work (LW)
- Past job attachment (PJA)
- Unemployment details (UDE)
- Periods of employment (POE)
- Labour mobility (LM)

This set of modules was targeted to those who had not worked at a job or business during the reference week (the week preceding the interview) but who were available to work. Questions covered the details of their job search and the barriers they faced in looking for work and information about their employment history, such as when they last worked. For those who had worked in the last five years (since 2012), questions asked about their most recent work or business, including hours worked, class of worker (employee, self-employed or working in family business without pay), type of industry and occupation.

Unemployed respondents were also asked whether having a disability affected their ability to look for work and whether it limited the amount or kind of work they could do.

For population not in the labour force

- Past job attachment (PJA)
- Not in the labour force details (NDE)
- Labour market attachment (LA)
- Periods of employment (POE)
- Labour mobility (LM)

This set of modules was targeted to those who were neither employed nor unemployed. Questions covered employment history, such as when they last worked. For those who had worked in the last five years (since 2012), questions asked about their most recent work or business, including hours worked, class of worker (employee, self-employed or working in family business without pay), type of industry and occupation.

Respondents were also asked whether or not their disability completely prevented them from working, whether it limited the amount or kind of work they could do and whether there was some type of workplace arrangement or modification that would enable them to work. They were also asked about their ability to look for work and current barriers to looking for work.

All groups

- Classification of retirement (RETC)
- Retirement details (RDE)
- Workplace training (WTR)
- Employment modifications (EMO)
- Labour force discrimination (LFD)

This last set of modules on the theme of employment was asked of all groups: those who were employed, unemployed and outside the labour force.

Two of these modules addressed retirement, including current retirement status, (completely, partly, not retired), whether respondents had ever retired and then returned to work, year of last retirement and reasons for retirement.

The workplace training module dealt with job-related training provided or paid for by a respondent's employer or company in the last 12 months of their current or most recent employment. Questions covered both classroom and on-the-job training. Work-related training that was not paid by the employer was also covered, along with barriers to training for those seeking it.

The employment modifications module asks about whether respondents required, or would require modifications or changes to their job to be able to work, including changes to duties or work arrangements, technical or human supports, or modifications to the physical work environment. Follow-up questions asked about whether the modifications or changes had been requested, whether they had been made available, and if not, reasons why accommodations had not been provided. Questions were also asked on barriers to asking for accommodations.

The labour force discrimination module asked about the respondent's perception of disadvantage in the work force, such as being refused job interviews, jobs or promotions.

Employment-related DVs include labour force status, full-time or part-time employment status, year of tenure at current job or business, type of industry and occupation, year last worked and year last retired.

Several questions from the employment modules also allow for the assessment of employment equity for persons with disabilities, as defined in the *Employment Equity Act*. For more details, including related DVs, see Appendix E.

Industry is coded according to North American Industry Classification System (NAICS), both for 2017 and 2012. Occupation is coded according to **National Occupational Classification (NOC) 2016**.

General health (GH)

This new module for 2017 includes indicators of perceived general health, mental health and life satisfaction.

Housebound (HB)

This module, re-instated from the previous 2006 Participation and Activity Limitation Survey (PALS), looks at persons with disabilities who consider themselves housebound and the reasons involved.

Veterans (VAC)

This new module for 2017 identifies veterans of the Canadian Armed Forces with disabilities as well as the year they last served. This module also identifies currently serving members who are living in private dwellings in Canada (keeping in mind that the survey's sampling frame excludes current members living in collective dwellings, such as Canadian Armed Forces bases, and those living outside of Canada).

DVs include Canadian Armed Forces status and time of release from the forces.

Internet use (IU)

This new 2017 module looks at frequency and location of Internet use, types of Internet use, barriers to usage, the need for specialized software or other adaptations to access the Internet and any unmet needs for specialized software or adaptations.

Accessibility of government services (AGS)

This new 2017 module looks at any difficulties accessing government services by Internet or through other channels of communication because of a disability and identifies preferred methods of contact.

Sources of income (SNC)

This module asked about personal income received from various sources in 2016, including employment, self-employment, Workers' Compensation, Employment Insurance or Quebec Parental Insurance Plan, various types of pension plan benefits, various sources of disability benefits, social assistance and other sources.

Appendix E – Employment equity questions

The definition of persons with disabilities in the 1995 *Employment Equity Act* includes the following criteria:

- Persons who have a long-term or recurring physical, mental, sensory, psychiatric or learning impairment; and
 - a. Consider themselves to be disadvantaged in employment by reason of that impairment; or
 - b. Believe that an employer or potential employer is likely to consider them to be disadvantaged in employment by reason of that impairment; and
- Includes persons whose functional limitations owing to their impairment have been accommodated in their current job or workplace.

For statistical purposes, the CSD further operationalizes these criteria by identifying persons with a disability who are between the ages of 15 to 64, who have worked recently (within the last 17 months) and who are not permanently retired.

The specific survey questions used to fulfill the Employment Equity definitional criteria are listed below.

Persons who have a long-term disability

Disability Screening Questions: DSQ_Q035 to DSQ_Q305

Disadvantage in employment

EDE_Q10, UDE_Q40, NDE_Q50: Does your condition limit the amount or kind of work you can do at your present job or business?

LFD_Q20: Do you consider yourself to be disadvantaged in employment because of your condition?

Perception

EDE_Q30: Do you believe that your condition makes it difficult for you to change jobs or to advance at your present job?

LFD_Q25: Do you believe that your current employer or any potential employer would be likely to consider you disadvantaged in employment because of your condition?

Accommodation

EMO_Q05: Because of your condition, do you require any of the following to be able to work?

1. Modified or different duties
2. Working from home
3. Modified hours or days or reduced work hours
4. Human support
e.g., reader, sign language interpreter, job coach or personal assistant
5. Technical aids
e.g., voice synthesizer, TTY, infrared system or portable note-taker
6. Computer, laptop or tablet with specialized software or other adaptations
e.g., Braille, screen magnification software, voice recognition software or a screen reader

7. Communication aids
e.g., Braille or large print reading material or recording equipment
8. Modified or ergonomic workstation
9. Special chair or back support
10. Handrails, ramps, widened doorways or hallways
11. Adapted or accessible parking
12. Accessible elevator
13. Adapted washrooms
14. Specialized transportation
15. Other equipment, help or work arrangement — specify
16. None of the above

Derived variables (DVs) are available on the CSD database which provide indicators of whether respondents meet criteria for *Employment Equity Act* categories.

Appendix F – Coding: Extra categories created and standard classifications used

“Other – specify” questions: Extra response categories created

The table below summarizes the extra categories added to certain survey questions during the coding of data involving an “Other – specify” category. Where counts warranted, new categories were created to capture themes in the data that were not reflected in existing categories. These categories are thus additions to those already appearing on the questionnaire of the Canadian Survey on Disability and will be available on the survey database and dictionaries.

Table F.1
Extra response categories created for “Other – specify” questions

Theme	Indicator	Questions	Extra categories
Main condition	Cause of condition	MC_Q10, MC_Q25	<ul style="list-style-type: none"> Lifestyle
Aids and assistive devices	Aids or assistive devices used for a hearing condition	AADH_Q05	<ul style="list-style-type: none"> headphones
Aids and assistive devices	Aids or assistive devices used for learning or developmental difficulties	AADL_Q05	<ul style="list-style-type: none"> pen and paper / writing notes
Aids and assistive devices	Aids or assistive devices used for any condition	AADA_Q040	<ul style="list-style-type: none"> Continuous Positive Airway Pressure (CPAP) machine a heating or ice pad a blood pressure monitor compression socks
Aids and assistive devices	Aids or assistive devices needed for any condition but does not have	AADA_Q050	<ul style="list-style-type: none"> Continuous Positive Airway Pressure (CPAP) machine
Health care services	Health care services received because of condition during past 12 months	HCS_Q05	<ul style="list-style-type: none"> Services of a naturopath, homeopath or osteopath Acupuncture treatments Services of a family doctor or general practitioner, a nurse, or any other medical doctor or specialist
Part-time employment	Main reason for working part-time	PT_Q05	<ul style="list-style-type: none"> Retirement / Pre-retirement Self-employment
Persons not in the labour force	Barriers encountered which have discouraged looking for work	NDE_Q70	<ul style="list-style-type: none"> Health condition Age
Labour mobility	Reasons for not being able to move to improve job or career opportunities	LM_Q10	<ul style="list-style-type: none"> Financial reasons Age (either too young or too old to move) Own a business based in current location
Housebound	Reasons for being housebound	HB_Q10	<ul style="list-style-type: none"> Weather conditions / Seasonal limitations Mobility restrictions Financial reasons No motivation, lack desire or not interested
Internet use	Reasons for not using Internet	IU_Q10	<ul style="list-style-type: none"> Age (too old) Health condition

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Other open-ended coding questions: New categories generated

Some questions on the CSD involved a completely open-ended format for entering responses. For some of these questions, coding procedures generated new categories for the dissemination of results, reflecting emergent themes in the data. The table below summarizes the new categories generated, all of which have been added to the CSD database.

Table F.2
Response categories created for open-ended, long-answer questions

Theme	Indicator	Questions	New categories
Aids and assistive devices	Other aid, assistive device or accessibility feature used for moving around, to help with bending or reaching or to help with fine motor skills	AADM_Q020B	1) Stool / Step ladder 2) Other
Self-employment	Main reason for becoming self-employed instead of working for an employer	SEMP_Q05	1) Independence, flexibility or freedom 2) Due to nature of job 3) Wanted to own business, to be own boss or an entrepreneur 4) Family business or other business opportunity 5) Personal choice 6) Health condition 7) Higher income 8) Could not find work with an employer / Lack of job availability 9) Retirement 10) Personal or family responsibilities 11) Laid off/lost job 12) Other
Looking for work	What has made it difficult to find work	LW_Q25B	1) Health condition 2) Other
Accessibility of government services	Aspect of accessing government services by phone that would be difficult because of condition	AGS_Q05B	1) Difficulty understanding 2) Require assistance or support 3) Difficulty hearing 4) Difficulty with verbal communication 5) Difficulty communicating, n.o.s. 6) Difficulty with memory 7) Anxiety when talking on the telephone 8) Difficulty dialing or holding a telephone 9) Other 10) Do not own or use a telephone
Accessibility of government services	Aspect of accessing government services by mail or fax that would be difficult because of condition	AGS_Q05C	1) Difficulty understanding 2) Require assistance or support 3) Difficulty reading or writing 4) Difficulty seeing 5) Difficulty communicating, n.o.s. 6) Difficulty getting to a post office or mailbox 7) Other 8) No fax machine
Accessibility of government services	Aspect of accessing government services in person that would be difficult because of condition	AGS_Q05D	1) Difficulty understanding 2) Require assistance or support 3) Difficulty hearing 4) Difficulty due to physical limitations (e.g., walking, standing, wheelchair, etc.) 5) Difficulty communicating, n.o.s. 6) Difficulty with memory 7) Anxiety when going out or talking to strangers 8) Housebound 9) Other 10) Transportation issues / Location not convenient or close by
Accessibility of government services	Aspect of accessing government services by Internet that would be difficult because of condition	AGS_Q05E	1) Difficulty understanding 2) Require assistance or support 3) Difficulty reading or writing 4) Difficulty seeing 5) Difficulty communicating, n.o.s. 6) Difficulty with memory 7) Difficulty typing or using fingers 8) Other 9) Do not have a computer or Internet

Source: Statistics Canada, Canadian Survey on Disability, 2017.

Standard classifications used for the 2017 CSD

Listed below are the standard classifications used in the coding of those open-ended questions on the Canadian Survey on Disability (CSD) where standard classifications apply.

Medical condition: International Classification of Diseases, Tenth Revision (ICD-10)

CSD respondents provided information on the main medical condition which caused them the most difficulty or limitations to their daily activities. Responses were coded to the International Classification of Diseases, Tenth Revision (ICD-10).

The ICD is the standard diagnostic tool for epidemiology, health management and clinical purposes. It allows for the analysis of the general health situation of population groups. The ICD is used to monitor the incidence and prevalence of diseases and other health problems.

ICD-10 was endorsed by the 43rd World Health Assembly in May 1990 and came into use in World Health Organization (WHO) Member States in 1994.

Major field of study: Classification of Instructional Programs (CIP)

Respondents to the 2017 CSD provided information on the major field of study of the highest certificate, diploma or degree that they completed. Responses were coded to the [Classification of Instructional Programs \(CIP\) Canada 2016](#).

The CIP was originally developed in 1980 by the National Center for Education Statistics (NCES) in the United States. NCES released updates in 1985, 1990, 2000 and 2010. CIP Canada 2016 is the third Canadian version of this classification; the first two versions being CIP Canada 2000 and CIP Canada 2011. The CIP Canada 2016 structure, classes and titles are the same as the CIP Canada 2011 structure, classes and titles.

CIP is designed to classify 'instructional programs'. The organizing principle behind CIP is 'field of study'. At Statistics Canada, a field of study is defined as a "discipline or area of learning or training".

Industry and occupation: NAICS and NOCS

CSD respondents who were employed during the reference week of the survey provided information on the occupation and industry of their current job or business. Respondents who were unemployed or outside of the labour force during the reference week but who had worked in the last five years (since 2012), provided information on the occupation and industry of their most recent job or business. Additionally, unemployed respondents also provided the industry in which they were currently looking for work.

All these responses were coded using the [North American Industry Classification System \(NAICS\) Canada](#) and the [National Occupational Classification \(NOC\)](#). Data were coded to the 4-digit level of detail and were coded to current versions of these classification systems as well as one historical version, as follows:

- North American Industry Classification System (NAICS) Canada 2012
- North American Industry Classification System (NAICS) Canada 2017 Version 2.0
- National Occupational Classification (NOC) 2016, Version 1.0

The North American Industry Classification System (NAICS) is an industry classification system developed by the statistical agencies of Canada, Mexico and the United States. It was created against the background of the North American Free Trade Agreement. NAICS is based on supply-side or production-oriented principles - the criteria used to group establishments into industries in NAICS are similarity of input structures, labour skills and production processes. The 2012 NAICS revision was undertaken to achieve one main goal: to modify or create industries to reflect new, emerging, or changing activities and technologies. NAICS 2017 brings various kinds of changes, including many clarifications of the definition and boundary of classes. NAICS 2017 Version 2.0 consists mainly of changes to Internet-only publishing activities.

The National Occupational Classification (NOC) 2016 updates the National Occupational Classification 2011. It is the nationally accepted taxonomy and organizational framework of occupations in the Canadian labour market. Occupations are identified and grouped primarily in terms of the work usually performed, this being determined by the tasks, duties, and responsibilities of the occupation. The NOC has been developed and maintained as part of a collaborative partnership between Employment and Social Development Canada (ESDC) and Statistics Canada. This update of the classification reflects ongoing occupational research and consultation to incorporate information on new occupations. Each ten years, structural changes that affect the classification framework, such as the addition of new classes, are considered. The NOC 2016, Version 1.0 represents an update, and uses the NOC 2011 classification structure.

Appendix G – How to obtain key supporting documents

Documents available on [Statistics Canada Website](#)

[Canadian Survey on Disability \(CSD\) \(Integrated Metadatabase\)](#)

[2017 Canadian Survey on Disability \(questionnaire\)](#)

[Dictionary, Census of Population, 2016](#)

[2016 Census 2A-L \(questionnaire\)](#)

[Guide to the Census of Population, 2016](#)

[Health Regions \(HR\) 2017](#)

[Classification of Instructional Programs \(CIP\) Canada 2016](#)

[North American Industry Classification System \(NAICS\)](#)

[National Occupational Classification \(NOC\)](#)

[Canadian Survey on Disability Data Tables](#)

Documents available in the [Research Data Centres \(RDC\)](#)

CSD, 2017: Concepts and Methods Guide

CSD, 2017: User Guide to the Analytical Data Files

CSD, 2017: Analytical File for Persons With Disabilities

CSD, 2017: Analytical File for Persons Without Disabilities

CSD, 2017: Bootstrap Weights File for Persons With Disabilities

CSD, 2017: Bootstrap Weights File for Persons Without Disabilities

CSD, 2017: Data Dictionary for Analytical File for Persons With Disabilities

CSD, 2017: Data Dictionary for Analytical File for Persons Without Disabilities

CSD, 2017: Questionnaire with skip patterns

Documents from [Statistics Canada Client Services](#) or call 1-800-263-1136

CSD, 2017: Data Dictionary for Persons With Disabilities, Zero-frequency file

CSD, 2017: Data Dictionary for Persons Without Disabilities, Zero-frequency file

Information about [Real Time Remote Access \(RTRA\) system](#)

STATCAN.MADRTRASupport-DAMADTRSupport.STATCAN@canada.ca

References

- Arim, Rubab (2015). "[A profile of persons with disabilities among Canadians aged 15 years or older, 2012.](#)" *Canadian Survey on Disability, 2012*. Statistics Canada Catalogue no. 89-654-X2015001.
- Bernier, J., and Nobrega, K. (1998). "Outlier detection in asymmetric samples: A comparison of an inter-quartile range method and a variation of a sigma-gap method". Annual meeting of the Statistical Society of Canada, June 1998.
- Grondin, Chantal (2016). [A New Survey Measure of Disability: the Disability Screening Questions \(DSQ\)](#), Statistics Canada Catalogue no. 89-654-X2016003
- Statistics Canada (2016). [Census Test: Content Analysis Report - 2016 Census Program Content Test: Design and Results](#). Catalogue 92-140-X2016001, April 2016.
- HADDOU, M. 2013. "Bootstrap Variance Estimation Specifications – Aboriginal Peoples Survey". Internal document, January 2013.
- Langlet, É., Beaumont, J.-F., and Lavallée, P. (2008). "Bootstrap Methods for Two-Phase Sampling Applicable to Postcensal Surveys". Paper presented at Statistics Canada's Advisory Committee on Statistical Methods, May 2008, Ottawa.
- Mackenzie, A., M. Hurst and S. Crompton (2009). "[Defining disability in the Participation and Activity Limitation Survey](#)", *Canadian Social Trends*, no 88, "Living with disability series". Statistics Canada product no. 11-008-X2010002, December, 2009.
- Till, Matthew, Tim Leonard, Sebastian Yeung & Gradon Nicholls (2015). "[Canadian Survey on Disability, 2012: A Profile of the Labour Market Experiences of Adults with Disabilities among Canadians aged 15 years and older, 2012](#)". Statistics Canada Catalogue no. 89-654-X2015005.
- Turcotte, Martin (2014). "[Persons with disabilities and employment.](#)" *Insights on Canadian Society*. Statistics Canada Catalogue no. 75-006-X2014001.