



Original Research

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## Detection of serious adverse drug reactions using diagnostic codes in the International Statistical Classification of Diseases and Related Health Problems

Ariane Gosselin<sup>1</sup>, Claire Chabut<sup>1</sup>, Amélie Duhamel<sup>1</sup>, Isabelle Desjardins<sup>2</sup>, Denis Lebel<sup>1</sup>, and Jean-François Bussi eres<sup>1,3</sup>

<sup>1</sup>Pharmacy Department and Research Unit in Pharmaceutical Practice, Centre hospitalier universitaire Sainte-Justine, Montreal, Quebec, Canada

<sup>2</sup>Archives Department, Centre hospitalier universitaire Sainte-Justine, Montreal, Quebec, Canada

<sup>3</sup>Pharmacy Faculty, Universit e de Montr al, Montreal, Quebec, Canada

Corresponding author: E-mail: [ariane.gosselin.hsj@ssss.gouv.qc.ca](mailto:ariane.gosselin.hsj@ssss.gouv.qc.ca)

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### ABSTRACT

Canadian hospitals are legally required to report serious adverse drug reactions (ADRs). This study aimed to assess the ability to detect serious ADRs from diagnostic codes and the potential benefit of adding stand-alone diagnostic codes to the regular process for detecting serious ADRs. In this descriptive study, clinical pharmacists and a reference work on drug-induced diseases allowed to identify diagnostic codes in the International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada (ICD-10-CA), reflecting clinical manifestations related to an ADR. Records for admissions to a large urban mother–child hospital in the fiscal year 2018–2019, as coded by medical archivists, were analysed. Of 69 ICD-10-CA diagnostic codes reflecting an ADR identified, 38 were included in the detailed analysis of patient records and 18 (which appeared in 130 admissions) deemed to indicate a serious ADR. Among the 130 admissions analysed, 70 serious ADRs were identified, of which 52 were previously detected by the regular process and 18 were not, increasing the detection of serious ADRs by 34.6% (18/52). These 18 serious ADRs were newly identified from 11 of the 18 codes

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reflecting clinical manifestation of a serious ADR. Adding ICD-10-CA diagnostic codes not associated with external cause codes can increase the capacity to detect serious ADRs in hospitals. Over a 12-month period, the use of 11 such diagnostic codes increased the detection capacity for serious ADRs by 34.6%.

**Keywords:** *diagnostic codes, International Statistical Classification of Diseases and Related Health Problems, hospital, pharmacovigilance, serious adverse drug reactions*

## INTRODUCTION

Adverse drug reactions (ADRs), noxious and unintended responses to any dose of a drug, are a public health concern.<sup>1</sup> Reporting of these reactions to regulatory authorities is necessary for patient safety.

In Canada, legislative changes were made to the Food and Drugs Act on 16 December 2019. Under these changes, reporting of serious ADRs is now mandatory for all hospitals.<sup>1</sup> These legislative changes are prompting hospitals to review their strategies for detecting serious ADRs.

In a hospital, clinicians caring for admitted or ambulatory patients are responsible for documenting clinical progress and care provided in the patient's chart. These records should include all clinical manifestations, whether or not they are associated with an ADR.

In Quebec, each episode of hospital care (referred to hereafter as an admission) is coded by a medical archivist, who reviews all documents in the patient's chart,<sup>2</sup> including the hospital summary sheet completed by the physician (form AH-109).<sup>3</sup> The medical archivist then applies diagnostic codes from the International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada (ICD-10-CA).<sup>4-6</sup> The record for each admission includes a single code as the primary diagnosis and one or more codes for the secondary diagnoses.<sup>7,8</sup> To code an ADR recorded as such in the patient's chart, the archivist uses both a diagnostic code identifying the clinical manifestation and an external cause code (Y40-Y59 in ICD-10-CA) identifying the suspect drug.<sup>7</sup> However, for some admissions,

there is no explicit mention in the patient's chart allowing a clinical manifestation to be associated with the use of a particular drug.

At the Centre hospitalier universitaire Sainte-Justine (CHUSJ), a 500-bed mother-child university hospital in Montreal, Quebec, clinical teams (consisting of doctors, pharmacists and nurses) are responsible for recording relevant information about ADRs in the patient's chart during the hospital stay. The coding of ADRs is based not only on the mention of a clinical manifestation and a suspected drug but also on evidence of a link between the two. Records for admissions with codes applicable to ADRs (i.e., diagnostic codes associated with external cause codes) are extracted twice each month, and these data are shared with and reviewed by the pharmacy department's pharmacovigilance team. The pharmacovigilance coordinator analyses each admission to validate the plausibility of the link between the clinical manifestation and the suspected drug, determines the severity of the ADR and, if necessary, reports the serious ADR to Health Canada. For the purposes of this study, this mechanism is referred to as the hospital's regular process for detecting ADRs. Although the existing system allows detection of a certain number of ADRs, the actual number of ADRs and serious ADRs remains unknown. We hypothesised that some admission records contain notes about clinical manifestations associated with an ADR that have not been identified as such during the coding process.

The main objectives of this study were to assess the ability to detect serious ADRs from

diagnostic codes and the potential benefit of adding diagnostic codes not associated with external cause codes to the regular process.

## METHODS

This was a retrospective descriptive study.

### Setting

The study was performed at the CHUSJ and involved collaboration between the pharmacy department's pharmacovigilance team (AG, CC, AD, DL, JFB) and the medical records service (ID). The study was approved by the hospital's research ethics board. The data were based on admissions for the fiscal year 2018–2019 (1 April 2018 to 31 March 2019).

### Selection of Diagnostic Codes

Clinical manifestations likely to be linked to an ADR were identified by consulting the publication *Drug-Induced Diseases: Prevention, Detection and Management*<sup>9</sup> and holding a brainstorming session with 10 clinical pharmacists from the CHUSJ. The ICD-10-CA codes for these clinical manifestations were then identified. In addition, to determine all the codes associated with a specific clinical manifestation, the ICD-10-CA documentation was systematically searched for relevant signs, symptoms and diseases and their synonyms.<sup>10,11</sup>

### Extraction of Admissions

Using this list of codes, the medical archivist performed four sequential extractions of all admissions with one or more of the codes, as determined from the hospital summary sheet for the target period.

The admissions were extracted from Impromptu™ software (2004, Cognos Inc., Ottawa, Ontario, Canada) using MED-ÉCHO® software (Ministry of Health and Social Services, Quebec, Canada).

The first extraction used the ICD-10-CA codes for the initial targets of the research team

(i.e., Stevens–Johnson syndrome, toxic epidermal necrolysis and ovarian hyperstimulation syndrome). The second extraction was based on codes for the primary diagnosis containing the term ‘drug’. The third extraction was based on codes for the secondary diagnoses containing the term ‘drug’, as well as codes associated with clinical manifestations identified from the reference publication (*Drug-Induced Diseases*). The fourth and final extraction was based on codes associated with clinical manifestations identified during the brainstorming session. For some of these codes, an additional feature (e.g., patient's sex) was combined with the code to more specifically target ADRs.

Clinical data for each admission were extracted from the digitised patient chart on ChartMaxx® (Secaucus, New Jersey, United States), including data relating to the clinical manifestation (i.e., date, description), the drugs prescribed and administered and the main results of laboratory analyses related to the clinical manifestation. Additional drug-related data were extracted from the computerised clinical record on GESPHARx® (CGSI TI Inc., Quebec, Canada).

### Study Variables

For admissions, the following data were extracted: patient chart, admission number, sex, date of birth, dates of admission and discharge and ICD-10-CA codes associated with the admission.

From the clinical record for each patient, the following data were extracted: patient's chart number and history of drugs administered during the admission (i.e., generic name, strength, dose, dosage form, route of administration and prescription start and end dates).

### Data Analysis

An initial data analysis was performed to identify the ICD-10-CA diagnostic codes for ADRs for which all admissions were already found through the regular ADR detection process. The codes

associated with these ADRs were excluded from the subsequent detailed analysis because the regular process allows detection of these cases. Two additional codes [R50.9 (fever) and K12.3 (oral mucositis)] were excluded from the detailed analysis because of the higher number of admissions to be analysed by the pharmacovigilance team. Further analysis would be required to confirm their relevance for serious ADR detection.

Each admission with one of the remaining codes was then reviewed by a member of the pharmacy department's research team (AG, CC) to validate the presence of an ADR. When an ADR was confirmed, its severity was determined according to the following Health Canada criteria: death, life-threatening, incapacity, hospitalisation, prolonged hospitalisation, congenital malformation or medical intervention required to avoid one of the preceding six criteria.<sup>1</sup> If at least one of these criteria was met, the hospital's pharmacovigilance data were checked to determine whether the serious ADR had been previously declared to Health Canada; if not, a declaration was made to Health Canada after study completion.

To assess the ability of diagnostic codes to detect serious ADRs and the added value of diagnostic codes not associated with external cause codes, the following variables were calculated for each of the targeted ICD-10-CA codes: number of admissions extracted by the medical archivist and analysed by the pharmacy team, number of admissions with a serious ADR (i.e., the detection rate of serious ADRs resulting from this study) and number of admissions with a serious ADR that was absent from data transmitted by medical archivists as part of the regular process (i.e., added value in identifying serious ADRs resulting from this study).

Finally, for all admissions included in the analysis, the causal relation between the clinical manifestation and the drug was determined, when applicable, using the Naranjo algorithm.<sup>12</sup>

Only descriptive statistics were calculated.

## RESULTS

A total of 69 ICD-10-CA diagnostic codes reflecting an ADR were identified during the document review and consultation with the clinical pharmacists, of which 38 were included in the detailed analysis of patient records since the regular ADR detection process did not detect at least one admission. Of these 38 codes (which appeared in 212 admissions), 15 (29 admissions) were not associated with any ADR (serious or otherwise). Of the remaining 23 codes (183 admissions) indicating an ADR of some type, 5 codes (53 admissions) were not associated with a serious ADR. Ultimately, 18 codes (130 admissions) reflected clinical manifestation of a serious ADR. Figure 1 details the selection of diagnostic codes for the fiscal year 2018–2019.<sup>13</sup>

Among the 130 admissions containing one of the 18 ICD-10-CA codes deemed to indicate a serious ADR, a total of 70 serious ADRs were identified. Of these 70 serious ADRs, 52 were previously detected by the regular process. The other 18 serious ADRs were not detected by the regular process, which increased the detection of serious ADRs by 34.6% (18/52). These 18 serious ADRs were newly identified from 11 of the 18 codes reflecting clinical manifestation of a serious ADR (Table 1).

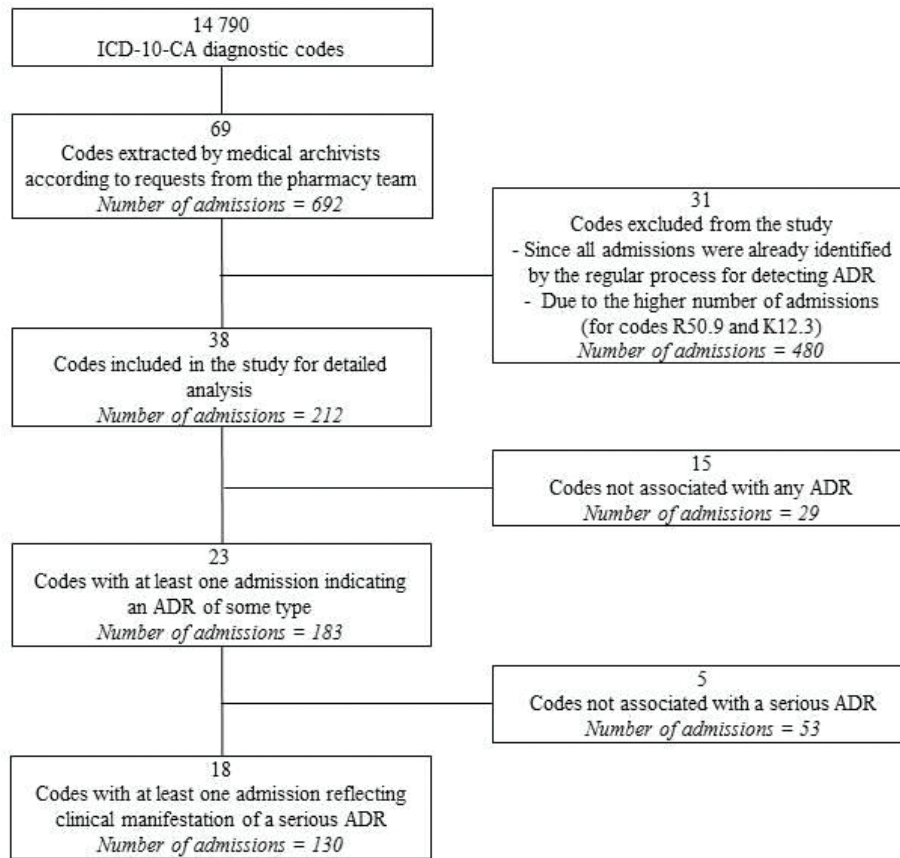
Of the 70 serious ADRs identified by this analysis, calculation of the Naranjo score showed that 7 (10%) were definite ADRs and 48 (68.6%) were probable ADRs (Table 2).

Appendix 1 summarises, in tabular format, the results of the four extractions of admission records, as described in the “Methods” section.

## DISCUSSION

### *Knowledge Acquired from This Study*

This study is part of a larger project by our pharmacovigilance team to detect ADRs and serious ADRs in admission records, as coded by medical archivists.<sup>14,15</sup> This work, which was



**FIG 1.** Flow Chart for the Selection of Diagnostic Codes for an Analysis of Serious Adverse Drug Reactions (ADRs) in the Fiscal Year 2018–2019.

begun in 2017, has allowed us to establish a regular process for detecting ADRs and serious ADRs using external cause codes applied by medical archivists to the summary sheet for each admission during analysis of patients’ charts. The current study demonstrates the value of adding stand-alone diagnostic codes to the regular detection process to increase the capacity to detect serious ADRs. Of the 69 ICD-10-CA diagnostic codes identified by document review and brainstorming, 11 codes contributed to the identification of 18 serious ADRs that were documented in patients’ charts but not identified by the regular ADR detection process, a 34.6% (18/52) gain compared to the regular process for the study period.

**Retrospective Approach**

There is a recognised value in using ICD-10 codes to identify ADRs. Hohl et al.<sup>16</sup> published a systematic review in 2014 on the use of ICD-10 codes to identify ADRs. Of the 41 studies involving adult patients that were included in the systematic review, 7 used external cause codes (Y40–Y59), 5 used diagnostic codes without an external cause code and 16 used a combination of these two types of codes. A total of 827 ICD-10 codes were identified as potentially contributing to identification of ADRs. At the CHUSJ, the regular process for the detection of serious ADRs is based on external cause codes. Our study added stand-alone diagnostic codes to diagnostic codes associated with external cause codes.



**TABLE 1.** Profile of Admissions with Documentation of ICD-10-CA Codes Indicating Serious ADRs for the Fiscal Year 2018–2019

Diagnostic Code with Abbreviated Description	No. (%) of Admissions		
	Extracted by Medical Archivist and Analysed by Pharmacy	With Serious ADR	With Serious ADR Not Detected by Regular Process
L51.1 Bullous erythema multiforme	11	4 (36)	3 (27)
L51.2 Toxic epidermal necrolysis (Lyell)	1	1 (100)	0 (0)
N98.1 Hyperstimulation of ovaries	3	3 (100)	1 (33)
T88.6 Anaphylactic shock due to a correct drug	7	7 (100)	0 (0)
D61.1 Drug-induced aplastic anaemia	31	29 (94)	4 (13)
G44.4 Drug-induced headache	7	4 (57)	2 (29)
H26.3 Drug-induced cataract	4	2 (50)	0 (0)
E24.2 Drug-induced Cushing's syndrome	6	1 (17)	0 (0)
I95.2 Hypotension due to drugs	9	6 (67)	2 (22)
P04.0 Foetus and newborn affected by maternal anaesthesia and analgesia	7	3 (43)	0 (0)
Q86.8 Congenital malformation syndromes due to known exogenous causes	3	1 (33)	1 (33)
X44 Accidental poisoning by drugs, medicaments and biological substances	6	1 (17)	1 (17)
G25.9 Extra-pyramidal and movement disorder	4	1 (25)	0 (0)
X40 Accidental poisoning by non-opioid analgesics, antipyretics and anti-rheumatics	1	1 (100)	1 (100)
X42 Accidental poisoning by narcotics and psychodysleptics hallucinogens	6	3 (50)	0 (0)
K85.9 Acute pancreatitis (in haematology–oncology)	4	1 (25)	1 (25)
E16.1 Other hypoglycaemia (with endocrinology consultation)	7	1 (14)	1 (14)
E16.2 Hypoglycaemia, unspecified (with endocrinology consultation)	13	1 (8)	1 (8)
<b>Total</b>	<b>130</b>	<b>70 (54)</b>	<b>18 (14)</b>

ADR, adverse drug reactions; ICD-10-CA, International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada.

Du et al.<sup>17</sup> conducted a study similar to ours in many respects. They analysed a total of 493,442 admissions (for 267,153 patients) from the Medicare Australia enrolment database over the period of 2011–2013 and assessed the impact of adding ICD-10-Australian Modification diagnostic codes

without associated external cause codes. The addition of 279 codes allowed them to identify an additional 1,043 admissions with at least one ADR (an increase of 10.4% over the 10,039 admissions with an ADR identified by external cause codes). The authors concluded that it would be beneficial to add

**TABLE 2.** Profile of Serious ADRs by Naranjo Score for the Fiscal Year 2018–2019

Naranjo Score	Likelihood of ADR Scoring	No. (%) of Serious ADRs Identified
0	Doubtful	0 (0)
1–4	Possible	15 (21.4)
5–8	Probable	48 (68.6)
9–13	Definite	7 (10.0)
<b>Total</b>		<b>70</b>

ADR, adverse drug reactions.

diagnostic codes not associated with external cause codes to increase the detection of ADRs.

Kuklik et al.<sup>18</sup> conducted a retrospective analysis of selected admissions to a German hospital in 2014 to assess the predictive value and sensitivity of 15 ICD-10-German Modification diagnostic codes for detecting ADRs. After the analysis of 807 randomly selected admissions, they noted that the presence of a targeted code was associated with an ADR in 65.1% (95% confidence interval, 61.7–68.3%) of the cases. The authors highlighted that the quality of coding rests on the quality of clinicians’ documentation of clinical manifestations in the patients’ records. In another study, Kuklik et al. used the same approach to detect medication errors.<sup>19</sup>

**Retrospective Versus Prospective Approach**

Other researchers have compared prospective and retrospective approaches to detect ADRs. Parameswaran Nair et al.<sup>20</sup> analysed 118 ADRs leading to admission in elderly patients, of which 82.2% were identified prospectively, 2.5% were identified retrospectively on the basis of coding with ICD-10-Australian Modification and 15.3% were identified by both approaches. Bellis et al.<sup>21</sup> retrospectively analysed, for a selection of paediatric charts, the coding of ADRs identified prospectively. Of the 241 ADRs identified, only 31.5% were coded with ICD-10 codes. The authors emphasised that prospective detection is essential for

the comprehensive identification of ADRs. In our study, 52 of the 70 serious ADRs identified were detected using external cause codes associated with diagnostic codes (i.e., regular process for detecting ADRs). The use of stand-alone diagnostic codes was necessary to increase our capacity to detect serious ADRs. At the CHUSJ, approximately 15% of ADRs are reported prospectively by clinicians,<sup>15</sup> whereas 85% are reported retrospectively within the framework of coding based on the summary sheet for the admission. It seems useful to combine these two notification approaches, when possible. In the Canadian context, the new obligation to report serious ADRs is entrusted to hospitals, and a retrospective process makes it possible to comply with this obligation.

**Inclusion of Codes to the Regular Process**

Adding diagnostic codes not associated with external cause codes to the regular process would require some effort. For each admission identified during the extraction by medical archivists, the pharmacovigilance coordinator must analyse the patient’s chart to determine the presence of an ADR and, if applicable, its severity for purposes of reporting to Health Canada. Although the time required for this analysis is variable, the pharmacovigilance team estimated 10 min per admission reviewed. In the current study, 480 admissions (from 31 diagnostic codes) had already been identified by the regular ADR detection process. Adding these diagnostic codes to the regular process would therefore have no impact on the number of admissions to be analysed. However, the addition of the other 38 codes to the regular process led to analysis of 104 additional admissions over the 1-year study period. In view of these data, it seems reasonable to include these 69 codes (as listed in Table 1 and Appendix 1) to the regular process.

### ***Integration of Artificial Intelligence***

Although our regular ADR detection process, enhanced with additional diagnostic codes, meets current regulatory requirements, consideration should be given to automating the detection of ADRs. McMaster et al.<sup>22</sup> have demonstrated the benefit of combining external cause codes with a machine-learning model to detect ADRs. Based on admissions coded with external cause codes for a 12-month period, a machine-learning algorithm trained on ICD-10 codes was developed using the area under the curve of the receiver operating characteristic to discriminate between true and false ADRs. More work is needed to validate the best approach for detecting ADRs.

### ***Naranjo Algorithm***

The 70 serious ADRs identified in our analysis had a range of ratings according to the Naranjo score (Table 2). Parameswaran Nair et al.<sup>20</sup> also used the Naranjo algorithm to assess the association between an adverse effect and a suspected drug. Of the 115 ADRs evaluated, 81% were deemed to be probable ADRs and 19% were deemed to be definite ADRs. Under current regulatory requirements, reporting of a serious ADR is not based on an identified causal link, but rather on the presence of a serious adverse effect and a suspected drug.

### ***Clinician Awareness***

The quality of coding is based on the completeness of recording of clinical observations by doctors, pharmacists, nurses and other health professionals during a patient's hospital stay. It will be important to share the results of this research with clinicians to raise awareness of the importance of recording any data that might indicate an ADR. A properly documented hospital summary sheet and complete progress notes from clinicians are likely to improve the quality of coding by medical archivists and the ability to

detect ADRs and serious ADRs for reporting to regulatory authorities.

### ***Limitations***

This study had some limitations. ADRs reflect the nature of the clientele treated and the drugs used in a particular setting, so the results reported here may be specific to the setting of this study (a mother-child university hospital centre). Similar work could be carried out in an adult hospital to confirm the potential gains in detecting serious ADRs by adding ICD-10-CA diagnostic codes. To our knowledge, few pharmacy departments or pharmacovigilance teams work closely with the medical records service. Although such collaboration is emerging in Quebec, thanks to the establishment of a community of practice in pharmacovigilance, the data collected for our study were based on the bi-monthly sharing of information between these two departments of the study hospital. Coding of the hospital summary sheet by medical archivists is a complex process with inter-individual variation; coding may also vary over time, taking into account the administrative coding rules proposed by local or national authorities.

## **CONCLUSION**

Adding ICD-10-CA diagnostic codes not associated with external cause codes to the regular process of identifying ADRs can increase the capacity to detect serious ADRs in hospitals. Over a 12-month period, 18 serious ADRs were newly identified from 11 diagnostic codes, increasing the detection capacity for serious ADRs by 34.6% in a mother-child university hospital centre.

## **CONFLICTS OF INTEREST**

The authors stated that they have no financial or non-financial conflicts of interest in connection with this article.



## FUNDING

None.

## DATA AVAILABILITY STATEMENT

The datasets generated and/or analysed during this study are available from the corresponding author on reasonable request.

## COMPLIANCE WITH ETHICAL STANDARDS

This study was approved by the institutional research ethics board.

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**APPENDIX 1**

**TABLE 1.** Profile of Admissions Analysed in Relation to ICD-10-CA Codes for the Fiscal Year 2018–2019 (First Extraction)

Clinical Manifestation	Diagnostic Code	Abbreviated Description of Code	No. of Admissions	No. of Admissions Analysed
Stevens–Johnson syndrome	L51.1	Bullous erythema multiforme	11	11
	L51.8	Other erythema multiforme	1	1
	L51.9	Erythema multiforme	1	1
Toxic epidermal necrolysis	L51.2	Toxic epidermal necrolysis (Lyell)	1	1
Ovarian hyperstimulation syndrome	N98.1	Hyperstimulation of ovaries	3	3
		Total	17	17

*ICD-10-CA, International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada.*

**TABLE 2.** Profile of Admissions Analysed in Relation to ICD-10-CA Codes for the Fiscal Year 2018–2019 (Second Extraction)

Diagnostic Code	Abbreviated Description of Code	No. of Admissions	No. of Admissions Analysed
D61.1	Drug-induced aplastic anaemia	31	31
E27.3	Drug-induced adrenocortical insufficiency	32	0
G24.0	Drug-induced dystonia	2	0
G44.4	Drug-induced headache	7	7
H26.3	Drug-induced cataract	4	4
K85.3	Drug-induced acute pancreatitis	10	0
L27.0	Generalised skin eruption due to drugs	30	0
L27.1	Localised skin eruption due to drugs	19	0
P04.1	Foetus and newborn affected by maternal medication	74	0
R50.2	Drug-induced fever	11	0
T88.6	Anaphylactic shock due to a correct drug	7	7
	Total	227	49

*ICD-10-CA, International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada.*

**TABLE 3.** Profile of Admissions Analysed in Relation to ICD-10-CA Codes for the Fiscal Year 2018–2019 (Third Extraction)

<b>Diagnostic Code</b>	<b>Abbreviated Description of Code</b>	<b>No. of Admissions</b>	<b>No. of Admissions Analysed</b>
E03.2	Hypothyroidism due to medicaments	2	0
E24.2	Drug-induced Cushing's syndrome	6	6
G21.0	Malignant neuroleptic syndrome	1	0
G21.1	Drug-induced secondary parkinsonism	1	0
G25.1	Drug-induced tremor	3	0
G62.0	Drug-induced polyneuropathy	2	0
H91.0	Ototoxic hearing loss	3	0
I95.2	Hypotension due to drugs	9	9
L23.3	Allergic contact dermatitis due to drugs	3	0
M81.4	Drug-induced osteoporosis	1	0
N14.1	Nephropathy induced by other drugs	1	0
N14.2	Nephropathy induced by unspecified drug	1	0
P04.0	Foetus and newborn affected by maternal anaesthesia and analgesia	7	7
P96.2	Withdrawal symptoms from therapeutic use of drugs in newborn	30	30
Q86.8	Congenital malformation syndromes due to known exogenous causes	3	3
T88.7	Unspecified adverse effect of drug or medicament	3	0
X44	Accidental poisoning by drugs, medicaments and biological substances	6	6
	Total	82	61

*ICD-10-CA, International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada.*

**TABLE 4.** Profile of Admissions Analysed per ICD-10-CA Codes for the Fiscal Year 2018–2019 (Fourth Extraction: Part 1)

Diagnostic Code	Abbreviated Description of Code	No. of Admissions	No. of Admissions Analysed
G25.8	Other specified extra-pyramidal and movement disorders	7	7
G25.9	Extrapyramidal and movement disorder	4	4
G60.3	Idiopathic progressive neuropathy	1	1
G60.8	Other hereditary and idiopathic neuropathies	1	1
I73.0	Raynaud's syndrome	4	4
M87.90	Osteonecrosis, multiple sites	1	1
M87.92	Osteonecrosis, upper arm	1	1
M87.95	Osteonecrosis, pelvic region and thigh	2	2
M87.97	Osteonecrosis, ankle and foot	1	1
M87.98	Osteonecrosis, other site	1	1
Q22.0	Pulmonary valve atresia	3	3
Q24.9	Congenital malformation of heart	5	5
T78.3	Angioneurotic oedema	9	9
T80.6	Other serum reactions	2	0
X40	Accidental poisoning by non-opioid analgesics, antipyretics and anti-rheumatics	1	1
X41	Accidental poisoning by anti-epileptic, sedative-hypnotic, anti-parkinsonism and psychotropic drugs	1	1
X42	Accidental poisoning by narcotics and psychodysleptics hallucinogens	6	6
	Total	50	48

*ICD-10-CA, International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada.*



**TABLE 5.** Profile of Admissions Analysed in Relation to ICD-10-CA Codes for the Fiscal Year 2018–2019 (Fourth Extraction: Part 2)

Feature	Diagnostic Code	Abbreviated Description of Code	No. of Admissions	No. of Admissions When Feature Added	No. of Admissions Analysed
Haematology–oncology patients	K85.0	Idiopathic acute pancreatitis	1	0	0
	K85.1	Biliary acute pancreatitis	5	0	0
	K85.8	Other acute pancreatitis	3	0	0
	K85.9	Acute pancreatitis	25	4	4
	K86.1	Chronic pancreatitis	3	0	0
	K12.3	Oral mucositis (ulcerative)	74	57	0
	K92.80	Mucositis (ulcerative) of the digestive system	1	1	0
Female patients	I80.0	Thrombophlebitis of superficial vessels of lower extremities	4	3	3
	I80.1	Thrombophlebitis of femoral vein	7	0	0
	I80.2	Thrombophlebitis of deep vessels of lower extremities	11	3	3
	I80.3	Thrombophlebitis of lower extremities	1	0	0
	I80.9	Thrombophlebitis of unspecified site	1	0	0
Combination with code D70.0 neutropenia	R50.2	Drug-induced fever	11	1	0
	R50.8	Other specified fever	20	3	0
	R50.9	Fever, unspecified	670	217	0
Patients with endocrinology consultation or service	E10.63	Type 1 diabetes mellitus with hypoglycaemia	9	6	6
	E13.63	Specified diabetes mellitus with hypoglycaemia	2	1	1
	E16.1	Other hypoglycaemia	21	7	7
	E16.2	Hypoglycaemia, unspecified	76	13	13
		Total	945	316	37

ICD-10-CA, *International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada.*