



National Trauma Registry Comprehensive Data Set—Data Quality Summary for External Users



Our Vision

Better data. Better decisions.
Healthier Canadians.

Our Mandate

To lead the development and maintenance of comprehensive and integrated health information that enables sound policy and effective health system management that improve health and health care.

Our Values

Respect, Integrity, Collaboration,
Excellence, Innovation

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1 Introduction

Purpose and Scope

At the Canadian Institute for Health Information (CIHI), maintaining and enhancing the quality of incoming data is essential to our mandate to produce high-quality health information. CIHI's Data and Information Quality Program ensures the continued regular improvement of the quality of CIHI's databases and registries to meet changing and expanding user requirements and expectations. CIHI's Data Quality Framework provides a common way of assessing data quality across CIHI's databases and registries; within the framework, the data quality assessment tool helps users identify priority issues for quality by assessing databases and registries along the five broad dimensions of accuracy, comparability, timeliness, usability and relevance. The framework's implementation is part of the larger quality cycle in which problems are identified, addressed, documented and reviewed on a regular basis. Using the framework also standardizes information on data quality and helps to identify priority issues, which in turn leads to continuous improvements. The assessment tool highlights strengths (processes that work well) and identifies areas where existing practices can be improved.

The primary intent of this document is to provide users with sufficient information to assess whether the quality of the information presented by the National Trauma Registry Comprehensive Data Set (NTR CDS) fits their intended use. This document contains information on coverage, data limitations, comparability, major changes and revisions and their impact.

Overview of the NTR CDS

The goals of the NTR are to

- Contribute to the reduction of injuries and related deaths in Canada by providing data that will allow for the examination of national injury epidemiology;
- Facilitate provincial and international injury comparisons;
- Increase awareness of injury as a public health problem in Canada;
- Assist injury prevention programs; and
- Facilitate injury research.

The availability of this information will allow health care providers, planners and researchers to make informed decisions about the care and treatment of trauma patients, resource allocation, injury prevention programs and legislative changes.

The NTR Advisory Committee includes provincial representatives who are trauma care experts from across the country and has played a key role in the development and enhancement of the NTR. The role of this group has included advising on the goals and objectives of the NTR, uses of the data, definitions, inclusion/exclusion criteria, data quality issues, report formats and development of promotional strategies.

The establishment of the NTR, including the acquisition, analysis and dissemination of national injury data, is consistent with the mission, vision and corporate goals of CIHI. CIHI had worked toward the establishment of the NTR since the creation of the Ontario Trauma Registry (OTR) in May 1992 at the Hospital Medical Records Institute, one of CIHI's founding organizations. The NTR was established in 1994.

The NTR CDS consists of information on patients hospitalized with major trauma in participating hospitals in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia and Newfoundland and Labrador. Many participating provinces use specialized trauma software to collect data on injury cases. NTR CDS data is a subset of participating provincial trauma registries and is electronically submitted to CIHI.

Data elements collected in the NTR CDS are listed in Section 6. Because other provincial registries may collect data differently than the NTR CDS does, data elements were mapped to a common definition when necessary. In some cases, complete data is not provided because it was not collected in a particular province or facility.

The number of data elements in the NTR CDS was expanded in 1999–2000, as approved by members of the NTR CDS Working Group and as part of CIHI's Roadmap initiative. Elements added include Sports/Recreational Activity Code, Work-Related Code, Protective Devices, Total RTS (Revised Trauma Score) on Arrival at Trauma Centre and AIS (Abbreviated Injury Scale) Code by ISS (Injury Severity Score) Body Region, as well as various data elements for vital statistics upon arrival at the trauma hospital. For definitions of each data element, please refer to Section 6 of this document or to the [NTR CDS Data Dictionary](#).

The NTR closed on March 31, 2014. The final fiscal year of data included is 2012–2013. No new data will be collected in the future; however, historical data remains available.

2 Coverage

Although most provinces in Canada have provincial trauma registries, reporting data to the NTR CDS is not mandatory. In 2012–2013, the following provinces submitted data to the NTR CDS: B.C., Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia and Newfoundland and Labrador. As cases in the territories and Prince Edward Island are transferred to other provinces, the territories and P.E.I. do not meet the inclusion criteria for participation in the NTR CDS. Typically, cases in the territories are transferred to B.C. and Alberta, and cases in P.E.I. are treated in Nova Scotia or New Brunswick.

Over-Coverage

Apparent over-coverage at the unit (case) level of observation may occur in the NTR CDS when patients are transferred between designated trauma centres. Because each trauma centre counts its own admitted patients, transfers between centres could cause patients to be counted more than once if they meet the inclusion criteria in both facilities. It is important to keep in mind that the NTR CDS is case based, not patient based, so duplication of valid health card numbers is often due to a single person having been injured more than once and treated at a trauma centre more than once.

Over-coverage at the facility level is not possible, as there is no facility duplication. Data quality checks are done to confirm this.

Under-Coverage

In some provinces, it is likely that not all severely injured trauma patients are treated at a designated trauma facility. As well, there are significant variations in trauma system configuration across provinces. Certain provinces include only lead trauma centres capable of providing tertiary care in their trauma system. Other provincial trauma systems include all levels of trauma facilities that provide initial care to patients; although these centres may transfer more severely injured patients to a more specialized centre, they contribute data to the provincial trauma registry. Given these variations in provincial trauma system configuration, data included in the NTR CDS may differ in scope across provinces. Specifically, the proportion of severely injured patients captured by the NTR CDS may differ by province, given the differences in the structures of various provincial trauma systems and trauma registries.

Under-coverage could also include trauma hospitals that are known to exist but have never participated. Those that have participated in the past, but not in the year for the assessment report, can also be considered under-coverage if they are still in operation.

Table 1: Participating Provinces, NTR CDS

Year	Participating Provinces
1996–1997	B.C., Alta., Ont., Que., N.S., N.L.
1997–1998	B.C., Alta., Ont., Que., N.S., N.L.
1998–1999	B.C., Alta., Ont., N.S., N.L.
1999–2000	B.C., Alta., Man., Ont., N.S.
2000–2001	B.C., Alta., Man., Ont., Que., N.B., N.S.
2001–2002	B.C., Alta., Man., Ont., Que., N.B., N.S.
2002–2003	B.C., Alta., Man., Ont., Que., N.B., N.S.
2003–2004	B.C., Alta., Man., Ont., Que., N.B., N.S., N.L.
2004–2005	B.C., Alta., Man., Ont., Que., N.B., N.S., N.L.
2005–2006	B.C., Alta., Man., Ont., Que., N.B., N.S., N.L.
2006–2007	B.C., Alta., Man., Ont., Que., N.B., N.S., N.L.
2007–2008	B.C., Alta., Man., Ont., Que., N.B., N.S., N.L.
2008–2009	B.C., Alta., Man., Ont., Que., N.B., N.S., N.L.
2009–2010	B.C., Alta., Sask., Man., Ont., Que., N.B., N.S., N.L.
2010–2011	B.C., Alta., Sask., Man., Ont., Que., N.B., N.S., N.L.
2011–2012	B.C., Alta., Sask., Man., Ont., Que., N.B., N.S., N.L.
2012–2013	B.C., Alta., Sask., Man., Ont., Que., N.B., N.S., N.L.

Source

National Trauma Registry Comprehensive Data Set, 1996–1997 to 2012–2013, Canadian Institute for Health Information.

The number of participating provincial/regional trauma registries and facilities has varied slightly in the NTR CDS over time; therefore, trends should be interpreted with caution. In addition, certain provincial/regional trauma registries have added data retrospectively; this means that, while their data was not available for previous reports, data for previous years is now available to CIHI for this year’s report. Table 1 lists participating provincial/regional trauma registries by fiscal year of data.

Table 2: Number of Participating Facilities by Province and Territories, NTR CDS

Province/ Territories	Number of Participating Facilities						
	2006–2007	2007–2008	2008–2009	2009–2010	2010–2011	2011–2012	2012–2013
B.C.	9	10	12	9	10	11	11
Alta.	4	4	9	10	11	11	11
Sask.	0	0	0	2	2	4	2
Man.	1	1	1	1	1	1	1
Ont.	11	11	11	11	11	11	11
Que.*	57	56	58	58	59	61	61
N.B.	1	1	1	1	1	2	2
N.S.	10	10	10	10	10	10	10
P.E.I.	0	0	0	0	0	0	0
N.L.	3	3	3	3	3	3	3
Territories	0	0	0	0	0	0	0
Canada	96	96	105	105	108	114	112

Note

* Quebec Trauma Registry.

Source

National Trauma Registry Comprehensive Data Set, 2006–2007 to 2012–2013, Canadian Institute for Health Information.

3 Data Collection

NTR CDS data is submitted by lead trauma hospitals across Canada, either directly or through provincial trauma registries. It consists of information on patients hospitalized with major trauma in participating facilities. The definition of trauma in the NTR CDS is based on an ISS of 13 or higher and an appropriate external cause of injury code (as indicated in Section 7).

Data is submitted to CIHI in December following the end of the data year, and reports are produced once the data has been cleaned and is ready for analysis.

- CIHI has a standard record layout for NTR CDS data submission.
- Data files are extracted from the submitting jurisdictional/provincial registry database (through either Collector or other homegrown software applications) and submitted to CIHI as pipe-delimited ASCII files (based on CIHI’s standard record layout) via the electronic Data Submission Services (eDSS).
- Once all the data has been received (every December), the data is loaded directly into CIHI’s in-house NTR CDS Oracle database. As part of this load process, CIHI has some validation checks in place that flag or reject erroneous data.
- After the load and validation process, error reports are produced (in Excel format); CIHI communicates these to the submitting jurisdictional/provincial registries.
- The data submitters either resubmit corrections or advise CIHI of the data corrections.
- Once the data received has been corrected and verified, CIHI proceeds with preparing publications.

4 Data Quality Control

Similar to other CIHI data holdings, the NTR is subject to an annual data quality assessment, based on CIHI's Data Quality Framework. The framework considers data quality from a user's perspective, whereby "quality" is defined as "fitness for use." Data quality is assessed based on 19 characteristics rolled up into five dimensions: timeliness, usability, relevance, accuracy and comparability. The process of completing the framework includes numerous activities to assess the accuracy of the data. As well, preliminary counts and indicator values for each province are shared with each provincial/territorial ministry of health for their review and confirmation before data is released to the public.

CIHI also prepares and maintains data dictionaries and makes them available to data providers. The adoption of these dictionaries ensures that NTR data is standardized (for example, in terms of definitions, descriptive properties or characteristics, mandatory or optional collection status, alpha/numeric/alphanumeric field status and field length).

CIHI also conducts validity checks on submitted data. Submissions to CIHI for storage in the production system are expected to conform to CIHI's submission and editing specifications. Data specifications and other associated documentation, such as file layouts, are supplied to the key stakeholders in electronic format. After passing data quality checks, the data is incorporated into CIHI's production environment.

5 Item Non-Response

Item non-response is defined as the magnitude with which received data has blank data elements. This depends partly on whether submission of the data element to CIHI is mandated by a particular province. Table 3 below presents whether or not a particular data element is submitted to the NTR CDS by a province. While this may change from year to year, the table provides the status for fiscal year 2012–2013. Province-specific notes that provide additional detail follow.

Table 3: Submission of Data Elements to NTR CDS, by Province, 2012–2013

Data Element Name	B.C.	Alta.	Sask.	Man.	Ont.	Que.	N.B.	N.S.	N.L.
Institution Number	✓	✓	✓	✓	✓	x*	✓	✓	✓
Unique Personal Identifier (Health Care Number) [†]	✓	✓	✓	x	✓	x	✓	✓	x
Age	✓	✓	✓	✓	✓	✓ [‡]	✓	✓	✓
Sex	✓	✓	✓	✓	✓	✓	✓	✓	✓
Date of Injury	✓	✓	✓	✓	✓	✓	✓	✓	✓
Place of Incident	✓	✓	✓	✓	✓	x	✓	✓	✓
Date of Admission	✓	✓	✓	✓	✓	✓	✓	✓	✓
Direct Admission	✓	✓	✓	✓	✓	✓	✓	✓	✓
Length of Stay (LOS)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Date of Discharge	✓	✓	✓	✓	✓	✓	✓	✓	✓
Separation Status	✓	✓	✓	✓	✓	✓	✓	✓	✓
Injury Type	✓	✓	✓	✓	✓	x	✓	✓	✓
Injury Etiology	✓	✓	✓	✓	✓	✓	✓	✓	✓
Injury Severity Score (ISS)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Number of Days Ventilated	✓	✓	✓	✓	✓	✓	✓	✓	✓
Blood Alcohol Concentration (BAC)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Patient's Postal Code	✓	✓	✓	✓	✓	x [§]	✓	✓	✓
Discharge Disposition	✓	✓	✓	✓	✓	✓	✓	✓	✓
Date of Arrival at Trauma Centre	✓	✓	✓	✓	✓	✓	✓	✓	✓
Time of Injury	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mode of Transport From Scene	✓	✓	✓	✓	✓	✓	✓	✓	✓
Transported by Land Ambulance	✓	✓	✓	✓	✓	✓	✓	✓	✓
Transported by Air Ambulance	✓	✓	✓	✓	✓	✓	✓	✓	✓
Regional Identifier of Incident Location (Geocode)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sports/Recreational Activity Code	✓	✓	✓	✓	✓	✓ ^{**}	✓	✓	✓
Work-Related Code	✓	✓	✓	✓	✓	✓	✓	✓	✓
Protective Devices	✓	✓	✓	✓	✓	✓ ^{††}	✓	✓	✓

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Table 3: Submission of Data Elements to NTR CDS, by Province, 2012–2013 (cont'd)

Data Element Name	B.C.	Alta.	Sask.	Man.	Ont.	Que.	N.B.	N.S.	N.L.
Systolic Blood Pressure on Arrival at Trauma Centre	✓	✓	✓	✓	✓	✓	✓	✓	✓
Intubation Code on Arrival at Trauma Centre	✓	✓	✓	✓	✓	✓	✓	✓	✓
Unassisted Respiratory Rate on Arrival at Trauma Centre	✓	✓	✓	✓	✓	✓	✓	✓	✓
Paralytic Agents in Effect on Arrival at Trauma Centre	✓	✓	✓	✓	✓	x	✓	✓	✓
GCS—Eye Opening on Arrival at Trauma Centre	✓	✓	✓	✓	✓	✓	✓	✓	✓
GCS—Verbal Response on Arrival at Trauma Centre	✓	✓	✓	✓	✓	✓	✓	✓	✓
GCS—Motor Response on Arrival at Trauma Centre	✓	✓	✓	✓	✓	✓	✓	✓	✓
Total GCS on Arrival at Trauma Centre	✓	✓	✓	✓	✓	✓	✓	✓	✓
Total RTS on Arrival at Trauma Centre	✓	✓	✓	✓	✓	✓	✓	✓	✓
Predot Injury Codes	✓	✓	✓	✓	✓	✓	✓##	✓	✓
Severity Codes	✓	✓	✓	✓	✓	✓	✓##	✓	✓
AIS Code by ISS Body Region	✓	✓	✓	✓	✓	x	✓	✓	✓
Operative Procedures	✓	✓	✓	✓	✓	✓	✓	✓	✓
Nature of Injury Codes	✓	✓	✓	✓	✓	✓	✓	✓	✓
Complications	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes

- * **Institution Number:** Quebec submits encrypted Institution Numbers only.
- † **Unique Personal Identifier (Health Care Number):** Health Care Number is not submitted to the NTR CDS by three provinces: Manitoba, Quebec and Newfoundland and Labrador.
- ‡ **Age:** For patients who are 85 and older, Quebec submits their age as the value of the median of all ages 85 and above.
- § **Patient's Postal Code:** Quebec submits only the first three digits of the postal code.
- ** **Sports/Recreational Activity Code:** Quebec populates an alternate data field with this code, rather than populating this field per NTR CDS specifications. Therefore, attention must be paid to this when this data element is utilized.
- †† **Protective Devices:** The Quebec Trauma Registry groups some protective devices together, and these cannot always be separated for inclusion per NTR CDS specifications. Therefore, attention must be paid to this when this data element is utilized.
- ‡‡ **Severity and Predot Injury codes:** CIHI zero-fills these fields for New Brunswick because this province submits using AIS 2005 but the NTR CDS was not updated and contains AIS 1990.

Source

National Trauma Registry Comprehensive Data Set, 2012–2013, Canadian Institute for Health Information.

6 NTR CDS Data Elements

Below is an overview of the data elements present in the NTR CDS.

The *NTR CDS Data Dictionary* was revised for 2012–2013. However, due to the closure of the NTR CDS at CIHI, only a few of the planned changes were implemented. The affected data elements are Postal Code, Injury Type, Protective Devices, Mode of Transport to Trauma Centre, Complications, Separation Status, Discharge Disposition and Blood Alcohol Concentration. Detailed information on each data element, including changes, is available in the *NTR CDS Data Dictionary*.

Data Element Name	Definition
Institution Number	Unique institution identifier
Trauma Number	Unique identifier within the institution
Fiscal Year	Fiscal year of data submitted
Province	Submitting province identification
Unique Personal Identifier (Health Care Number)	A unique identifier to identify the record and for potential record linkage studies
Age	The patient's age in years at the time of admission
Sex	The patient's sex
Date of Injury	The date the patient was injured
Place of Incident	The ICD-9-CM or ICD-10-CA code for place of injury category that describes the place of injury for the patient's most serious injuries
Date of Admission	Date the patient is admitted to the trauma centre
Direct Admission	Indicates whether the patient was admitted directly to the trauma centre from the scene (that is, not seen at another hospital)
Length of Stay (LOS)	Total number of hospital days from date of admission to date of discharge or death
Date of Discharge	The date the patient was discharged from hospital or the emergency department or the date the patient died in hospital
Separation Status	The status of the patient at discharge from the trauma centre
Injury Type	An indication of the patient's most serious injury
Injury Etiology	The ICD-9-CM or ICD-10-CA external cause of injury code that reflects the cause of the patient's most serious injuries
Injury Severity Score (ISS)	The patient's ISS as calculated at discharge
Number of Days Ventilated	The number of days the patient was intubated and mechanically ventilated intermittently or continuously, excluding non-intubated patients on BIPAP and intubated patients on CPAP at the hospital
Blood Alcohol Concentration (BAC)	The patient's BAC (mmol/L) at the trauma centre
Patient's Postal Code	The postal code of the patient's usual residence
Discharge Disposition	The location to which the patient was discharged, or the service arranged for the patient immediately upon discharge from hospital
Date of Arrival at Trauma Centre	Date the patient arrived at the trauma centre
Time of Injury	The time the patient was injured using the 24-hour clock

(cont'd on next page)

Data Element Name	Definition
Mode of Transport From Scene	Indicates the type of vehicle used to first transport the patient directly from the scene
Transported by Land Ambulance	Indicates whether any portion of the patient's transfer to the trauma centre was by land ambulance
Transported by Air Ambulance	Indicates whether any portion of the patient's transfer to the trauma centre was by air ambulance
Regional Identifier of Incident Location (Geocode)	A unique code used to describe the geographic location of where the patient was injured; may be a province-specific coding system or a geographic reference (Statistics Canada's Census Division's Geocode)
Sports/Recreational Activity Code	If the person was injured while participating in or observing any sports or recreational activity, regardless of whether the person was being paid to participate; the appropriate activity is selected from a list
Work-Related Code	Code indicating the occurrence of an injury while the person was being paid for services (excludes travel to and from work)
Protective Devices (up to Four Can Be Listed)	Any protective device in use or not in use by the injured patient at the time of the incident
Systolic Blood Pressure on Arrival at Trauma Centre	Patient's first recorded systolic blood pressure at the trauma centre
Intubation Code on Arrival at Trauma Centre	Code indicating whether the patient was intubated at the time the Glasgow Coma Scale score was calculated at the trauma centre
Unassisted Respiratory Rate on Arrival at Trauma Centre	Patient's first unassisted respiratory rate per minute
Paralytic Agents in Effect on Arrival at Trauma Centre	Paralytic agents in effect when the Glasgow Coma Scale score was calculated at the trauma centre
GCS—Eye Opening on Arrival at Trauma Centre	Patient's best eye-opening response for the Glasgow Coma Scale score at the trauma centre
GCS—Verbal Response on Arrival at Trauma Centre	Patient's best verbal response for the Glasgow Coma Scale score at the trauma centre
GCS—Motor Response on Arrival at Trauma Centre	Patient's best motor response for the Glasgow Coma Scale score at the trauma centre
Total GCS on Arrival at Trauma Centre	Glasgow Coma Scale score—Calculated field based on eye opening, verbal and motor responses at the trauma centre
Total RTS on Arrival at Trauma Centre	Revised Trauma Score at the time of admission to the submitting hospital; calculated field based on Glasgow Coma Scale score, systolic blood pressure and respiratory rate
Predot Injury Codes (up to 27)	Abbreviated Injury Scale (AIS-90) predot codes that reflect the patient's injuries
Severity Codes (up to 27)	AIS severity and body region codes that reflect the patient's injuries
AIS Code by ISS Body Region (6 Regions)	Calculated field based on the highest AIS recorded for the six body regions
Operative Procedures (up to 10)	ICD-9-CM or ICD-10-CA/CCI operative procedures performed on the patient; procedures must be related to the injury
Nature of Injury Codes (up to 27)	ICD-9-CM or ICD-10-CA diagnosis codes that reflect the patient's injuries
Complications (up to 10)	ICD-9-CM or ICD-10-CA diagnosis codes describing a condition arising after the beginning of the hospital observation or treatment that usually has a significant influence on the patient's hospitalization or significantly influences the management of treatment of the patient

7 Inclusions and Exclusions

Trauma Definition: External Cause of Injury Code—Inclusions

ICD-10-CA Code	Definition
V01–V99	Transport incidents
V01–V06, V09–V90	Land transport incidents
V91–V94	Water transport incidents
V95–V97	Air and space transport incidents
V98, V99	Other and unspecified transport incidents
W00–W19	Unintentional falls
W20–W44, W45.09, W46, W49	Exposure to inanimate mechanical forces
W50–W60, W64	Exposure to animate mechanical forces
W65–W70, W73, W74	Unintentional drowning and submersion
W75–W77, W81, W83, W84	Other unintentional threats to breathing except due to inhalation of gastric contents, food or other objects
W85–W94, W99	Exposure to electric current, radiation and extreme ambient air temperature and pressure
X00–X06, X08, X09	Exposure to smoke, fire and flames
X10–X19	Contact with heat and hot substances
X30–X39	Exposure to forces of nature
X50	Overexertion and strenuous or repetitive movements
X52	Prolonged stay in weightless environment
X58, X59	Unintentional exposure to other and unspecified factors
X70–X84	Intentional self-harm, excluding poisoning
X86, X91–X99, Y00–Y05, Y07–Y09	Assault, excluding poisoning
Y20–Y34	Event of undetermined intent, excluding poisoning
Y35, Y36	Legal intervention and operations of war

Historical Changes Due to Updates to ICD-10-CA

- W46 (Contact with hypodermic needle): This was added in the 2009 version of ICD-10-CA.
- W45.00 (previously Foreign body or object entering through skin): This was split into two codes in the 2012 version of ICD-10-CA:
 - W45.00 (Voluntary body piercing): **Excluded** from trauma definition
 - W45.09 (Foreign body or object entering through skin): **Included** in trauma definition

Trauma Definition: External Cause of Injury Code—Exclusions

ICD-10-CA	Definition
W45.00	Voluntary body piercing
W78–W80	W78 Inhalation of gastric contents; W79 Inhalation and ingestion of food causing obstruction of respiratory tract; W80 Inhalation and ingestion of other objects causing obstruction of respiratory tract
X20–X29	Contact with venomous animals and plants
X40–X49	Unintentional poisoning and exposure to noxious substances
X51	Travel and motion
X53, X54, X57, Y06	X53 Lack of food; X54 Lack of water; X57 Unspecified privation; Y06 Neglect and abandonment
X60–X69	Intentional self-harm by poisoning
X85, X87–X90	Assault by poisoning
Y10–Y19	Poisoning of undetermined intent
Y40–Y59	Drugs, medicaments and biological substances causing adverse effects in therapeutic use
Y60–Y69	Misadventures to patients during surgical and medical care
Y70–Y82	Medical devices associated with adverse incidents in diagnostic and therapeutic use
Y83, Y84	Surgical and other medical procedures as the cause of abnormal reaction of the patient or of later complication, without mention of misadventure at the time of the procedures
Y85–Y89	Sequelae of external causes of morbidity and mortality
Y90–Y98	Supplementary factors related to causes of morbidity and mortality classified elsewhere

Historical Changes Due to Updates to ICD-10-CA

- W45.00 (previously Foreign body or object entering through skin): This was split into two codes in the 2012 version of ICD-10-CA:
 - W45.00 (Voluntary body piercing): **Excluded** from trauma definition
 - W45.09 (Foreign body or object entering through skin): **Included** in trauma definition

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