



Data Quality Documentation for External Users:
Discharge Abstract Database, 2010–2011



Who We Are

Established in 1994, CIHI is an independent, not-for-profit corporation that provides essential information on Canada's health system and the health of Canadians. Funded by federal, provincial and territorial governments, we are guided by a Board of Directors made up of health leaders across the country.

Our Vision

To help improve Canada's health system and the well-being of Canadians by being a leading source of unbiased, credible and comparable information that will enable health leaders to make better-informed decisions.

Table of Contents

| | |
|---|-----|
| Abbreviations..... | iii |
| 1 Introduction..... | 1 |
| 1.1 An Overview of the Discharge Abstract Database | 1 |
| 2 Coverage..... | 3 |
| 2.1 Population Covered by the DAD..... | 3 |
| 2.2 Population of Reference for the DAD | 9 |
| 3 Collection and Response..... | 12 |
| 3.1 Data Collection | 12 |
| 3.2 Data Quality Control | 14 |
| 3.3 Data Element Changes | 17 |
| 4 Major Changes to the DAD..... | 18 |
| 4.1 Historical Changes | 18 |
| 4.2 Historical References | 19 |
| 5 Comparability..... | 20 |
| 5.1 Geography..... | 20 |
| 5.2 Institution | 20 |
| 5.3 Time | 20 |
| 5.4 Person | 21 |
| 6 General Data Limitations | 22 |
| 6.1 Accuracy..... | 22 |
| 6.2 Comparability | 34 |
| Appendix A: 2010–2011 Mandatory DAD Data Elements..... | 39 |
| Appendix B: Evolution of DAD Data Elements 2001–2002 to 2010–2011 | 45 |
| References | 49 |
| Contacts | 50 |

Abbreviations

| | |
|-----------|---|
| ALC | Alternate Level of Care |
| Alta. | Alberta |
| B.C. | British Columbia |
| CCI | Canadian Classification of Health Interventions |
| CCRS | Continuing Care Reporting System |
| CIHI | Canadian Institute for Health Information |
| CMG | Case Mix Group |
| DAD | Discharge Abstract Database |
| DPGs | Day Procedure Groups |
| eCHAP | electronic Comparison of Hospital Activity Program |
| ED | Emergency Department |
| eHSR | electronic Hospital Specific Report |
| ELOS | Expected Length of Stay |
| HCNs | Health Care Numbers |
| HMDB | Hospital Morbidity Database |
| ICD-10-CA | International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada |
| ICD-9 | International Statistical Classification of Diseases and Related Health Problems, 9th Revision |
| ICD-9-CM | International Statistical Classification of Diseases and Related Health Problems, 9th Revision, Clinical Modification |
| Man. | Manitoba |
| NACRS | National Ambulatory Care Reporting System |
| N.B. | New Brunswick |
| NCAD | National Clinical Administrative Databases (steering committee) |
| N.L. | Newfoundland and Labrador |
| NRS | National Rehabilitation Reporting System |
| N.S. | Nova Scotia |
| NTR | National Trauma Registry |
| Nun. | Nunavut |
| N.W.T. | Northwest Territories |

| | |
|--------|--|
| OMHRS | Ontario Mental Health Reporting System |
| Ont. | Ontario |
| OOH | Out-of-Hospital |
| OR | Operating Room |
| OTR | Ontario Trauma Registry |
| PCCF | Postal Code Conversion File |
| P.E.I. | Prince Edward Island |
| PLS | Privacy and Legal Services |
| PP | Post-Procedural |
| Que. | Quebec |
| Sask. | Saskatchewan |
| TADB | Therapeutic Abortions Database |
| URC | Update and Revision Committee |
| Y.T. | Yukon |

1 Introduction

1.1 An Overview of the Discharge Abstract Database

The Discharge Abstract Database (DAD) is a national database for information on all separations from acute care institutions including discharges, deaths, sign-outs and transfers within a fiscal year (April 1 to March 31). Over time, the DAD has also been used to capture day surgery procedures, long-term care, rehabilitation and other data. More than 3.2 million abstracts were submitted to the DAD in 2010–2011, representing approximately 75% of all acute inpatient separations in Canada (Quebec does not submit data to the DAD). Quebec's acute inpatient separations are reported to the Hospital Morbidity Database (HMDB) and usually account for 25% of the total inpatient separations in Canada. About 2.4 million day surgery abstracts were submitted to the Canadian Institute for Health Information (CIHI) in 2010–2011, with 36.37% sent to the DAD and 63.63% sent to NACRS.

Since the DAD's inception in 1963, when it was developed to collect data on separations from institutions in Ontario, it has expanded to provide coverage in all provinces except Quebec. DAD data is available for all fiscal years since 1979–1980, but the comprehensiveness and format of submissions have varied significantly. Data since 1990 is most readily available for use.

In addition to the collection and processing of data on separations from institutions, CIHI also provides electronic Hospital Specific Reports (eHSRs), value-added information (calculated Case Mix Groups, expected length of stay and Resource Intensity Weights) and national comparative reporting based on peer groups (eCHAP) to data suppliers. These facilitate management decision-making at the institutional, regional and provincial/territorial levels.

As a core database at CIHI, the DAD populates other databases, including the HMDB, the Hospital Mental Health Database (HMHDB), the National Trauma Registry (NTR) and the Ontario Trauma Registry (OTR).

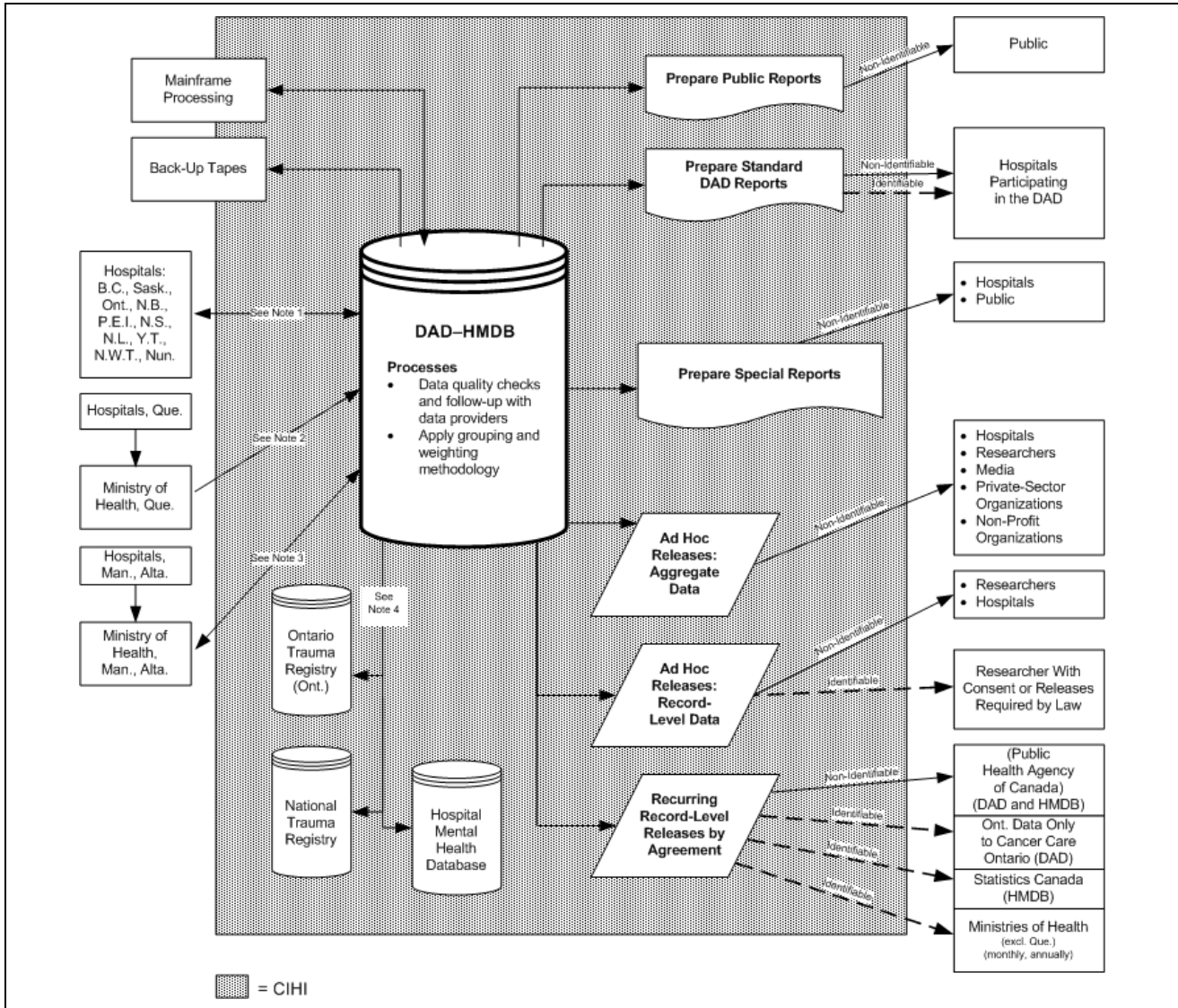
Information from the DAD is used by institutions, governments and academic institutions. Institutions use DAD data to support utilization management decisions and for administrative research. Governments use DAD data for funding, system planning and evaluation. Academic and other institutions use the DAD for a wide variety of research purposes.

In previous years, the DAD and the HMDB were housed in separate databases, but they were merged in 2001, creating one physical database. The Quebec Ministry of Health and Social Services submits a data file to CIHI on an annual basis. This data file is then merged with the DAD to create the national DAD—HMDB data file. Both the DAD and the HMDB have different populations of

reference and include different data elements. For a detailed description of the HMDB and to see how it resembles and differs from the DAD, please refer to the data quality documentation for the HMDB on CIHI's website.

The following diagram depicts data flow from institutions to the DAD and the HMDB.

Discharge Abstract Database—Hospital Morbidity Database (DAD—HMDB) 2010–2011 Data Flow Diagram



Notes

1. Data submission/correction via DAD—coded summary not including name or street address.
2. Data submission via HMDB—coded summary not including name or street address.
3. Data submission/correction via DAD (Man., Alta.)—coded summary not including name or street address.
4. Registry/database-specific subset of data.

2 Coverage

2.1 Population Covered by the DAD

The original function of the DAD was to collect acute inpatient data. Its uses have expanded over the years to include the collection of information on day surgery, long-term care and rehabilitation. Over time, provinces and territories have begun to submit chronic, rehabilitation and other types of level-of-care data to specialized databases at CIHI, including the Continuing Care Reporting System (CCRS), the National Rehabilitation Reporting System (NRS) and the Ontario Mental Health Reporting System (OMHRS), which has captured information on new admissions for adult inpatient mental health beds in Ontario since October 1, 2005. The data in the DAD for these other care types is therefore incomplete.

Table 1 shows DAD participation by province/territory and Institution Type in 2010–2011.

Table 1: Summary of 2010–2011 DAD Participation, by Province/Territory and Institution Type

| Institution Type | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | N.W.T. | Nun. | Y.T. |
|--------------------------|------|--------|----------------|------|------|------------------|-----------------|-------|------------------|------|--------|------|------|
| Acute Care | √ | √ | √ | √ | N/A | √** | √ | √ | √ | √ | √ | √ | X* |
| Day Surgery | √ | √ | X [†] | √ | N/A | N/A [‡] | √ | √ | N/A [‡] | √ | √ | √ | √ |
| Rehab | N/A | N/A | X | X | N/A | N/A | NA [§] | N/A | X | X | N/A | N/A | N/A |
| Special Rehab | N/A | N/A | X | N/A | N/A | X | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Chronic Care | X | N/A | N/A | X | N/A | X | X | X | N/A | X | X | N/A | N/A |
| Psychiatric | N/A | X | X | X | N/A | N/A | X | N/A | X | N/A | N/A | N/A | N/A |
| Home for the Aged | N/A | N/A | N/A | N/A | N/A | N/A | X | N/A | N/A | N/A | N/A | N/A | N/A |

Notes

- * One institution in Yukon was a federal government institution prior to 1997–1998, and in 1997–1998 it became a territorial government institution. Some years, it was designated as an acute care institution by the territorial government and other years it was designated as an ambulatory care institution (with non-submitting Institution Numbers used for DAD abstracting). For example, it was designated as acute care in 2005–2006, ambulatory care in 2006–2007 and 2007–2008, acute care in 2008–2009 and ambulatory care in 2009–2010. This institution has never submitted data to the DAD because of resource issues and because it is not mandated to do so by the Yukon Ministry of Health. It is therefore not on the DAD frame and is not reported as a data quality issue of under-coverage. On average, this institution has approximately 400 separations per year.
- † Four institutions in Nova Scotia submitted day surgery data to the National Ambulatory Care Reporting System (NACRS) in 2010–2011.
- ‡ Ontario institutions submit all day surgery abstracts to NACRS. Before 2010–2011, Alberta institutions submitted their day surgery abstracts to CIHI, but the data was not stored in the DAD; however, as of 2010–2011, Alberta institutions started submitting day surgery data to NACRS.
- § As of April 2008–2009, institutions within the Winnipeg Regional Health Authority (WHRA) discontinued the submission of rehabilitation data to the DAD. Rehabilitation information is reported to the National Rehabilitation Reporting System (NRS) instead.
- ** Two acute care institutions from Ontario did not submit any data to CIHI in 2010–2011 due to staff shortages. A total of 236 abstracts were not reported to CIHI.
- √: all valid institutions reporting.
- X: partial reporting.
- N/A: no reporting.

Source

Discharge Abstract Database, 2010–2011, Canadian Institute for Health Information.

A valid submitting Institution Number is one that has been designated by a ministry or department of health in a province/territory for an institution that is required to report data on separations to the DAD. There were 856 of these Institution Numbers in 2010–2011, including 636 acute care (74.30%) and 171 day surgery (19.98%). Table 2 delineates these Institution Numbers by province/territory and Institution Type.

Table 2: Number of Valid Submitting Institution Numbers in the DAD, 2010–2011, by Province/Territory and Institution Type

| Institution Type | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | N.W.T. | Nun. | Y.T. | Total |
|--------------------------|-----------|-----------|-----------|-----------|------------|------------|------------|-----------|------------|------------|-----------|----------|----------|------------|
| Acute Care | 34 | 7 | 34 | 21 | N/A | 178* | 97 | 69 | 109 | 81 | 4 | 1 | 1 | 636 |
| Day Surgery | 14 | 2 | 15 | 22 | N/A | 0 | 28 | 25 | 0 | 59 | 4 | 1 | 1 | 171 |
| Rehab | 0 | 0 | 3 | 4 | N/A | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 10 |
| Special Rehab | 0 | 0 | 1 | 0 | N/A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Chronic Care | 1 | 0 | 0 | 14 | N/A | 1 | 2 | 1 | 0 | 2 | 4 | 0 | 0 | 25 |
| Psychiatric | 0 | 1 | 1 | 2 | N/A | 0 | 3 | 0 | 4 | 0 | 0 | 0 | 0 | 11 |
| Home for the Aged | 0 | 0 | 0 | 0 | N/A | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 49 | 10 | 54 | 63 | N/A | 177 | 131 | 95 | 114 | 144 | 12 | 2 | 2 | 856 |

Notes

* Effective October 1, 2011, three Ontario acute care institutions changed their Institution Number. Each of these institutions used two valid Institution Numbers to submit their data. Six periods of data were reported under each of these Institution Numbers.

N/A: not applicable (Quebec Institution Numbers are not part of the DAD frame).

Source

Discharge Abstract Database, 2010–2011, Canadian Institute for Health Information.

Table 3 lists the number of Institution Numbers used to report separations in 2010–2011, by submitting province/territory and Institution Type. The total figures are smaller than in Table 2 because they are based on actual discharges reported during 2010–2011. Thirteen facilities sent data files to CIHI, each indicating that the total number of separations from their facility was equal to zero; therefore, they do not constitute an issue of data coverage in the DAD.

Table 3: Number of Valid Institution Numbers Used to Report Separations in the DAD, 2010–2011, by Province/Territory and Institution Type*

| Institution Type | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | N.W.T. | Nun. | Y.T. | Total |
|--------------------------|-----------|-----------|-----------|-----------|------------|------------------|------------|-----------|------------|------------|-----------|----------|----------|------------------------|
| Acute Care | 33 | 7 | 34 | 21 | N/A | 173 [†] | 97 | 66 | 108 | 81 | 4 | 1 | 1 | 626 |
| Day Surgery | 13 | 2 | 15 | 20 | N/A | 0 | 27 | 23 | 0 | 58 | 4 | 1 | 1 | 164 |
| Rehab | 0 | 0 | 3 | 4 | N/A | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 10 |
| Special Rehab | 0 | 0 | 1 | 0 | N/A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Chronic Care | 1 | 0 | 0 | 14 | N/A | 1 | 2 | 1 | 0 | 2 | 4 | 0 | 0 | 25 |
| Psychiatric | 0 | 1 | 1 | 2 | N/A | 0 | 3 | 0 | 4 | 0 | 0 | 0 | 0 | 11 |
| Home for the Aged | 0 | 0 | 0 | 0 | N/A | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 47 | 10 | 54 | 61 | N/A | 175 | 130 | 90 | 113 | 143 | 12 | 2 | 2 | 839[†] |

Notes

* Institution Type refers to the level of care associated with each Institution Number as defined by the provincial/territorial ministries/departments of health.

† There were 839 Institution Numbers used to report separations to the DAD in 2010–2011, although there were 856 valid Institution Numbers in the DAD frame. This is because 13 valid Institution Numbers had no separations to report and 4 Institution Numbers did not submit any data in 2010–2011 due to staff shortages.

‡ One Ontario acute care institution submitted data using two Institution Numbers because the institution changed its number effective October 1, 2010.

N/A: not applicable (Quebec Institution Numbers are not part of the DAD frame).

Source

Discharge Abstract Database, 2010–2011, Canadian Institute for Health Information.

In 2010–2011, 3,298,758 abstracts were submitted to the DAD, including 2,427,235 acute care abstracts (74%) and 860,727 day surgery abstracts (26%). A detailed breakdown of all abstracts submitted, by province/territory and Institution Type, is provided in Table 4.

Table 4: Number of Abstracts Submitted to the DAD, 2010–2011, by Province/Territory and Institution Type

| Submitting Province/Territory | Acute Care | Day Surgery | Rehab | Special Rehab | Chronic Care | Psychiatric | Home for the Aged | Total |
|-------------------------------|------------------|----------------|--------------|---------------|--------------|--------------|-------------------|------------------|
| N.L. | 56,474 | 75,463 | 0 | 0 | 85 | 0 | 0 | 132,022 |
| P.E.I. | 15,506 | 12,322 | 0 | 0 | 0 | 169 | 0 | 27,997 |
| N.S. | 94,350 | 106,479 | 445 | 163 | 0 | 156 | 0 | 201,593 |
| N.B. | 90,852 | 51,904 | 591 | 0 | 1,694 | 272 | 0 | 145,313 |
| Que. | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Ont. | 1,097,004 | 0 | 0 | 233 | 555 | 0 | 0 | 1,097,792 |
| Man. | 138,699 | 104,781 | 0 | 0 | 161 | 189 | 89 | 243,919 |
| Sask. | 138,840 | 110,633 | 0 | 0 | 35 | 0 | 0 | 249,508 |
| Alta. | 369,380 | 0 | 1,897 | 0 | 0 | 3,179 | 0 | 374,456 |
| B.C. | 415,230 | 393,129 | 782 | 0 | 25 | 0 | 0 | 809,166 |
| N.W.T. | 5,661 | 3,337 | 0 | 0 | 76 | 0 | 0 | 9,074 |
| Nun. | 1,971 | 723 | 0 | 0 | 0 | 0 | 0 | 2,694 |
| Y.T. | 3,268 | 1,956 | 0 | 0 | 0 | 0 | 0 | 5,224 |
| Total | 2,427,235 | 860,727 | 3,715 | 396 | 2,631 | 3,965 | 89 | 3,298,758 |

Notes

* Two Ontario acute care institutions did not submit any data to the DAD due to staff shortages. A total of 236 abstracts were not reported to CIHI.

N/A: not applicable (Quebec Institution Numbers are not part of the DAD frame).

Source

Discharge Abstract Database, 2010–2011, Canadian Institute for Health Information.

Table 5 summarizes the percentage change in DAD submissions from 2009–2010 to 2010–2011, by province/territory and Institution Type. Overall, there was a 1.01% increase in the number of submissions for 2010–2011. An increase was seen for all levels of care. Acute care submissions increased 0.45% while day surgery submissions increased 2.56%. Also, there was an 11% increase in both psychiatric and home for the aged submissions.

Table 5: Percentage Change in the Number of Abstracts Submitted to the DAD Between 2009–2010 and 2010–2011, by Province/Territory and Institution Type

| Submitting Province/Territory | Acute Care | Day Surgery | Rehab | Special Rehab | Chronic Care | Psychiatric | Home for the Aged | Total |
|-------------------------------|-------------|-------------|-------------|---------------|--------------|--------------|-------------------|--------------|
| N.L. | -0.37 | 1.87 | - | - | 51.79 | - | - | 0.92 |
| P.E.I. | -3.08 | 1.99 | - | - | - | - | - | -0.30 |
| N.S. | 1.11 | -1.63 | 8.27 | 16.43 | - | 1.30 | - | -0.33 |
| N.B. | 1.15 | -3.39 | -0.34 | - | 8.10 | -7.17 | - | -0.47 |
| Que. | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Ont. | 0.49 | - | - | 4.95 | 0.00 | - | - | 0.49 |
| Man. | -0.34 | 2.75 | - | - | -13.44 | 4.42 | 11.25 | 0.96 |
| Sask. | -0.08 | 2.54 | - | - | 2.94 | - | - | 1.06 |
| Alta. | 0.54 | - | 10.55 | - | - | 8.61 | - | 0.65 |
| B.C. | 0.72 | 4.70 | -0.26 | - | -10.71 | - | - | 2.61 |
| N.W.T. | -1.53 | 5.04 | - | - | 31.03 | - | - | 1.00 |
| Nun. | -8.15 | 6.64 | - | - | - | - | - | -4.60 |
| Y.T. | 1.24 | 3.06 | - | - | - | - | - | 1.91 |
| Total | 0.45 | 2.56 | 6.02 | 9.39 | 5.92 | 11.53 | 11.25 | 1.01 |

Notes

A hyphen (-) indicates that there were no abstracts submitted in 2010–2011.

N/A: not applicable (Quebec Institution Numbers are not part of the DAD frame).

Source

Discharge Abstract Database, 2009–2010 and 2010–2011, Canadian Institute for Health Information.

2.2 Population of Reference for the DAD

The population of reference for 2010–2011 DAD includes all separations from acute care and day surgery institutions in Canada (excluding stillbirths and cadaveric donor cases) as of April 1, 2010, and March 31, 2011. All acute care data except that from Quebec is submitted to the DAD; the Quebec acute care data is submitted via Quebec's ministère de la Santé et des Services sociaux (MSSS) once per year and is included in the HMDB. Day surgery data from Ontario, Alberta and four institutions in Nova Scotia is submitted to NACRS.

The population of reference for the DAD can be identified by either the Analytical Institution Type Code or the Institution Type Code, but most often the former. Information about the HMDB and NACRS can be found in the *Data Quality Documentation, Hospital Morbidity Database and Data Quality Documentation, National Ambulatory Care Reporting System*. This document refers to the set of records submitted to the DAD only.

The Analytical Institution Type Code was a new data element introduced to the DAD in 2004–2005 to minimize the impact of the differences between level-of-care definitions across provinces/territories and to facilitate comparative reporting across Canada. It is a CIHI-defined data element that is assigned when the Institution Type assigned to an Institution Number is known to differ from the type of care provided. CIHI consults and confirms the level of care with the institutions and the provincial/territorial ministries or departments of health before assigning this value. The provincially/territorially assigned Institution Type remains in the database under the Institution Type Code field.

Of the institutions that reported data, 53 were assigned an Analytical Institution Type that differed from the Institution Type assigned by the ministry or department of health, including 46 that were changed from an acute care Institution Type to a non-acute care Analytical Institution Type. Of the 46, 13 were changed from an acute care Institution Type to a sub-acute care Analytical Institution Type, 7 were changed from an acute care Institution Type to a psychiatric Analytical Institution Type, 4 were changed from an acute care Institution Type to a chronic care Analytical Institution Type and 22 were changed from an acute care Institution Type to an unclassified Institution Type. Two institutions were changed from a chronic Institution Type to a psychiatric Analytical Institution Type and 5 were changed from a day surgery Institution Type to an organized outpatient Analytical Institution Type.

The introduction of the Analytical Institution Type Code does not alter CIHI's eHSRs and eCHAP reports, as these and all other reports produced from the DAD production system have always been based on the Institution Type assigned by provinces and territories. **Users are advised to use Analytical Institution Type Codes to identify acute inpatient and day surgery separations.**

Table 6 shows the number of acute care and day surgery Institution Numbers in the DAD as defined by the provincial/territorial Institution Type Code and the number defined by CIHI using the Analytical Institution Type Code in 2010–2011. There were fewer institutions identified as acute care and day surgery by the Analytical Institution Type Code than by the Institution Type Code.

Table 6: Comparison of Acute Care and Day Surgery Institution Numbers Used to Report Separations to the DAD, 2010–2011, by Institution Type and Analytical Institution Type, by Province/Territory*

| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | N.W.T. | Nun. | Y.T. | Total |
|--|------|--------|------|------|------|------------------|------|-------|-------|------|--------|------|------|-------|
| Acute Care | | | | | | | | | | | | | | |
| Defined by Institution Type | 33 | 7 | 34 | 21 | N/A | 173 [†] | 97 | 66 | 108 | 81 | 4 | 1 | 1 | 626 |
| Defined by Analytical Institution Type | 32 | 7 | 33 | 21 | N/A | 167 [†] | 73 | 66 | 96 | 80 | 4 | 1 | 1 | 582 |
| Day Surgery | | | | | | | | | | | | | | |
| Defined by Institution Type | 13 | 2 | 15 | 20 | N/A | 0 | 27 | 23 | 0 | 58 | 4 | 1 | 1 | 164 |
| Defined by Analytical Institution Type | 13 | 2 | 15 | 16 | N/A | 0 | 27 | 23 | 0 | 58 | 4 | 1 | 1 | 160 |

Notes

- * The level of care of an institution, identified by the Analytical Institution Type Code, may change over time due to hospital mergers, closures, or when CIHI validation processes or analyses determine that it was incorrectly assigned. The totals reported in this table reflect the levels of care recorded in the DAD at the time of closure.
 - † As of October 2010–2011, three Ontario institutions changed their Institution Number during the year; each of them used two valid Institution Numbers to submit their data.
- N/A: not applicable (Quebec Institution Numbers are not part of the DAD frame).

Source

Discharge Abstract Database, 2010–2011 Canadian Institute for Health Information.

Table 7 shows the total number of abstracts submitted to the DAD for 2010–2011 within the population of reference. There were 2,413,686 acute abstracts (73.92% of the population of reference) and 851,793 day surgery abstracts (26.08% of the population of reference) identified by the Analytical Institution Type Code.

Table 7: Number of Abstracts Submitted to the DAD, 2010–2011, by Province/Territory and Analytical Institution Type * for Population of Reference[†]

| Submitting Province/Territory | Acute Care | Day Surgery | Total |
|-------------------------------|------------------|----------------|------------------|
| N.L. | 55,405 | 75,463 | 130,868 |
| P.E.I. | 15,497 | 12,322 | 27,819 |
| N.S. | 94,008 | 106,479 | 200,487 |
| N.B. | 90,809 | 42,970 | 133,779 |
| Que. | N/A | N/A | N/A |
| Ont. | 1,095,037 | 0 | 1,095,037 |
| Man. | 134,729 | 104,781 | 239,510 |
| Sask. | 138,742 | 110,633 | 249,375 |
| Alta. | 364,041 | 0 | 364,041 |
| B.C. | 414,529 | 393,129 | 807,658 |
| N.W.T. | 5,658 | 3,337 | 8,995 |
| Nun. | 1,968 | 723 | 2,691 |
| Y.T. | 3,263 | 1,956 | 5,219 |
| Total | 2,413,686 | 851,793 | 3,265,479 |

Notes

- * The level of care of an institution, identified by the Analytical Institution Type Code, may change over time due to hospital mergers, closures or when CIHI validation processes or analyses determine that it was incorrectly assigned. The totals reported in this table reflect the levels of care recorded in the DAD at the time of closure.
- † The population of reference for the 2010–2011 DAD includes all separations from acute care and day surgery institutions in Canada (excluding stillbirths and cadaveric donor cases). All acute care data except that from Quebec is submitted to the DAD; the Quebec acute care data is submitted via Quebec's ministère de la Santé et des Services sociaux (MSSS) once per year and is included in the HMDB. Day surgery data from Ontario, Alberta and four institutions in Nova Scotia is submitted to NACRS. The population of reference for the DAD can be identified by either the Analytical Institution Type Code or Institution Type Code, but most often by the former. Information about the HMDB and NACRS can be found in the *Data Quality Documentation, Hospital Morbidity Database and Data Quality Documentation, National Ambulatory Care Reporting System*. This document refers to the set of records submitted to the DAD only.

N/A: not applicable (Quebec Institution Numbers are not part of the DAD frame).

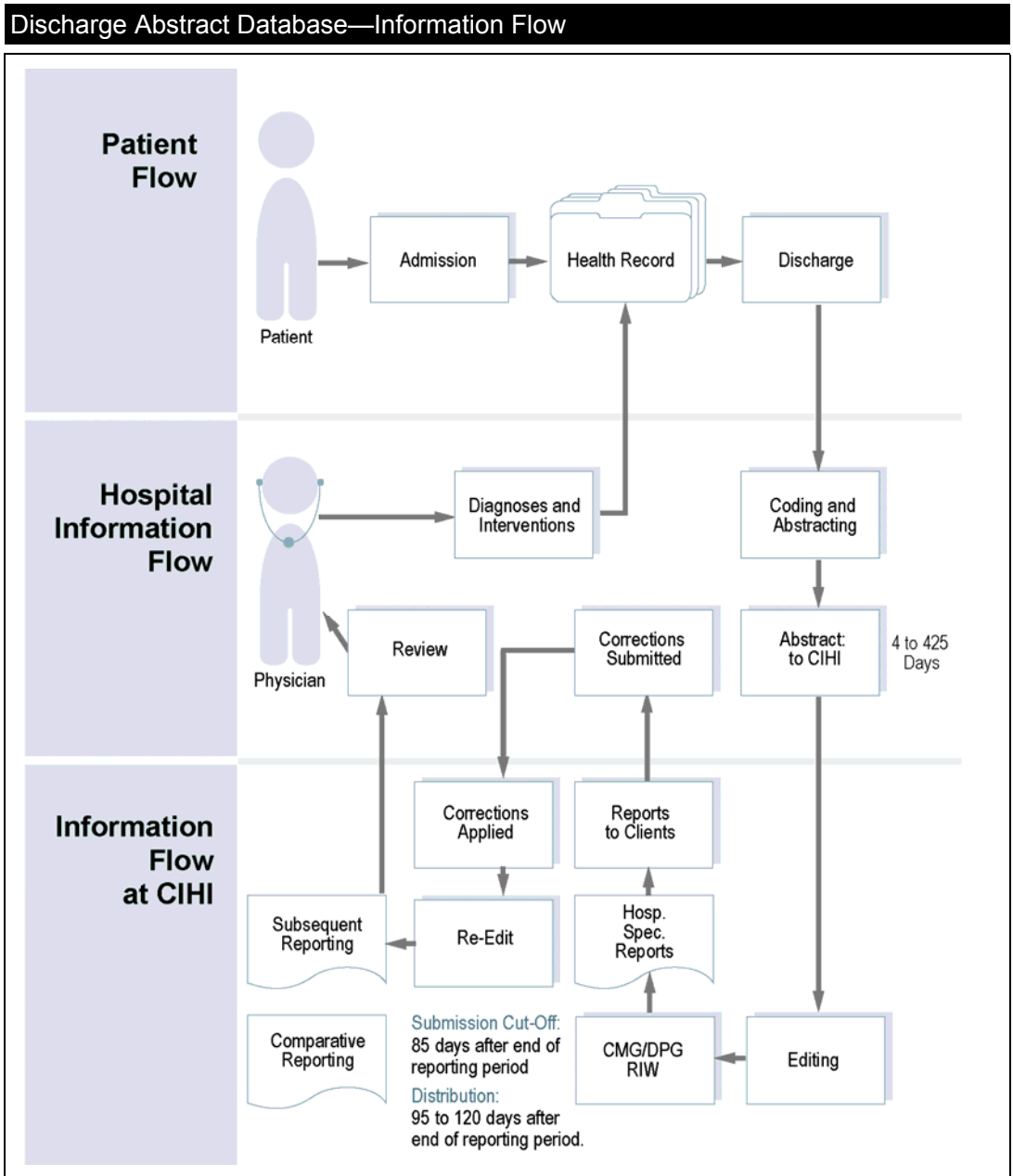
Source

Discharge Abstract Database, 2010–2011, Canadian Institute for Health Information.

3 Collection and Response

3.1 Data Collection

The following diagram summarizes the three stages of information flow in the DAD. Patient flow (stage one) into a health care facility leads to information flow at the institution level (stage two). Information at the institution level then feeds into information flow at CIHI (stage three).



Abstracting and Data Submission

The DAD abstract is a record of hospital activity that is completed for each instance of a hospital separation (discharge, death, sign-out or transfer of the patient to another facility). The data collected on each abstract includes coded diagnostic, intervention and patient demographic and administrative information. The format of the DAD abstract was changed in 2001–2002 to accommodate the adoption of the ICD-10-CA/CCI classification systems in some provinces and territories. ICD-10-CA is an enhanced version of ICD-10 developed by CIHI for morbidity classification in Canada. The Canadian Classification of Health Interventions (CCI) is the Canadian standard for classifying health care interventions. Since 2004–2005, all provinces and territories have submitted data to the DAD using the ICD-10 abstract. In 2007, the DAD abstract and the standard suite of reports were modified to support the new Case Mix Group methodology, CMG+. This methodology is designed to aggregate acute care inpatient cases with shared clinical and resource-utilization characteristics and was designed to take advantage of the increased clinical specificity of ICD-10-CA and CCI. Section 4.1 describes these classification systems in detail.

The *DAD Abstracting Manual*¹ (available in PDF version on CIHI's website) provides data element definitions, data collection guidelines, data validation rules, error message descriptions and valid code values. It is made available to clients prior to the beginning of each fiscal year. The Core section of the manual provides the data collection requirements that are applicable at a national level for acute and day surgery abstracts. A section on provincial variations identifies province-/territory-specific guidelines for abstracting certain data elements. Ministries of health mandate the submission of data to CIHI databases from institutions in all provinces and territories except Ontario, where institutions purchase services directly from CIHI. Data collection is facilitated through the service package called the Core Plan (CIHI's products and services contract). Under this plan, institutions may access CIHI's national data holdings and services related to data quality and processing, client education and support, data access, national health information standards and select publications and reports. When clients submit data files to the DAD, the DAD Submission Reports and eHSR reports are made available to them immediately after the records are processed. Clients may also take advantage of electronic Comparison of Hospital Activity Program (eCHAP) and eManagement reports and the CIHI eQuery tool for client support.

All hospitals that submit data to the DAD must use abstracting software that meets CIHI's specifications. CIHI outsources the development of abstracting software to vendors in the private sector. These vendors incorporate CIHI submission specifications into proprietary software systems, which also provide data quality control measures, such as data capture edit checks, cross-data element logic checks and interactive warning messages, to be presented to clients as data is collected. Data files are submitted to CIHI electronically through a secure, web-based application.

Completeness of Data Submission

The CIHI Management Report, produced after each data processing session and distributed monthly to provincial and territorial ministries of health, shows the number of abstracts in the database for institutions in each province/territory for each of the 12 reporting periods (13 in British Columbia) and the total number of abstracts in the database. This report is used to monitor data submission throughout the year. The DAD team uses the CIHI Management Reports to regularly monitor data submissions and follow up with facilities or provincial/territorial representatives when an unusually high or low number of abstracts is submitted for any period.

Data Submission Timeline

All data must be submitted to the DAD prior to the year-end deadline. The published submission deadline for 2010–2011 was July 31, 2011.

3.2 Data Quality Control

Extensive quality control measures support the collection of high-quality data in the DAD. These include processes for requiring software vendors to test their abstracting software before data is submitted for each fiscal year, the CIHI education program, CIHI's production system edits and correction process, client support and special data quality studies. These are described below.

Abstracting Software Development and Testing

CIHI maintains data capture quality control measures through the Vendor Relations and Production Systems sections of its Information Technology department. These areas offer vendor support, coordinate the annual release of vendor system specifications and assist with vendor system testing. CIHI requires vendors to test their software annually. They must submit a specified number and type of test abstracts, which are then processed in a testing environment to ensure that the format and content of the files meet the submission requirements for the fiscal year. Facilities are also required to submit test submissions after their vendor has passed an annual test.

CIHI Education Program

Through the CIHI education program, instructional sessions are provided to clients on coding and abstracting, how to manage submission errors and corrections, Case Mix Group methodology and other related topics. These sessions are one mechanism to ensure standardized data collection coding practices and adherence to CIHI's data submission and collection requirements. The instructional sessions are provided through elearning, self-learning packages (SLPs) and web conferences and can be accessed on the CIHI Events and Education web page.

The CIHI eQuery application is a shared knowledge base that helps registered users find answers and ask questions related to the DAD on topics such as data file submission, institution file updates, application access, reports, abstracting and data quality. It can be used to submit new questions if clients cannot locate answers to their questions in the knowledge base. When the DAD team learns of a new DAD-related issue, the client service representatives (CSRs) will post a question and answer in the eQuery knowledge base in anticipation of clients' questions.

CIHI Production System Edits and Correction Process

More than 900 data element edits are applied to each abstract as it is processed at CIHI, to ensure that the data in each field is in the expected format, within a specific range of values and has a logical relationship to other data elements. For most data elements, when errors are detected, a standard default value of Z is substituted into the data field (for hard errors) or the field is flagged with a warning message. For some data elements, blanks or numeric values are used to represent missing or invalid data. The client receives an electronic report that provides the details of all abstracts and fields that were defaulted or flagged and is asked to submit corrections. The correction and editing steps are repeated until either the client successfully corrects the abstracts or the database closes at the year-end deadline. Before the end of the fiscal year, clients can submit previously missing abstracts or delete duplicate abstracts. Any uncorrected hard errors that remain in the database can be identified by the standard default value of Z.

In addition to verifying individual data elements, the editing process checks a number of inter-relationships. Clients may receive an error message in a field when the reported value is valid but violates certain logical relationships with the data in other fields.

To ensure relevance and consistency, edits are reviewed and updated each year as new data elements are added and changes are made to the database. Test cases and specifications are created according to internal guidelines so that new edits will function correctly.

Client Services Representatives

CIHI assigns specific client services representatives to provide support for data collectors in each of the provinces and territories. The client services representatives answer questions related to DAD products, assist in the development and delivery of education programs, provide data quality expertise and build relationships with provincial/territorial data consultants, health organizations and data users.

Special Studies

CIHI's Data Quality department evaluates coding and abstracting accuracy in the DAD via reabstraction studies. Reabstraction involves returning to the original source of information (a patient chart) and comparing it with information in the DAD. The studies focus on data used to calculate specific health indicators, select administrative clinical data and diagnosis and intervention coding. CIHI has conducted studies using DAD data as far back as 1999–2000. These earlier studies can be found on CIHI's website and include the following:

- *Discharge Abstract Database Data Quality Re-Abstraction Study— Combined Findings for Fiscal Years 1999/2000 and 2000/2001*²
- *Discharge Abstract Database CMG/Plx Data Quality Re-Abstraction Study*³
- *Data Quality of the Discharge Abstract Database Following the First-Year Implementation of ICD-10-CA/CCF*⁴
- *Reabstraction Study of the Ontario Case-Costing Facilities for 2002–2003 and 2003–2004*⁵

More recently the Data Quality department at CIHI implemented a five-year plan for ongoing reabstraction studies, beginning with DAD 2005–2006 data and ending with DAD 2009–2010 data. The purpose of these studies is to evaluate the overall quality of clinical and non-clinical information and to identify issues associated with coding and abstracting variations. Each study year may also incorporate specific focus topics that are of interest to stakeholders. Upon completion of a study year, results are released to all institutions and provinces/territories that participated in the study, and a summary report is made available on CIHI's website.

The 2005–2006 study included results from all provinces/territories in Canada. The focus of the study was on selected health conditions and interventions, such as ambulatory care sensitive conditions, hip replacements and percutaneous coronary interventions. The results were released in winter 2008, and a summary report is available on CIHI's website as of August 2009.⁶

The 2006–2007 study focused on data that is included in the CMG+ grouping methodology, such as flagged interventions and out-of-hospital interventions. Facilities in British Columbia, Alberta and Ontario were targeted. The results were released in summer 2009, and a summary report was made available on CIHI's website in November 2009.⁷

The 2007–2008 study included all of the provinces and territories across Canada except Quebec and New Brunswick. The focus of the study was on selected health conditions. The results were released in winter 2010, and a summary report is available on CIHI's website as of May 2010.⁸

The 2008–2009 study included facilities from British Columbia, Alberta, Nova Scotia, Manitoba, Saskatchewan and Ontario. The data collection study was completed in the fall of 2009. This study focused on the quality of coding for stroke patients, as well as the quality of coding for the administration of thrombolytic therapy to stroke patients. The facility reports were distributed to facilities, and the provincial release and summary reports were available in September 2010.

The 2009–2010 study includes all of the provinces and territories across Canada except Quebec. The study focuses on the coding quality of selected health conditions, including drug-resistant organisms, palliative care, pneumonia, post-admit comorbidities, post-intervention conditions (including prefixes 5 and 6) and flagged interventions, as well as overall inpatient coding quality at a national level. The facility, provincial and national reports will be released by March 2012.

See the References at the end of this document for links to the studies.

3.3 Data Element Changes

Requests for refinements and suggested enhancements to data elements in the DAD are communicated to CIHI in several ways, including

- Input from advisory committees;
- Routine communication from clients to DAD support services representatives; and
- Formal submissions for data element additions or deletions from stakeholders.

The National Clinical Administrative Databases (NCAD) Steering Committee provides input to CIHI about these suggestions and advice about whether a proposed data element is appropriate for inclusion in the database as a mandatory (to ensure national comparability) or optional data element. Please refer to Appendix A for the collection status of various data elements in the 2010–2011 DAD.

4 Major Changes to the DAD

4.1 Historical Changes

Classification Systems

Classification systems in health care provide a standard mechanism for the capture and coding of diagnoses and interventions. ICD-10-CA, the enhanced Canadian version of the 10th revision of the International Statistical Classification of Diseases and Related Health Conditions, replaced the earlier ICD-9 and ICD-9-CM classifications. CCI, the Canadian Classification of Health Interventions, was developed and is maintained by CIHI. It contains a comprehensive list of diagnostic, therapeutic and support interventions and replaced the CCP and ICD-9-CM intervention codes. The ICD-10-CA and CCI classification systems were first implemented in 2001–2002 in British Columbia, Newfoundland and Labrador, Nova Scotia, Prince Edward Island, Yukon and parts of Saskatchewan. The systems were implemented in all jurisdictions except Quebec in 2004–2005, when Manitoba made the transition from ICD-9-CM.

ICD-10-CA and CCI codes are reviewed regularly. Codes may be added or deactivated as requirements in the field dictate. In March 2009, a new version of ICD-10-CA/CCI was introduced, including a large number of new diagnosis and intervention codes. Further information, including a description of these changes and an indication of when the changes occurred, may be found in CIHI's *Evolution Tables for ICD-10-CA and CCI*.

The ICD-10-CA and CCI coding standards are also reviewed, amended and enhanced annually by a pan-Canadian committee representing the provinces and territories. The *Canadian Coding Standards for ICD-10-CA and CCI^f* for 2006 through 2009 are available on CIHI's website and may be downloaded free of charge.

Data Quality of the Discharge Abstract Database Following the First-Year Implementation of ICD-10-CA/CCI^f was published to provide users of the data with accurate and timely information on the implementation of the system and the accuracy of the data. It offered an initial assessment of the quality of coded diagnostic and intervention data from the first-year implementation of the new ICD-10-CA and CCI classification system. The complete document is available on CIHI's website.

The Data Quality department at CIHI continues to evaluate the coding and abstracting accuracy in the DAD via reabstraction studies. Please see Special Studies in Section 3.2 for more information.

Case Mix Grouping

The CIHI Case Mix Group uses the data to derive Case Mix Groups (CMGs), Day Procedure Groups (DPGs), expected length of stay (ELOS) and Resource Intensity Weights (RIWs). CMGs categorize patients into statistically and clinically homogeneous groups based on clinical characteristics and resource use. Adjustments for patients of different levels of acuity form the basis for comparisons between health care organizations and Case Mix-adjusted resource utilization. Over the years, these grouping methodologies and their accompanying indicators have been used by health care facilities to plan, monitor and manage the services they provide.

All acute care inpatient data in the DAD for 2010–2011 has been grouped to CMG+. Formerly named CMG/Plx, the CMG+ methodology is designed to aggregate acute care inpatient cases with similar clinical and resource-utilization characteristics and to take advantage of the increased clinical specificity of ICD-10-CA and CCI. Redevelopment of the CMG/Plx and relative cost weighting methodologies included an extensive review of the CMG/Plx grouper logic, complexity methodology and age groupings. More information on CMG+ can be found on CIHI's website.

4.2 Historical References

The following products are useful references for users of DAD data. Users should consider both the fiscal year and classification scheme when referring to DAD documentation.

- *DAD Abstracting Manual (Core Section)*¹⁰ *DAD Abstracting Manual (Provincial/Territorial Variations)*¹¹
- *Quality Assurance Processes Applied to the Discharge Abstract and Hospital Morbidity Databases*¹²
- *CMG+ Directory*¹³ (ICD-10-CA and ICD-9-CM available)
- *DAD Resource Intensity Weights and Expected Length of Stay*¹⁴

5 Comparability

Comparability refers to the extent to which databases are consistent over time and use standard conventions (such as data elements or reporting periods), which make them similar to other databases.

5.1 Geography

Postal Code is a common variable in almost all CIHI databases. If it is used along with the Postal Code Conversion File (PCCF) from Statistics Canada, any standard geographical classification can be located, and the information in databases can be compared. The forward sortation area—that is, the first three digits of a postal code—is typically the lowest level of aggregation available to external users under CIHI’s Privacy and Confidentiality Policy. The release of information for small geographical areas may also be restricted to ensure confidentiality. Special requests must be approved by the CIHI Privacy and Legal Services (PLS) Secretariat. Note that for rural areas that use post office box numbers, postal code data does not necessarily provide an accurate picture of patient residence. This is because box numbers can be located in a region different from the place of residence. In addition, when rural postal codes include more than one enumeration area, it becomes difficult to determine a specific place of residence.

5.2 Institution

A standard code assigned by provinces and territories is used for the unique identification of institutions in the DAD and other CIHI databases, with some minor alterations. In the DAD, a province/territory prefix is added to the Institution Code to make it unique. Institution-identifying information is not released externally without approval from the CIHI PLS Secretariat.

5.3 Time

DAD data is grouped by fiscal year (April 1 to March 31), based on the discharge date on the abstract. Admission dates collected on each abstract enable data users to group data within and across fiscal years, depending on the need of the study.

5.4 Person

Patient names and street addresses are not part of the DAD. Health Care Numbers (HCNs) are assigned to individuals by provincial ministries of health and territorial governments. CIHI receives a complete HCN on the DAD abstract and applies a standard algorithm to scramble this number. Because the numbers are unique only within each province and territory, DAD captures a variable representing the province or territory that issued the HCN. Combining the HCN and the Province/Territory Issuing Health Care Number with other relevant person fields, such as Birthdate, Gender and Postal Code, unique individuals can be identified within the DAD, while they remain anonymous.

The HCN, Birthdate and full Postal Code of persons are not normally made available to external users. Access to these and other restricted data elements and the use of DAD data for data linkage studies require prior approval by the CIHI PLS Secretariat.

6 General Data Limitations

Data limitations are detected and investigated through data processing and editing, as well as through data quality activities within the DAD program area. The CIHI Data Quality Framework,¹⁵ implemented in 2000–2001 and revised in 2009, provides a common strategy for assessing data quality across CIHI databases and registries. It is built upon five dimensions of quality:

- Accuracy;
- Comparability;
- Timeliness;
- Usability; and
- Relevance.

The data limitations discussed below focus on accuracy (coverage, non-response, measurement error and response bias) and comparability (equivalency, linkage, standardization and historical comparability). Analyses were conducted using the Analytical Institution Type Code unless otherwise specified. For further information on the CIHI Data Quality Framework, please refer to CIHI's website.¹⁵

6.1 Accuracy

Accuracy refers to how well information in or derived from the database or registry reflects the reality it was designed to measure.

Coverage

The DAD frame is effectively validated by the provinces/territories, since they determine in advance which institutions must submit data to the DAD. Data submissions are monitored continually, and CIHI staff follow up with facilities or with ministries/departments of health when there are gaps in submissions or if there is a significant change in the total volume of abstracts received.

Over-coverage at the institution level occurs when the institutions that are not part of the population of reference are included in the frame, potentially skewing the result of analyses performed on the population of reference. The population of reference for the 2010–2011 DAD includes all separations from acute care and day surgery institutions in Canada (excluding stillbirths and cadaveric donor cases). All acute care data except that from Quebec is submitted to the DAD; the Quebec acute care data is submitted via Quebec's ministère de la Santé et des Services sociaux (MSSS) once per year and is included in the HMDB. Day surgery data from Ontario, Alberta and four institutions in Nova Scotia is

submitted to NACRS. The population of reference for the DAD can be identified by either the Analytical Institution Type Code or the Institution Type Code but is most often identified by the former. Information about the HMDB and NACRS can be found in the *Data Quality Documentation, Hospital Morbidity Database and Data Quality Documentation, National Ambulatory Care Reporting System*. This document refers to the set of records submitted to the DAD only.

Institutions have occasionally used the DAD to abstract data from other levels of care, including chronic care, rehabilitation and psychiatry. Any such non-acute data that appears in the DAD does not constitute over-coverage since the reference population can still be studied if these records are isolated. **Users are advised to use Analytical Institution Type Codes to identify acute care and day surgery abstracts.**

Over-coverage may occur at the record level when an institution creates multiple abstracts for the same discharge. These abstracts are referred to as “suspected extra abstracts” as they are not confirmed as true multiples by the respective provincial/territorial ministry or department of health. **In 2010–2011, there were 203 potential extra abstracts (197 acute care abstracts and 6 day surgery abstracts)** based on the population of reference.

Under-coverage occurs when part of the population of reference is not included in the frame. This, too, can affect analyses of the population of reference. There was no source of under-coverage in the DAD in 2010–2011, since acute care institutions are mandated by their provincial/territorial ministry/department of health to submit to the DAD. Submission of day surgery data to the DAD is also mandated in all provinces/territories except Ontario, Alberta and four institutions in Nova Scotia. The day surgery abstracts from these provinces and institutions are submitted to the NACRS. One institution in Yukon was a federal government institution prior to 1997–1998, and in 1997–1998 it became a territorial government institution. Some years, it was designated as an acute care institution by the territorial government and other years it was designated as an ambulatory care institution (with non-submitting Institution Numbers used for DAD Abstracting). For example, it was designated as acute care in 2005–2006, ambulatory care in 2006–2008 and 2007–2008, acute care in 2008–2009 and ambulatory care in 2009–2010. This institution has never submitted data to the DAD because of resource issues and because it is not mandated to do so by the Yukon Ministry of Health. It is therefore not on the DAD frame and is not reported as a data quality issue of under-coverage. On average, this institution has approximately 400 separations per year.

There are coverage issues to be aware of when using 2010–2011 data:

- **Changes in institutions submitting to the DAD:** Throughout the fiscal year there are openings, closures and mergers of institutions. Of the Institution Numbers reported in 2009–2010, six were no longer valid in 2010–2011. Two facilities closed, two submitted under a different level of care, one stopped submitting its sub-acute care data and another was no longer designated as a submitting institution. There was one each from Nova Scotia, New Brunswick, Saskatchewan, and Ontario; and two were from British Columbia. There were also five new Institution Numbers in 2010–2011 that did not exist in 2009–2010. Three Ontario acute care institutions changed their Institution Number during the year, effective October 1, 2011. Each of these three institutions has two valid Institution Numbers to report data; each Institution Number is responsible for six periods of data. The three new Institution Numbers from Ontario are the new Institution Numbers for the existing institutions, not new institutions. The two new institutions were from Prince Edward Island and Alberta.
- **Potential extra abstracts: In order to identify** potential extra abstracts in the DAD, CIHI looks for abstracts with identical values within a combination of select data elements, including Province Code, Institution Code, Health Care Number, Birthdate, Gender, Postal Code, Admission Date/Time, Discharge Date/Time, Most Responsible Diagnosis (MRDx), Principal Intervention Code and Weight. CIHI is unable to identify true extra abstracts definitively without confirmation by agencies of the provincial and territorial governments. In 2010–2011, there were **205** potential extra abstracts submitted to the DAD for the population of interest; **203** of these abstracts were for the population of reference.

Non-Response

Item Non-Response

Item non-response (or partial non-response, as it is sometimes known) occurs when a record is received with some data missing. The item response rate for the DAD depends largely on whether the data element is mandatory or optional. No missing data is allowed for mandatory variables. For most mandatory data elements, if data is missing or contains invalid values, it is converted to Z. For non-mandatory fields missing values are left blank, but in some cases they may trigger a warning message on the Submission Detailed Error File.

Table 8 lists the number of acute and day surgery abstracts with missing or invalid values in selected data fields and shows this number as a percentage of total acute and day surgery records.

Table 8: Number of Acute Care and Day Surgery Abstracts* Submitted to the DAD, 2010–2011, With Missing or Invalid Values in Selected Mandatory Data Elements for the Population of Reference†

| Data Element | Number of Acute and Day Surgery Abstracts With Missing/Invalid Values | Percentage of Acute and Day Surgery Abstracts With Missing/Invalid Values |
|----------------------------|---|---|
| Gender Code | 1 | 0.0000 |
| Postal Code | 30 | 0.0009 |
| Birthdate | 3 | 0.0001 |
| Admission Date | 5 | 0.0002 |
| Admission Time | 2 | 0.0001 |
| Discharge Date | 19 | 0.0001 |
| Discharge Time | 10 | 0.0003 |
| Discharge Disposition | 1 | 0.0000 |
| Admission Category | 1 | 0.0000 |
| Entry Code | 2 | 0.0001 |
| Most Responsible Diagnosis | 17 | 0.0005 |
| Principal Intervention | 5 | 0.0002 |

Notes

- * Acute and day surgery abstracts are identified using the Analytical Institution Type Code variable.
- † The population of reference for 2010–2011 DAD includes all separations from acute care and day surgery institutions in Canada (excluding stillbirths and cadaveric donor cases). All acute care data except that from Quebec is submitted to the DAD; the Quebec acute care data is submitted via Quebec's ministère de la Santé et des Services sociaux (MSSS) once per year and is included in the HMDB. Day surgery data from Ontario, Alberta and four institutions in Nova Scotia is submitted to NACRS. The population of reference for the DAD can be identified by either the Analytical Institution Type Code or the Institution Type Code but is most often identified by the former. Information about the HMDB and NACRS can be found in the *Data Quality Documentation, Hospital Morbidity Database and Data Quality Documentation, National Ambulatory Care Reporting System*. This document refers to the set of records submitted to the DAD only.

Source

Discharge Abstract Database, 2010–2011, Canadian Institute for Health Information.

To protect patient anonymity in the analytical environment, CIHI removes the original Health Card Number (HCN) from the analytic (SAS) data sets and replaces it with a scrambled HCN. Since the scrambling process is done consistently, the scrambled HCN can be used to link records across fiscal years within the DAD and across CIHI data holdings. Access to the unscrambled HCN has always been restricted from external data users and is now restricted from internal CIHI data users as well.

During data processing, HCNs with the values of 0, 1, 8 or 9 in the HCN field are scrambled to the HCN value of 000000000000, which is the same value applied to invalid HCNs. As a result of this process, HCNs with valid values (including the valid values 0 and 1, which are used to indicate that the patient has an HCN but it is unavailable at the time of data collection) can no longer be distinguished from those with invalid values (such as Z), as they are now all reassigned to the same value of 000000000000. From the point of view of data quality, invalidly formatted HCNs differ from those with 0 and 1 values, even though neither value can be used to link records for analysis. In the 2010–2011 DAD, only 148 abstracts of the **30,664** that scrambled to 000000000000 were related to HCNs with an invalid value of Z.

Table 9: Number of Acute Care and Day Surgery Abstracts* Submitted to the DAD, 2010–2011, With Scrambled Health Care Number Equal to 000000000000, for the Population of Reference†

| Scrambled Health Care Number | Number and Percent of Acute and Day Surgery Abstracts |
|------------------------------|---|
| 000000000000 | 30,664 (0.94%) |

Notes

- * Acute and day surgery abstracts are identified using the Analytical Institution Type Code.
- † The population of reference for the 2010–2011 DAD includes all separations from acute care and day surgery institutions in Canada (excluding stillbirths and cadaveric donor cases). All acute care data except that from Quebec is submitted to the DAD; the Quebec acute care data is submitted via Quebec’s ministère de la Santé et des Services sociaux (MSSS) once per year and is included in the HMDB. Day surgery data from Ontario, Alberta and four institutions in Nova Scotia is submitted to NACRS. The population of reference for the DAD can be identified by either the Analytical Institution Type Code or the Institution Type Code but is most often identified by the Analytical Institution Type code. Information about the HMDB and NACRS can be found in the *Data Quality Documentation, Hospital Morbidity Database and Data Quality Documentation, National Ambulatory Care Reporting System*. This document refers to the set of records submitted to the DAD only.

Source

Discharge Abstract Database, 2010–2011, Canadian Institute for Health Information.

Unit Non-Response

Unit non-response can occur at either the institution level (the frame unit) or the record level (the unit of analysis).

Record-level unit non-response occurs when an entire record is missing. The unit response rate, which is the complement of the unit non-response rate, is usually computed by CIHI rather than the unit non-response rate.

Although every institution is required to submit 12 full periods of data (13 in British Columbia), some institutions may not have any separations (discharges) for one or more periods. They are required to submit data files indicating zero separations (discharges) for such periods so that the institutions are not recorded as a failure to report. CIHI received data files indicating zero discharges from 13 institutions that did not have any separations to report in any fiscal period for 2010–2011. These “no separations” data files do not constitute record-level unit non-response, as they confirm that the number of discharges for each period was zero.

Institution-level unit non-response occurs when an institution listed on the database frame does not submit any data file for the entire fiscal year. Institution-level unit non-response is not likely to occur in the DAD since all institutions on the frame are mandated to submit data to the DAD. However, two valid institutions from Ontario did not submit any data to CIHI in 2010–2011 due to staff shortage. A total of 236 abstracts were not reported to CIHI. The missing data from these two institutions constitutes institution-level unit non-response as no data files were submitted for the entire fiscal year. The unit non-response rate at the institution level in the DAD for 2010–2011 was 0.23%.

Measurement Error

Measurement error assesses the degree to which the values reported match the values that should have been reported.

- **Electroconvulsive therapy (ECT) Intervention Code: It is imperative that the appropriate Intervention Code be assigned for** electroconvulsive therapy—ECT 1.AN.09.JA-DV *Stimulation, brain using external electrical stimulation (for shock or convulsion)*—as it can impact CMG assignment. It is mandatory to record ECT in the Mental Health Indicator Group 15 Field 09—ECT treatment for the following provinces: Manitoba, Newfoundland and Labrador, New Brunswick and Ontario. It is optional in all other provinces/territories.

Recording ECT intervention only in Group 15 Field 09 and not in Group 11 Field 02—Intervention Code could potentially result in these cases being grouped inappropriately (meaning, as CMGs without ECT). In the DAD 2010–2011, there were 398 cases with ECT recorded in a Mental Health Indicator group, and of those cases, 10 were grouped to the CMG with psychiatric conditions without ECT (CMG 677, 691, 678, 689 or 693).

- **Underestimated or overestimated wait time in the emergency department (ED):** Starting with 2007–2008, the Decision to Admit Date/Time data element was no longer captured. The data element captured is Date/Time Patient Left the Emergency Department, but this data element is not mandatory in all provinces/territories. Wait Time in the ED is a derived field calculated as the time between the Admit Date/Time and the Date/Time Patient Left the ED. A wait time in the ED that is greater than 168 hours is considered excessive. However, this is not necessarily a data quality error because there are patients that spend their entire stay in the ED, although they are admitted as inpatients. In the 2010–2011 DAD, there were 359 abstracts with a Wait Time in the ED value greater than 168 hours. The majority of cases (253 abstracts) came from British Columbia.
- **Intervention Date repeated for multiple interventions undertaken in one operative episode and vendor event count differs from CIHI:** According to the guideline provided in the *DAD Abstracting Manual*,¹ when more than one CCI code is required to capture the interventions performed in a single operative episode, the Intervention Episode Start Date should be recorded only once with the first CCI code; the dates for the other CCI codes for the same episode should be blank. This is important for processing the abstract on the DAD mainframe, as the episode sequence ID is increased for each date entered. Repeated capture of the Intervention Date for multiple interventions undertaken during the same episode results in the Episode Sequence ID being erroneously increased for each code. This means that the number of operative episodes identified may be inflated.

If the user forgets to also identify the intervention episode using the Intervention Episode Start Date, the Episode Sequence ID will not be increased for the episode. CIHI will, therefore, undercount the number of intervention episodes and the vendor-assigned intervention event count will differ from the intervention event count calculated by CIHI.

- **Multiple out-of-hospital (OOH) interventions recorded on the same date in one abstract:** The OOH field is a flag used to indicate that an intervention episode was performed in the ambulatory care setting of another facility during the current inpatient stay in the reporting facility. Usually, due to medical, administration or traffic reasons, only one episode of OOH procedures is performed within one day. There were 67 abstracts with more than two episodes of OOH procedures within one day. This number indicates that the coders may over-assign the Intervention Episode Start Date for the OOH procedures, as the episode count is increased for each Intervention Episode Start Date entered.

- Readmission Codes when Admission Category is Elective:** The Readmission Code classifies all inpatients as new admissions or subsequent visits to the same health care facility by the same patient. The Admission Category is the patient classification on admission to a health care facility. Both data elements can capture whether the admission was planned/elective or unplanned. However, for 148 abstracts, the Readmission Code and the Admission Category did not consistently indicate whether the admission was planned or unplanned. The Admission Category was Elective, but the Readmission Codes indicated an Unplanned Admission. These records generated a warning message, but these combinations can be entered into the abstracting system. These findings reflect a variation in the usage and interpretation of the Readmission Code data element across facilities in Canada. These cases are not necessarily erroneous. For example, an obstetric patient was admitted to a facility two weeks ago for false labour. She was scheduled for admission to the same facility for term delivery. Before the term, she was in active labour and immediately admitted to the same facility before the scheduled date. In this case, the Admission Category was recorded as elective because the patient was expected to deliver the baby in this facility. However, the Readmission Code could be recorded as an unplanned readmission as the early delivery admission was unexpected.
- J09 code used to identify H1N1 influenza:** After the H1N1 influenza outbreak in early 2009, CIHI, the World Health Organization (WHO) and the International Update and Revision Committee of the ICD-10 (URC) decided to use the code J09 *Influenza due to identified avian influenza virus* to identify H1N1 influenza until a unique code could be developed, as there had been no confirmed cases of avian flu in Canada. The J09 code was a new ICD-10-CA code for 2006–2007. A data quality audit performed by CIHI in May 2009 to confirm if the J09 code had been used in the DAD for 2006–2007, 2007–2008 and 2008–2009 revealed that the J09 code had been used by some facilities. The DAD program area followed up with these facilities and all cases submitted prior to the new coding directive were confirmed as coding errors. As the closed years of DAD data (2006–2007 and 2007–2008) cannot be corrected, the DAD program area will record this data quality issue in the DAD data quality documentation for these two years. In the 2008–2009 DAD, all the errors were corrected.

In 2010–2011, the J09 code was still used to identify H1N1 influenza, as the new, unique H1N1 code had not yet been implemented. There were approximately 700 cases in 2010–2011.

- **Discharge Disposition Died (07) recorded twice for the same HCN:** The DAD program area identified 16 instances where a Discharge Disposition of Died (07) was recorded more than once for the same HCN in the 2010–2011 DAD. This duplicate death issue has also been identified when linking records by the same HCN across the DAD and NACRS databases. There were 36 abstracts that had Discharge Disposition of Died in the DAD and Visit Disposition of Death in NACRS with the same HCN. CIHI will update the *DAD Abstracting Manual*,¹ where necessary, to ensure that the collection guidelines are clearer in order to prevent this in the future.
- **Variations on the use of Discharge Disposition for Patients who do not return from a pass:** In the 2008–2009 DAD, a new value of 12 (Patients who did not return from a pass) was added to the Discharge Disposition data element. The DAD program area identified instances where facilities used Discharge Disposition 05 (Discharge home), 06 (Signed out), 07 (Died) or 12 (Patients who did not return from a pass) if the patient did not return from a pass. For example, some facilities used the value 12 if a patient died while out on pass while other facilities used the value 07. New instructions were provided in the 2010–2011 *DAD Abstracting Manual*¹ on how to use discharge disposition for patients who leave the facility on a time-limited pass and do not return.
- **Diagnosis Cluster, post-intervention condition and drug-resistant microorganism issues:** The Diagnosis Cluster is a new DAD data element introduced in 2009–2010, and is mandatory for post-intervention conditions and drug-resistant microorganisms (U82 to U85). The Diagnosis Cluster is used to link the ICD-10-CA codes with the same Diagnosis Cluster value to describe a condition, illness and/or diagnosis.

Drug-resistant micro-organism codes in the range U82 to U85 must be linked with at least one other code on the abstract using the same Diagnosis Cluster value.

All post-intervention conditions must have at least two codes: the **primary code** (T-code—T80 to T88, PP-code—post-procedural disorder code at the end of the body system chapter, or regular code—all codes other than T-codes or PP-codes) and an **external cause code** (Y60 to Y84), and the codes must be linked using the same Diagnosis Cluster value.

See Appendix A in the *Discharge Abstract Database Open-Year Technical Specifications for Data Quality Analysis, 2010–2011* on the DAD Client Services website.

The mandatory status of this data element is not enforced by edits; hence the following data quality issues were discovered in the 2010–2011 data:

- There are abstracts where a Diagnosis Cluster is assigned with only one Diagnosis Code.

- There are abstracts where a post-intervention condition code (T80 to T88, PP-code), external cause code (Y60 to Y84) or drug-resistant microorganism code (U82 to U85) are assigned without a Diagnosis Cluster.
- There are abstracts where post-intervention condition codes (T80 to T88, PP code) are assigned without a corresponding external cause code (Y60 to Y84).

Note: Given that this was a new data element in 2009–2010, CIHI provided more instructions in 2010–2011 via coding tips, coding query and education. Users are advised to use this field with caution until edits are put in place in 2012–2013.

- **Palliative care Diagnosis Code Z51.5 assigned to Type 2 or 3:**
A Diagnosis Type 2 (Post-Admit Comorbidity) or a Diagnosis Type 3 (Secondary Diagnosis) should not be assigned to diagnosis code Z51.5. Because palliative care is not a condition per se but rather a service provided to the patient, the diagnosis typing definitions do not fit nicely with Z51.5. The coding standard *Palliative Care* provides specific direction for Diagnosis Type assignment in certain circumstances. There were 352 abstracts with Diagnosis Code Z51.5 assigned with a Diagnosis Type 2 or Diagnosis Type 3.
- **Diagnosis Prefix 8 not assigned to Diagnosis Code Z51.5 Palliative Care:** As of 2009–2010, new definitions were assigned to Diagnosis Prefix 8 in the *DAD Abstracting Manual*.¹ The Diagnosis Prefix 8 is assigned with Diagnosis Code Z51.5 when palliative care is documented as a known component of the patient's care prior to arrival at the facility. There were 61 abstracts with Diagnosis Prefix 8 assigned with other Diagnosis Codes.
- **Diagnosis Prefixes 5 and 6:** New definitions for Diagnosis Prefixes 5 and 6 were implemented in 2009–2010. The new definitions mandated the recording of Diagnosis Prefixes 5 and 6 accordingly:

Diagnosis Prefix 5 or 6 is recorded for a post-admit comorbidity (Diagnosis Type 2) that arose after admission and before or during the first intervention episode occurring in

- The Main OR (01) for any intervention; or
- The Cardiac Catheterization Room (08) for any intervention; or
- Another facility (out-of-hospital [OOH]) for select cardiac interventions (3.IP.10.^, 1.IJ.50.^ and 1.IJ.57.^).

The following data quality issues with this data element were discovered:

- Post-admit comorbidities were not assigned Diagnosis Prefix 5 or 6 when an intervention was performed in the main OR, cardiac catheterization room, or there was one of the three selected OOH interventions.
- Post-admit comorbidities were assigned Diagnosis Prefix 5 or 6 but the intervention was not performed in the main OR or cardiac catheterization room or was not one of the three selected OOH interventions (3.IP.10.^, 1.IJ.50.^ and 1.IJ.57.^).

- Post-admit comorbidities were assigned Diagnosis Prefix 5 or 6 but no interventions were performed.
- Diagnosis Prefix 5 or 6 was recorded with a Diagnosis Type other than 2.
- Diagnosis Prefix 5 or 6 was recorded on day surgery records.
- Diagnosis Prefix 5 or 6 was recorded on abstracts with obstetrical codes in the range of O00 to O99.

Note: Since the implementation of Diagnosis Prefixes 5 and 6 in 2009–2010, there have been a number of errors in the DAD for this data element. As a result, users are advised to use Diagnosis Prefixes 5 and 6 with caution. The DAD program area has provided more detailed instructions for assigning Diagnosis Prefixes 5 and 6 in the 2011–2012 *DAD Abstracting Manual*.¹ In 2012–2013, new edits will be implemented.

- **Multiple births coded as a single birth:** According to the coding standard, every newborn abstract must include a live born Z38– code to indicate the plurality of the newborn; a singleton should have a live born code in the range of Z38.0– to Z38.2–, and twins, triplets or other multiple births should have a live born code in the range of Z38.3– to Z38.8–.

More than 100 multiple birth newborn records had a singleton live born code rather than a multiple live born code.

For the purpose of identifying multiple births in the data, a multiple birth is defined as more than one baby delivered by the same mother during the same delivery episode in the same institution (that is, newborn records with the same Institution Number, Maternal/Newborn Chart Number and Admission Date).

Note: It is possible for the multiple births to occur on different dates. The mother may deliver one baby close to midnight and the other baby after midnight, or there may be complications necessitating the delivery of one baby several days (or even weeks) following the birth of the first baby. Multiple births can also occur in different facilities in cases of transfers, where the mother delivers one baby at the one facility and is subsequently transferred to deliver the other baby (or babies) at a second facility. Also, one baby may be born en route (such as in an ambulance) prior to admission to hospital. Cases where there is a stillborn or selective fetal reduction may also result in a multiple birth. However, these situations are uncommon and are excluded from this analysis. Data users can perform further analysis, if required.

- **Intervention Pre-Admit Flag recorded with an intervention not on the list of selected flagged interventions:** The Intervention Pre-Admit Flag is a mandatory data element introduced in 2009–2010. It is mandatory to record as Y (Yes) when the following interventions are initiated prior to admission:
 - Certain flagged interventions when they continue into the inpatient stay—see 2010–2011 *DAD Abstracting Manual*.
 - Thrombolytic therapy—see *Canadian Coding Standards for ICD-10-CA and CCI 2009*;⁹ and
 - Induction of labour—see *Canadian Coding Standards for ICD-10-CA and CCI 2009*.⁹

Flagged interventions are used to identify patients who are more complex and resource intensive than similar patients who do not require these interventions. While the interventions may not necessarily be expensive on their own, they are indicative of patients with higher expected resource use and therefore are used to adjust the CMG+ resource indicators. There were many abstracts that had the Intervention Pre-Admit Flag set to Y where interventions recorded were not one of the flagged interventions. Users are advised to use this data element with caution. Detailed instructions on how to record this data element were added in the 2010–2011 *DAD Abstracting Manual*.¹

- **Interventions performed on males in Intervention Location 05 (Therapeutic Abortion Unit) and 10 (Obstetrics Case Room/Delivery Room/OR):** The Intervention Location Code records the physical area in the health care facility where an intervention was performed. Intervention Location 05 is the therapeutic abortion unit and Intervention Location 10 is the obstetrics case room/delivery room/OR. There were 39 records in the 2010–2011 DAD where male interventions were performed in locations 05 or 10. These records do not include newborn males who had circumcision or phototherapy interventions. This is not necessarily a data quality issue as it may be related to hospital resource usage. However, users should be aware of the records.

Response Bias

While measurement error occurs when a data element is coded incorrectly, response bias occurs when the errors occur in a systematic way.

The Data Quality department at CIHI has implemented a five-year plan for ongoing reabstraction studies, starting with DAD 2005–2006 data and ending with DAD 2009–2010 data. Studies were also conducted as far back as 1999–2000. The purpose of these studies is to evaluate the overall quality of clinical and non-clinical information and to identify issues associated with coding and abstracting variations. The studies found areas of response bias.

See the References at the end of this document for links to the studies.

6.2 Comparability

Comparability is defined as the extent to which databases are consistent over time and use standard conventions (such as data elements or reporting periods) that make them similar to other databases).

Equivalency

Fiscal year 2004–2005 marked the first year of full adoption of the ICD-10-CA and CCI classification system for provinces/territories that submitted data to the DAD. The classification scheme change since 2001–2002 resulted in a number of challenges for users wishing to trend data over time. For details, see *Coping With the Introduction of ICD-10-CA and CCI: Impact of New Classification Systems on the Assignment of Case Mix Groups/Day Procedure Groups*,¹⁷ based on 2001–2002 and 2002–2003 data, on CIHI's website. **Users are strongly advised to analyze data using the classification scheme in which the data was collected.**

Linkage

- **Health Care Number (HCN) systems are evolving:** Provincial standards, edits and procedures regarding HCNs have changed over the years. British Columbia, Alberta, Ontario, Saskatchewan and the Northwest Territories have revised their health care numbering systems (for example, from family to individual-based) and have issued new HCNs. Because CIHI information does not link the old and the new numbering systems, users must exercise caution when using HCNs for linkage purposes. Note that, under its Privacy and Confidentiality Policy, CIHI releases only scrambled HCNs to both internal and external users.
- **Version codes on Ontario HCNs:** Some HCNs in Ontario may include a version code. Where present (in HCNs of more than 10 bytes), it appears after the 10-digit HCN. Version codes were introduced to uniquely identify a health card and to verify the status of the health card. Some cards do not have a version code, and version codes are not always recorded on DAD abstracts. When new Ontario health cards are issued or a replacement card is issued, the 10-digit numeric portion of the HCN remains the same but the version code changes. Linkage over time therefore can only be accomplished by using the first 10 digits of either the HCN or the scrambled HCN.
- **Scrambled Health Care Number:** CIHI's use of consistently scrambled HCNs makes it possible to link data within and across years. One caveat is that the invalid and missing HCNs are converted to 000000000000 and so should be excluded before data is linked.
- **Patient postal codes do not necessarily provide an accurate picture of patient residence:** The post office box numbers used by some rural residents may point to a region different from the place of residence. In addition, when rural postal codes map to more than one enumeration area, it becomes difficult to determine a specific place of residence. The forward

sortation area (first three digits of the postal code) is typically the lowest level of aggregation available to external users under CIHI's Privacy and Confidentiality Policy. The release of information for small geographical areas may also be restricted to ensure patient privacy and confidentiality of patient information.

- **Discrepancy in patient residence as identified by the Postal Code and Health Care Number:** Among the acute care abstracts in the 2010–2011 DAD, approximately 19.56% of out-of-province records (abstracts where the Province Issuing Health Care Number code did not match the Submitting Province code) had a postal code that is different from the reporting province or territory. This may be for a variety of reasons—for example, a patient who has relocated may have sought care using the HCN issued by the original province and territory and the postal code in the current province/territory. Users need to exercise judgment as to which data element is best suited to identify patient residence. For data elements like Postal Code, Health Care Number and Provider Number, CIHI's edit system can only check for format, not actual values. Therefore, incorrect HCNs or retired Postal Codes may be included in the database as long as they have the valid formats. DAD analysts conduct testing during the open year to assess and address these cases.
- **Incomplete linkage between mothers and babies:** The Maternal/Newborn Chart Number and Chart Number are the data elements used to link mothers and babies. A mother's Chart Number is placed on the baby's abstract in the Maternal/Newborn Chart Number field, and the baby's Chart Number is placed on the mother's abstract in the Maternal/Newborn Chart Number field. Users should be aware that mother-and-baby linkages may be incomplete because some institutions have not adhered to CIHI's guidelines for coding these fields; for example, some institutions added special characters (B, N, H) or leading zeros to the front of Chart Numbers and recorded them in the Maternal/Newborn Chart Number field. Other reasons for incomplete linkage include the following:
 - The manual entry of the Maternal/Newborn Chart Number in most facilities' registration system may result in typing errors.
 - The mother and baby might be discharged in different fiscal years. For example, the 2010–2011 DAD contains abstracts with discharges from April 1, 2010, to March 31, 2011. If a mother was discharged in 2010–2011 and her baby was discharged in 2011–2012, for medical or other reasons, it is not possible to link both of them within one fiscal year.
- **Multiple linkages of newborn Chart Numbers to a mother's Chart Number:** Newborn abstracts may appear to link to more than one mother, as CIHI has found examples of the same newborn's Chart Number on more than one mother's abstract. CIHI monitored these cases during the open year and contacted institutions to have these abstracts corrected and resubmitted to the DAD.

- **Incomplete HCNs for newborns:** The provinces and territories have different guidelines for coding HCNs for newborns. Some systematically code 0—insured resident of reporting province/territory, but Health Care Number not available, 1—not applicable or the mother’s HCN on the newborn abstract. In other jurisdictions, newborns receive a valid HCN before leaving the institution. For example, New Brunswick, Nova Scotia, Prince Edward Island, Alberta and the Northwest Territories instruct facilities to record the mother’s HCN on the baby’s chart. When a newborn has not been assigned a valid HCN before leaving the institution, or the HCN is 0 or 1, the HCN is defaulted to 000000000000 in the DAD. This prevents future linkages to the newborn’s record.

Standardization

- **Provincial/territorial variation in DAD data collection:** The collection of a DAD data element within a province/territory can be mandatory, optional or vary in definition, depending on the decisions made by the provincial/territorial ministries of health. Response rates are typically low for non-mandatory fields. Users should be aware of these variations when conducting data analyses. Appendix A lists the key provincial abstracting differences for the 2010–2011 DAD. Please refer to the *DAD Abstracting Manual*¹ for details.
- **Incomplete non-acute care data in the DAD:** Comprehensiveness of non-acute care data (such as day surgery, rehab or chronic care) collected in the DAD varies by province/territory. Users of the data should be aware that comprehensiveness and requirements for data collection from non-acute institutions via the DAD vary over time, and that institution types may also change over the years. For specific details of these changes, contact CIHI.
- **Lack of standardized definitions for levels of care across Canada:** Currently there are no standardized definitions for levels of care. To minimize the differences between definitions for levels of care across all jurisdictions and to facilitate national comparison, the Analytical Institution Type Code was introduced in the DAD in 2004–2005. It is a CIHI-defined data element that is assigned when the Institution Type assigned to an Institution Number is known to differ from the type of care that is provided. Before assigning this value, CIHI consults and confirms the level of care with the institutions and provincial/territorial health agencies. The provincially/territorially assigned Institution Type remains in the database under the Institution Type Code field. Users are advised to use the Analytical Institution Type Code when performing analysis on acute care data.

Historical Comparability

- **Health Care Number (HCN) systems are evolving:** Provincial standards, edits and procedures regarding HCNs have changed over the years. British Columbia, Alberta, Ontario, Saskatchewan and the Northwest Territories have revised their HCN systems (for example, from family to individual based) and have issued new HCNs. Because CIHI information does not link the old and the new numbering systems, users must exercise caution when using HCNs for linkage purposes. Note that CIHI releases only scrambled HCNs to external users under its Privacy and Confidentiality Policy.
- **Version codes on Ontario HCNs:** HCNs in Ontario may include a version code. Where present (in HCNs of more than 10 bytes), it appears after the 10-digit HCN. Version codes were introduced to uniquely identify a health card and for verifying the status of the health card. Some health cards do not have a version code, and version codes are not always recorded on DAD abstracts. When new Ontario health cards are issued or a replacement card is issued, the 10-digit numeric portion of the HCN remains the same but the version code changes. Linkage over time therefore can only be accomplished by using the first 10 digits of either the HCN or scrambled HCN.
- **Scrambled Health Care Number:** CIHI's use of consistently scrambled HCNs makes it possible to link data within and across years. One caveat is that the invalid and missing HCNs are converted to 000000000000 and so should be excluded before data is linked.
- **Institution Number is not standardized over time:** Institution Numbers are assigned by provincial and territorial ministries or departments of health. One facility can be assigned different numbers as facilities merge or close or as the type of care provided in the facility changes. Longitudinal records of Institution Number changes are well maintained in most provinces and territories; however, linkages by Institution Number over time can be challenging, especially in Ontario.

Appendix A: 2010–2011 Mandatory DAD Data Elements

ICD-10-CA Submitting Provinces Inpatient

This document is intended for use in conjunction with the *DAD Abstracting Manual*¹ available on CIHI's website. Please refer to the *DAD Abstracting Manual*¹ for details on provincial variations.

| Legend | |
|----------------|-----------------------------|
| M | Mandatory data element |
| Blank | Optional data element |
| Shading | Not submitting in ICD-10-CA |

| Group and Field No. | Data Element | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | N.W.T. | Y.T. | Nun. |
|---------------------|--------------------------------------|------|--------|------|------|------|------|------|-------|-------|------|--------|------|------|
| 01 01 | Institution Number | M | M | M | M | | M | M | M | M | M | M | M | M |
| 01 03 | Batch Year | M | M | M | M | | M | M | M | M | M | M | M | M |
| 01 04 | Batch Period | M | M | M | M | | M | M | M | M | M | M | M | M |
| 01 05 | Batch Number | M | M | M | M | | M | M | M | M | M | M | M | M |
| 01 06 | Abstract Number | M | M | M | M | | M | M | M | M | M | M | M | M |
| 01 08 | Coder Number | M | M | M | M | | M | M | M | M | M | M | M | M |
| 01 09 | Chart Number | M | M | M | M | | M | M | M | M | M | M | M | M |
| 01 10 | Register Number | M | | M | M | | M | | | | | | M | |
| 01 11 | Second Chart/ Register Number | | | | | | | | | | | | | |
| 01 12 | Maternal/ Newborn Chart Number | M | M | M | M | | M | M | M | M | M | M | M | M |
| 03 01 | Health Care Number | M | M | M | M | | M | M | M | M | M | M | M | M |
| 03 02 | Postal Code | M | M | M | M | | M | M | M | M | M | M | M | M |
| 03 03 | Residence Code | M | | M | M | | M | | | M | | M | | M |
| 03 04 | Gender | M | M | M | M | | M | M | M | M | M | M | M | M |
| 03 05 | Prov./Terr. Issuing HCN | M | M | M | M | | M | M | M | M | M | M | M | M |

| Group and Field No. | Data Element | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | N.W.T. | Y.T. | Nun. |
|---------------------|----------------------------------|------|--------|------|------|------|------|------|-------|-------|------|--------|------|------|
| 03 06 | Responsibility for Payment | M | M | M | M | | M | M | M | M | M | M | M | M |
| 03 08 | Birthdate | M | M | M | M | | M | M | M | M | M | M | M | M |
| 03 09 | Birthdate is Estimated | M | M | M | M | | M | M | M | M | M | M | M | M |
| 03 11-27 | Prov./Terr. Ancillary Data | | | M | | | | | M | M | M | | | |
| 04 01 | Admission Date | M | M | M | M | | M | M | M | M | M | M | M | M |
| 04 02 | Admission Time | M | M | M | M | | M | M | M | M | M | M | M | M |
| 04 04 | Institution From | M | M | M | M | | M | M | M | M | M | M | M | M |
| 04 05 | Admit Category | M | M | M | M | | M | M | M | M | M | M | M | M |
| 04 06 | Entry Code | M | M | M | M | | M | M | M | M | M | M | M | M |
| 04 07 | Admit via Ambulance | M | M | M | M | | M | M | M | M | M | M | M | M |
| 04 08 | Readmission Code | M | M | M | M | | M | | | | M | M | | M |
| 04 13 | Date Patient Left ED | M | | M | | | M | M | M | M | M | | | |
| 04 14 | Time Patient Left ED | M | | M | | | M | M | M | M | M | | | |
| 05 01 | Discharge Date | M | M | M | M | | M | M | M | M | M | M | M | M |
| 05 02 | Discharge Time | M | M | M | M | | M | M | M | M | M | M | M | M |
| 05 04 | Institution To | M | M | M | M | | M | M | M | M | M | M | M | M |
| 05 05 | Discharge Disposition | M | M | M | M | | M | M | M | M | M | M | M | M |
| 07 01 | Main Patient Service | M | M | M | M | | M | M | M | M | M | M | M | M |
| 07 02 | Patient Sub-Service | | | M | M | | | | | | | | | |
| 07 03 | Weight (0–29 days on admission) | M | M | M | M | | M | M | M | M | M | M | M | M |
| 07 04 | Abstract Overflow | | | | | | | | | | | | | |
| 08 01 | Service Transfer (3 occurrences) | | | | M | | M | M | | M | M | | | |
| 08 01 | Alternate Level of Care (ALC) | M | M | M | M | | M | M | M | M | M | M | M | M |

| Group and Field No. | Data Element | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | N.W.T. | Y.T. | Nun. |
|---------------------|--|------|--------|------|------|------|------|------|-------|-------|------|--------|------|------|
| 08 02 | Service Transfer Sub-Service | | | | M | | | | M | M | | | | |
| 08 03 | Service Transfer Days (if SV Transfer coded) | M | M | M | M | | M | M | M | M | M | M | M | M |
| 09 01 | Provider Type (8 occurrences) | M | M | M | M | | M | M | M | M | M | M | M | M |
| 09 02 | Provider Number | M | M | M | M | | M | M | M | M | M | M | M | M |
| 09 03 | Provider Service | M | M | M | M | | M | M | M | M | M | M | M | M |
| 10 01 | Diagnosis Prefix (25 occurrences) Prefix 5, 6, 8 mandatory when applicable | M | M | M | M | | M | M | M | M | M | M | M | M |
| 10 02 | Diagnosis Code (ICD-10-CA) (25 occurrences) | M | M | M | M | | M | M | M | M | M | M | M | M |
| 10 03 | Diagnosis Cluster (25 occurrences) Mandatory for drug-resistant microorganisms and post-intervention conditions | M | M | M | M | | M | M | M | M | M | M | M | M |
| 10 04 | Diagnosis Type | M | M | M | M | | M | M | M | M | M | M | M | M |
| 10 05 | Cancer Staging – Clinical Tumour | | | | | | | | | | | | | |
| 10 06 | Cancer Staging – Clinical Node | | | | | | | | | | | | | |
| 10 07 | Cancer Staging – Clinical Metastasis | | | | | | | | | | | | | |
| 10 08 | Cancer Staging – Pathology Tumour | | | | | | | | | | | | | |
| 10 09 | Cancer Staging – Pathology Node | | | | | | | | | | | | | |
| 10 10 | Cancer Staging – Pathology Metastasis | | | | | | | | | | | | | |
| 10 11 | Cancer Staging – Summary Staging | | | | | | | | | | | | | |

| Group and Field No. | Data Element | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | N.W.T. | Y.T. | Nun. |
|---------------------|---|------|--------|------|------|------|------|------|-------|-------|------|--------|------|------|
| 11 01 | Intervention Episode Start Date (formerly called Intervention Date) (20 occurrences) | M | M | M | M | | M | M | M | M | M | M | M | M |
| 11 02 | Intervention Code (CCI) | M | M | M | M | | M | M | M | M | M | M | M | M |
| 11 03 | Status Attribute (if mandatory for CCI code) | M | M | M | M | | M | M | M | M | M | M | M | M |
| 11 04 | Location Attribute (if mandatory for CCI code) | M | M | M | M | | M | M | M | M | M | M | M | M |
| 11 05 | Extent Attribute (if mandatory for CCI code) | M | M | M | M | | M | M | M | M | M | M | M | M |
| 11 06 | Intervention Provider Number | M | | M | M | | | M | M | | M | M | M | M |
| 11 07 | Intervention Provider Service | M | | M | M | | | M | M | | M | M | M | M |
| 11 08 | Tissue Code | | | | | | | | | | | | | |
| 11 10 | Intervention Location Codes (all) | M | M | M | M | | M | M | M | M | M | M | M | M |
| 11 11 | Anaesthetist | M | | | M | | M | M | | | M | M | | |
| 11 12 | Anaesthetist Technique | M | M | M | M | | M | M | M | M | M | M | M | M |
| 11 13 | OOH Indicator | M | M | M | M | | M | M | M | M | M | M | M | |
| 11 14 | OOH Institution Number | M | M | M | M | | M | M | M | M | M | M | M | |
| 11 15 | Unplanned Return to Intervention Location | M | | | | | | | M | M | M | | | |
| 11 16 | Died in OR | M | M | M | M | | M | M | M | M | M | M | M | M |
| 11 17 | Intervention Episode Start Time (mandatory for intervention episodes performed in Main OR or Cardiac Cath Room) | M | M | M | M | | M | M | M | M | M | M | M | M |

| Group and Field No. | Data Element | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | N.W.T. | Y.T. | Nun. |
|---------------------|---|------|--------|------|------|------|------|------|-------|-------|------|--------|------|------|
| 11 18 | Intervention Episode End Date (mandatory for intervention episodes performed in Main OR or Cardiac Cath Room) | M | M | M | M | | M | M | M | M | M | M | M | M |
| 11 19 | Intervention Episode End Time (mandatory for intervention episodes performed in Main OR or Cardiac Cath Room) | M | M | M | M | | M | M | M | M | M | M | M | M |
| 11 20 | Intervention Pre-Admit Flag (mandatory for specific interventions) | M | M | M | M | | M | M | M | M | M | M | M | M |
| 13 01 | SCU Death Indicator (1 occurrence) | M | M | M | M | | M | M | M | M | M | M | M | M |
| 13 02 | SCU Unit Number (6 occurrences) | M | M | M | M | | M | M | M | M | M | M | M | M |
| 13 03 | SCU Admit Date | M | M | M | M | | M | M | M | M | M | M | M | M |
| 13 04 | SCU Admit Time | M | M | M | M | | M | M | M | M | M | M | M | M |
| 13 05 | SCU Discharge Date | M | M | M | M | | M | M | M | M | M | M | M | M |
| 13 06 | SCU Discharge Time | M | M | M | M | | M | M | M | M | M | M | M | M |
| 13 09 | Glasgow Coma Scale | M | M | M | M | | M | M | M | M | M | M | M | M |
| 14 01-19 | Basic Options | M | | | | | | | | | | | | |
| 15 02-14 | Mental Health Indicators | M | | | M | | M | M | | | | | | |
| 16 01-18 | Project Information (5 occurrences) | | M | M | M | | M | | | M | M | | | |
| 17 01-07 | Blood Information | M | M | M | M | | M | M | M | M | | M | M | M |
| 18 01-09 | Reproductive Care Information | M | M | M | M | | M | M | M | M | M | M | M | M |

| Group and Field No. | Data Element | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | N.W.T. | Y.T. | Nun. |
|---------------------|---------------------------------|------|--------|------|------|------|------|------|-------|-------|------|--------|------|------|
| 19 01-14 | Licensed Vendor Assigned Values | | | M | M | | | M | | | | | | |
| 19 15 | Abstract Vendor ID Number | M | M | M | M | | M | M | M | M | M | M | M | M |

Note

Quebec does not submit DAD data to CIHI at this time.

Appendix B: Evolution of DAD Data Elements 2001–2002 to 2010–2011

This document must be referenced when performing trending analysis on DAD data and is intended for use in conjunction with the *DAD Abstracting Manual*.¹ Please refer to the *DAD Abstracting Manual*¹ or contact CIHI for details behind these changes.

| Legend | |
|--------|-----------------------------------|
| * | No change to existing field |
| C | Change in data element definition |
| F | Change in data element format |
| D | Deleted data element |
| N | New data element |
| O | Field did not exist that year |
| | Abstract (ICD-10-CA/CCI) |

| Group and Field No. | Data Element | ICD-10 Abstract | | | | | | | | | |
|---------------------|---|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | 2001–2002 | 2002–2003 | 2003–2004 | 2004–2005 | 2005–2006 | 2006–2007 | 2007–2008 | 2008–2009 | 2009–2010 | 2010–2011 |
| 01 01 | Province | D | O | O | O | O | O | O | O | O | * |
| 01 01 | Institution Number | D | O | O | O | O | O | O | O | O | * |
| 01 01 | Institution Number | * | * | * | * | * | * | * | * | * | * |
| 01 03 | Batch Year | * | * | * | * | * | * | * | * | * | * |
| 01 04 | Batch Period | * | * | * | * | * | * | * | * | * | * |
| 01 05 | Batch Number | * | * | * | * | * | * | * | * | * | * |
| 01 06 | Abstract Number | * | * | * | * | * | * | * | * | * | * |
| 01 08 | Coder Number | * | * | * | * | * | * | * | * | F | * |
| 01 09 | Chart Number | * | * | * | * | * | * | * | * | * | * |
| 01 10 | Register Number | F | * | * | * | * | * | * | * | * | * |
| 01 11 | Second Chart/ Register Number | * | * | * | * | * | * | * | * | * | * |
| 01 12 | Maternal/Newborn Chart/Register Number | N | * | * | * | C | * | * | * | * | * |
| 02 01 | Manual Length of Stay | O | O | O | O | O | O | O | O | O | * |
| 03 01 | Health Care Number | F | * | * | * | * | * | F | C, F | C | * |
| 03 02 | Postal Code | C | * | * | * | * | * | C | * | * | * |
| 03 03 | Residence Code | * | * | * | * | * | * | * | * | * | * |
| 03 04 | Sex | O | O | O | O | O | O | O | O | O | * |
| 03 04 | Gender | C | * | * | * | * | * | * | * | * | * |
| 03 05 | Province/Territory Issuing HCN | C | * | * | * | * | * | * | C | C | C |
| 03 06 | Responsibility for Payment | C | * | * | * | * | * | * | * | * | * |

| Group and Field No. | Data Element | ICD-10 Abstract | | | | | | | | | |
|---------------------|---------------------------------------|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | 2001–2002 | 2002–2003 | 2003–2004 | 2004–2005 | 2005–2006 | 2006–2007 | 2007–2008 | 2008–2009 | 2009–2010 | 2010–2011 |
| 03 07 | Marital Status | D | O | O | O | O | O | O | O | O | * |
| 03 08 | Birthdate | * | * | * | * | * | * | * | * | * | * |
| 03 09 | Age > 99 years | O | O | O | O | O | O | O | O | O | * |
| 03 09 | Birthdate is Estimated | * | * | * | * | * | * | * | * | * | C |
| 03 10 | Age is Unknown | O | O | O | O | O | O | O | O | O | * |
| 03 11-27 | Provincial/Territorial Ancillary Data | F | * | * | * | * | * | * | * | * | * |
| 04 01 | Admission Date | * | * | * | * | * | * | * | * | * | * |
| 04 02 | Admission Time | * | * | * | * | * | * | * | * | * | * |
| 04 04 | Institution From | F | * | * | * | * | * | C | * | * | C |
| 04 05 | Admit Category | C | * | C | * | * | * | * | C | * | * |
| 04 06 | Entry Code | * | * | * | * | * | * | * | * | * | * |
| 04 07 | Admit via Ambulance | * | * | * | * | F | C, F | * | * | * | * |
| 04 08 | Readmission Code | C | * | * | * | C | * | * | C | * | * |
| 04 09 | Unplanned Readmission | D | O | O | O | O | O | O | O | O | * |
| 04 10 | Wait Time in ER (in minutes) | D | O | O | O | O | O | O | O | O | * |
| 04 11 | ER Decision to Admit Date | N | * | * | * | * | * | D | O | O | * |
| 04 12 | ER Decision to Admit Time | N | * | * | * | * | * | D | O | O | * |
| 04 13 | Date Patient Left ED | N | * | * | * | * | * | * | * | * | * |
| 04 14 | Time Patient Left ED | N | * | * | * | F | * | * | * | C | * |
| 05 01 | Discharge Date | * | * | * | * | * | C | * | C | * | * |
| 05 02 | Discharge Time | * | * | * | * | * | C | * | C | * | * |
| 05 04 | Institution To | F | * | * | * | * | * | * | * | * | C |
| 05 05 | Date Ready for Discharge | D | O | O | O | O | O | O | O | O | C |
| 05 05 | Discharge Disposition | N | * | C | * | * | * | * | C, F | * | * |
| 05 06 | Reserved | D | O | O | O | O | O | O | O | O | * |
| 06 01 | Exit Alive | D | O | O | O | O | O | O | O | O | * |
| 06 02 | Autopsy | D | O | O | O | O | O | O | O | O | * |
| 06 03 | Coroner/Medical Examiner | D | O | O | O | O | O | O | O | O | * |
| 06 04-11 | Death Codes | D | O | O | O | O | O | O | O | O | * |
| 07 01 | Main Patient Service | * | * | * | * | * | C | * | * | * | * |
| 07 02 | Patient Sub-Service | * | * | * | * | * | * | * | * | * | * |
| 07 03 | Weight | C | * | * | * | * | * | * | * | * | * |
| 07 04 | Abstract Overflow | * | * | * | * | * | * | * | * | * | * |
| 08 01 | Service Transfer | * | * | * | * | * | C | * | * | * | C |
| 08 02 | Service Transfer Sub-Service | * | * | * | * | * | * | * | * | * | * |

| Group and Field No. | Data Element | ICD-10 Abstract | | | | | | | | | |
|---------------------|---------------------------------------|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | 2001–2002 | 2002–2003 | 2003–2004 | 2004–2005 | 2005–2006 | 2006–2007 | 2007–2008 | 2008–2009 | 2009–2010 | 2010–2011 |
| 08 03 | Service Transfer Days | * | * | * | * | * | * | * | * | * | C |
| 09 01 | Doctor/Provider Type | C | C | * | * | * | * | * | C, F | C | C |
| 09 02 | Doctor/Provider Number | F | * | * | * | * | * | * | * | * | C |
| 09 03 | Doctor/Provider Service | F | C | * | * | F | * | C | F | C | * |
| 10 01 | Diagnosis Prefix | C | * | * | * | * | * | * | F | C | C |
| 10 02 | Diagnosis Code | C | * | * | * | C | * | * | * | * | * |
| 10 03 | Diagnosis Suffix | D | O | O | O | O | O | O | O | O | * |
| 10 03 | Diagnosis Cluster | O | O | O | O | O | O | O | O | N | * |
| 10 04 | Diagnosis Type | C | * | C | C | F | * | C | C | * | * |
| 10 05-11 | Cancer Staging | N | * | * | * | * | * | * | * | * | * |
| 11 01 | Procedure/ Intervention Date | * | * | * | * | * | * | C | C | O | * |
| 11 01 | Intervention Episode Start Date | O | O | O | O | O | O | O | O | N | * |
| 11 02 | Procedure/ Intervention Code | C | * | * | * | * | * | * | C | * | * |
| 11 03 | Procedure Suffix | D | O | O | O | O | O | O | O | O | * |
| 11 04 | Procedure Doctor Number | D | O | O | O | O | O | O | O | O | * |
| 11 05 | Procedure Doctor Service | D | O | O | O | O | O | O | O | O | * |
| 11 06 | Tissue Code | D | O | O | O | O | O | O | O | O | C |
| 11 07 | Procedure Time | D | O | O | O | O | O | O | O | O | * |
| 11 08 | Operating Room | O | O | O | O | O | O | O | O | O | C |
| 11 08 | Intervention Location | D | O | O | O | O | O | O | O | O | C |
| 11 09 | Anaesthetist | D | O | O | O | O | O | O | O | O | C |
| 11 10 | Anaesthetic Technique | D | O | O | O | O | O | O | O | O | * |
| 11 11 | Out of Hospital Inst. No. | D | O | O | O | O | O | O | O | O | C |
| 11 12 | Unplanned Return to OR | D | O | O | O | O | O | O | O | O | * |
| 11 03/05 | Intervention Attributes | N | * | * | * | * | * | * | * | * | * |
| 11 06 | Intervention Provider Number | N | * | * | * | * | * | * | * | * | * |
| 11 07 | Intervention Provider Service | N | * | * | * | * | * | * | * | * | C |
| 11 08 | Tissue Code | N | C | * | * | * | * | * | * | * | * |
| 11 09 | Intervention Time | N | * | F | * | * | * | * | * | D | * |
| 11 10 | Intervention Location | N | * | * | * | * | * | * | C | C | * |
| 11 11 | Anesthetist | N | * | * | * | * | C | * | * | * | * |
| 11 12 | Anesthetic Technique | N | C | C | * | F | * | * | C | C | * |
| 11 13 | Out of Hospital Indicator | N | * | * | * | * | * | * | C | C | * |
| 11 14 | Out of Hospital Institution Number | N | * | * | * | * | * | * | * | * | C |
| 11 15 | Unplanned Return to OR | N | * | * | * | * | * | * | * | * | C |

| Group and Field No. | Data Element | ICD-10 Abstract | | | | | | | | | |
|---------------------|---------------------------------|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | 2001–2002 | 2002–2003 | 2003–2004 | 2004–2005 | 2005–2006 | 2006–2007 | 2007–2008 | 2008–2009 | 2009–2010 | 2010–2011 |
| 11 16 | Died in OR | N | * | * | * | * | * | * | C | C | C |
| 11 17 | Intervention Episode Start Time | O | O | O | O | O | O | O | O | N | C |
| 11 18 | Intervention Episode End Date | O | O | O | O | O | O | O | O | N | * |
| 11 19 | Intervention Episode End Time | O | O | O | O | O | O | O | O | N | * |
| 11 20 | Intervention Pre-Admit Flag | O | O | O | O | O | O | O | O | N | * |
| 12 01-06 | Therapies | D | O | O | O | O | O | O | O | O | * |
| 12 07 | Discharge Planning | D | O | O | O | O | O | O | O | O | * |
| 12 08 | Social Services | D | O | O | O | O | O | O | O | O | * |
| 12 09 | Preadmission Workup | D | O | O | O | O | O | O | O | O | * |
| 13 01 | SCU Death Indicator | C | * | * | * | * | * | * | * | * | * |
| 13 02 | SCU Unit Number | C | * | * | * | * | * | * | F | C | * |
| 13 03 | SCU Days | D | O | O | O | O | O | O | O | O | * |
| 13 03 | SCU Admit Date | N | * | * | * | * | * | * | * | * | * |
| 13 04 | SCU Admit Time | N | * | * | * | * | * | * | * | * | C |
| 13 05 | SCU Discharge Date | N | * | * | * | * | * | * | * | * | * |
| 13 06 | SCU Discharge Time | N | * | * | * | * | * | * | * | * | C |
| 13 09 | Glasgow Coma Scale | N | * | * | * | * | * | * | * | * | C |
| 14 01-19 | Basic Options | C | * | * | * | * | * | F | * | * | C |
| 14 18 | Basic Option R-ventilator days | D | O | O | O | O | O | O | O | O | C |
| 15 01 | Reserved | O | O | O | O | O | O | O | O | O | C |
| 15 02-14 | Mental Health Information | * | * | * | * | * | * | * | C | * | * |
| 16 01-18 | Project Information | * | * | * | * | * | C | F | * | * | * |
| 16 01-06 | Blood Information #302 | O | O | O | O | O | O | O | O | O | * |
| 17 01-07 | Blood Information | * | * | * | * | * | * | * | * | * | * |
| 18 01-12 | Reproductive Care | N | * | * | * | * | C | * | * | * | * |
| 18 01-05 | Therapeutic Abortion Info | D | O | O | O | O | O | O | O | O | * |
| 19 01-15 | Vendor Assigned Values | N | * | * | * | * | * | F | * | * | * |

Note

N/A: not applicable (Quebec data is not part of the DAD frame).

References

1. Canadian Institute for Health Information, DAD Abstracting Manual, may be ordered at <<https://secure.cihi.ca/estore/productSeries.htm?locale=en&pc=PCC78>>.
2. Canadian Institute for Health Information, Discharge Abstract Database Data Quality Re-Abstraction Study: Combined Findings for Fiscal Years 1999/2000 and 2000/2001, may be downloaded from <http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=GR_1107_E&cw_topic=1107>.
3. Canadian Institute for Health Information, Discharge Abstract Database (DAD) CMG/Plx Data Quality Re-Abstraction Study, may be downloaded from <http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=GR_1107_E&cw_topic=1107>.
4. Canadian Institute for Health Information, Data Quality of the Discharge Abstract Database Following the First-Year Implementation of ICD-10-CA/ CCI, may be downloaded from <http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=GR_1107_E&cw_topic=1107>.
5. Canadian Institute for Health Information, Re-Abstraction Study of the Ontario Case-Costing Facilities for 2002–2003 and 2003–2004, may be downloaded from <http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=GR_1107_E&cw_topic=1107>.
6. Canadian Institute for Health Information, CIHI Data Quality Study of the 2005–2006 Discharge Abstract Database, may be downloaded from <http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=GR_1107_E&cw_topic=1107>.
7. Canadian Institute for Health Information, CIHI Data Quality Study of the 2006–2007 Discharge Abstract Database, may be downloaded from <http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=GR_1107_E&cw_topic=1107>.
8. Canadian Institute for Health Information, CIHI Data Quality Study of the 2007–2008 Discharge Abstract Database, may be downloaded from <http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=GR_1107_E&cw_topic=1107>.
9. Canadian Institute for Health Information, Canadian Coding Standards for ICD-10-CA and CCI, may be downloaded from <http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=RC_382_E&cw_topic=382>.
10. Canadian Institute for Health Information, DAD Abstracting Manual (Core Section), may be ordered at <http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=RC_57_E&cw_topic=57>.
11. Canadian Institute for Health Information, DAD Abstracting Manual (Provincial/Territorial Variations), may be ordered at <http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=RC_57_E&cw_topic=57>.

12. Canadian Institute for Health Information, Quality Assurance Processes Applied to the Discharge Abstract and Hospital Morbidity Databases, may be downloaded from <http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=quality_e>.
13. Canadian Institute for Health Information, CMG+ Directory, maybe ordered at <http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=casemix_e>.
14. Canadian Institute for Health Information, DAD Resource Intensity Weights and Expected Length of Stay, may be ordered at <http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=RC_68_E&cw_topic=68>.
15. Canadian Institute for Health Information, CIHI Data Quality Framework, may be downloaded from <http://www.cihi.ca/CIHI-ext-portal/internet/en/Search/search/search_main_en?q=data%20quality%20framework&client=all_results&start=0&num=10&filter=0>.
16. Canadian Institute for Health Information, Coding Variations in the Discharge Abstract Database Data, may be downloaded from <http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=GR_1002_E>.
17. Canadian Institute for Health Information, Coping With the Introduction of ICD-10-CA and CCI: Impact of New Classification Systems on the Assignment of Case Mix Groups/Day Procedure Groups, may be downloaded from <http://secure.cihi.ca/cihiweb/en/downloads/casemix_ICDimpact_e.pdf >.

Contacts

For more information, please send an email to the DAD program area at dad@cihi.ca.

Production of this report is made possible by financial contributions from Health Canada and provincial and territorial governments. The views expressed herein do not necessarily represent the views of Health Canada or any provincial or territorial government.

All rights reserved.

The contents of this publication may be reproduced unaltered, in whole or in part and by any means, solely for non-commercial purposes, provided that the Canadian Institute for Health Information is properly and fully acknowledged as the copyright owner. Any reproduction or use of this publication or its contents for any commercial purpose requires the prior written authorization of the Canadian Institute for Health Information. Reproduction or use that suggests endorsement by, or affiliation with, the Canadian Institute for Health Information is prohibited.

For permission or information, please contact CIHI:

Canadian Institute for Health Information
495 Richmond Road, Suite 600
Ottawa, Ontario K2A 4H6

Phone: 613-241-7860

Fax: 613-241-8120

www.cihi.ca

copyright@cihi.ca

© 2011 Canadian Institute for Health Information

Cette publication est aussi disponible en français sous le titre *Document sur la qualité des données, à l'intention des utilisateurs externes, Base de données sur les congés des patients, 2010-2011*.

Talk to Us

CIHI Ottawa

495 Richmond Road, Suite 600
Ottawa, Ontario K2A 4H6
Phone: 613-241-7860

CIHI Toronto

4110 Yonge Street, Suite 300
Toronto, Ontario M2P 2B7
Phone: 416-481-2002

CIHI Victoria

880 Douglas Street, Suite 600
Victoria, British Columbia V8W 2B7
Phone: 250-220-4100

CIHI Montréal

1010 Sherbrooke Street West, Suite 300
Montréal, Quebec H3A 2R7
Phone: 514-842-2226

CIHI St. John's

140 Water Street, Suite 701
St. John's, Newfoundland and Labrador A1C 6H6
Phone: 709-576-7006

