Injury Data Online Tool – Methods and Case Definitions



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Injury Mortality and Hospitalization iDOT Tools

Injury mortality and hospitalization information is recorded using the World Health Organization's International Classification of Diseases System, 10th revision (ICD-10). For hospitalizations, codes have been adapted and enhanced for relevance to the Canadian context, by the Canadian Institute for Health Information (ICD10 - CA). For more information of how injury data is collected please see how are provincial injury data collected.

Injury Mortality Case Definition

The methodology applied is based on work conducted to support the consistent case ascertainment and reporting of injury deaths in the province. The inclusion and exclusion criteria of case ascertainment is crucial when comparing cases with other data tables, outputs or reports.

1. A record is selected if external cause of injury is listed as underlying cause of death on the vital statistics mortality dataset, with the following exception: Complications and adverse effects due to medical and surgical care are included in ICD-10 chapter XIX – injury poisoning and certain other consequences of external causes - (diagnosis codes: T80-T88) and chapter XX – external causes of morbidity and mortality (codes: Y40-Y84). The aetiology for these types of injuries is different and require different prevention efforts. Given the purpose here is the surveillance of injuries for public health purposes, these codes were excluded from case ascertainment.
2. Sequelae of injuries (ICD-10 codes T90-T98) and sequelae of external cause (Y85-Y89) indicate late effects present one year or more after the acute injury and classified elsewhere. Unlike injury-related hospitalizations where sequelae are excluded from the case ascertainment definition, sequelae are included in injury-related deaths case finding definition.

Injury Hospitalization Case Definition

The following is the criteria which was used to identify the injury hospitalization cases. The case definition is based on the case ascertainment collectively developed by the BC Injury Surveillance Methodology Working Group.

1. Only acute cases are included. Day surgery and rehab cases are excluded.

2. A diagnosis of injury is not always provided in a discharge abstract when an external cause of injury is recorded. Moreover, an external cause of injury code is not always provided when a diagnosis of injury code is coded in the discharge abstract record. Both an external cause of injury ICD-10 code along with a diagnosis of injury code ICD-10 code (S & T codes) were present in the discharge record before the record was included in case ascertainment.

3. A diagnosis type is used to differentiate "significant" conditions that have an effect on the care provided, the patient's length of stay and resources used during a patient's hospital stay, from those that do not influence hospitalization. Secondary diagnosis (type 3) was excluded from case ascertainment. All significant diagnosis types - most responsible diagnosis (type M), proxy most responsible diagnosis (type 6), pre-admission comorbid conditions (type 1), post-admission comorbid conditions (type 2) and service transfer diagnoses (types W, X and Y) – were included in case ascertainment.

4. Complications due to medical and surgical care are considered an external cause of injury (ICD-10 codes: Y40-Y84). However, trauma registries and surveillance of injuries for public health purposes generally exclude these events. Complications due to medical and surgical care were excluded from case ascertainment.

5. Sequelae are used to indicate late effects of injuries, which are themselves classified elsewhere. The "sequelae" include those specified as such, or as late effects, and those present one year or more after the acute injury. Hospitalizations involving injury exclude sequelae. It does not represent current injury, and the information is not captured that well.

6. A record can contain multiple external cause of injury ICD10-CA codes. Each hospital discharge rather than each listed external cause of injury will be counted and reported. The first listed external cause of injury ICD-10-CA code will be selected to represent the external cause of the injury-related hospitalization. The first listed code is the most appropriate to describe the cause of injury.

7. Some patients may incur multiple transfers to hospitals based on the treatments required, other patients may also be transferred to various trauma centres based on their injuries. If examined without regard for the episode, a patient with a series of hospitalizations (an initial hospitalization, a nested hospitalization, a transfer hospitalization, and a readmission hospitalization) would be identified as having 4 hospitalizations when they had one hospitalization episode spanning multiple facilities. Transfers and/or episode of care will be taken into account when looking at injury hospitalizations. It will consider:

- Admission to an acute care institution occurs less than 7 hours after discharge from another acute care institution, regardless of whether either institution codes the transfer; or
- Admission to an acute care institution occurs between 7 and 12 hours after discharge from another acute care institution and at least one of the institutions codes the transfer.

For more information on the codes used to develop the injury categories, see injury classification ICD-10 codes.

Injury Emergency Department (Lower Mainland) iDOT Tool

Injury Emergency Department Visits Case Definition

The following are the criteria that was used to identify the injury ED visit cases captured in the injury ED visit iDOT tool.

1. Includes ED visits for injuries, identified by diagnosis codes S00–T89 in any of the three diagnosis columns.

2. Includes ED visits from hospitals in the Lower Mainland, including Fraser Health, Vancouver Coastal Health, and PHSA, covering both BC residents and non-BC residents. Hospitals in Interior Health, Northern Health, and Island Health are excluded due to low reporting compliance in NACRS.

3. The analysis does not account for episodes of care, meaning each ED visit is counted separately, regardless of whether multiple visits are from the same patient in the same day.

4. The injury diagnosis codes provide detailed information on:

    a. Affected body region (e.g., head, spine, extremities)

    b. Nature of the injury (e.g., fracture, laceration)

5. Each record can contain multiple affected body regions and injury natures. Each occurrence is recorded separately, so when requesting a breakdown by injury nature or body region, each is counted in the total ED visit count.

6. Excludes adverse effects (T78) and complications due to certain early complications of trauma or medical and surgical care (T79 – T88) are excluded in injury case ascertainment.

7. In the absence of external cause codes (V01–Y98) in NACRS, we use ICD-10-CA injury diagnosis codes (S00–T89) to infer the mechanisms of injury, labelled as "Type of Injury" on the iDOT tool. The codes provide the following information:

    a. Type of injury (e.g., poisoning, burns)

    b. Subtype of Injury (e.g., alcohol poisoning, narcotic poisoning)

8. A record can contain multiple injury mechanisms contributing to an ED visit. To determine the main injury mechanism for an ED visit, the first listed ICD-10-CA injury diagnosis code will be used.

iDOT NACRS (Lower Mainland) Including Hospitals

Hospital
02 Fraser Health
109 Royal Columbian Hospital
115 Langley Memorial Hospital
116 Surrey Memorial Hospital
130 Burnaby Hospital
131 Peace Arch District Hospital
134 Delta Hospital
136 Eagle Ridge Hospital and Health Care Centre
601 Chilliwack General Hospital
602 Mission Memorial Hospital
604 Ridge Meadows Hospital and Health Care Centre
606 Fraser Canyon Hospital
609 Abbotsford Regional Hospital and Cancer Centre
03 Vancouver Coastal Health
101 Vancouver General Hospital
102 St. Paul's Hospital
106 Mount Saint Joseph Hospital
112 Lions Gate Hospital
121 Richmond Hospital
123 UBC Health Sciences Centre

06 PHSA
105 B.C. Children's Hospital

For more information on the codes used to develop the type of injury categories, see injury classification ICD-10 codes.

CHIRPP BCCH ED iDOT Tool

What is CHIRPP?

Funded by the Public Health Agency of Canada, the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) was established in 1990 in order to supplement injury surveillance in Canada. The CHIRPP program is an emergency department based injury and poisoning surveillance system which currently operates in 11 hospitals (and one children's outpatient clinic within a general hospital) and 9 general hospitals in Canada. Since its inception, more than 3.2 million records have been collected nationally; more than 80% of these records concern children and youth 19 years of age and younger.

The CHIRPP is a unique, richly detailed database of "pre-event" injury information that ask the questions:

- What was the injured person doing when the injury happened?
- What went wrong?
- Where did the injury occur?

For a better understanding of how CHIRPP track injuries, see Appendix A for CHIRPP's life cycle infographic.

How does the CHIRPP work at BC Children's Hospital?

- When a child (between the ages of 0-17 years) presents to the emergency department (ED), the registration clerk asks the patient the reason for their visit. If the reason for their visit is related to an injury, a CHIRPP form is given to them (Appendix B).
- Patients/caregivers are instructed to complete the first page of the form and put it in the designated boxes at nursing stations once it is filled out.
    - Questions on the form concern the circumstances surrounding the injury. Few examples are: what the person was doing at the time, what actually caused the injury, the factors that contributed to the injury, the nature of injury, injured body part, the time and place where the injury occurred, safety equipment used, and treatment received.
- The CHIRPP team collects the forms from the ED.
- Using BCCH Cerner system (Hospital's information system), a report called "ED Activity Log" is generated for the specific day. This report lists all the ED visits for the day.
- The CHIRPP team will go through all the visits in the ED Activity Log, line by line, and highlight the injury related cases.
- Highlighted cases are matched with the available completed forms for that day.
- The forms are verified and completed by reviewing patient's health record via CST/CERNER. Additional detail is documented on the events preceding the injury as well as completing the missing information on the form.

- A CHIRPP form is created by the CHIRPP team for the highlighted cases that didn't have a form completed by the patient. Both sides of the form is completed by reviewing patient's health record via CST/CERNER .
- These comprehensive steps have enabled us to achieve a 100% capture rate of injury related ED visits at BC Children's hospital.
- After CHIRPP forms are completed, they are entered into the Canadian Network for Public Health Intelligence (CNPHI) by the CHIRPP team.
- The information on the forms are later coded on more than 40 variables by trained coders and organized into defined categories for the injury Data Online Tool (iDOT).

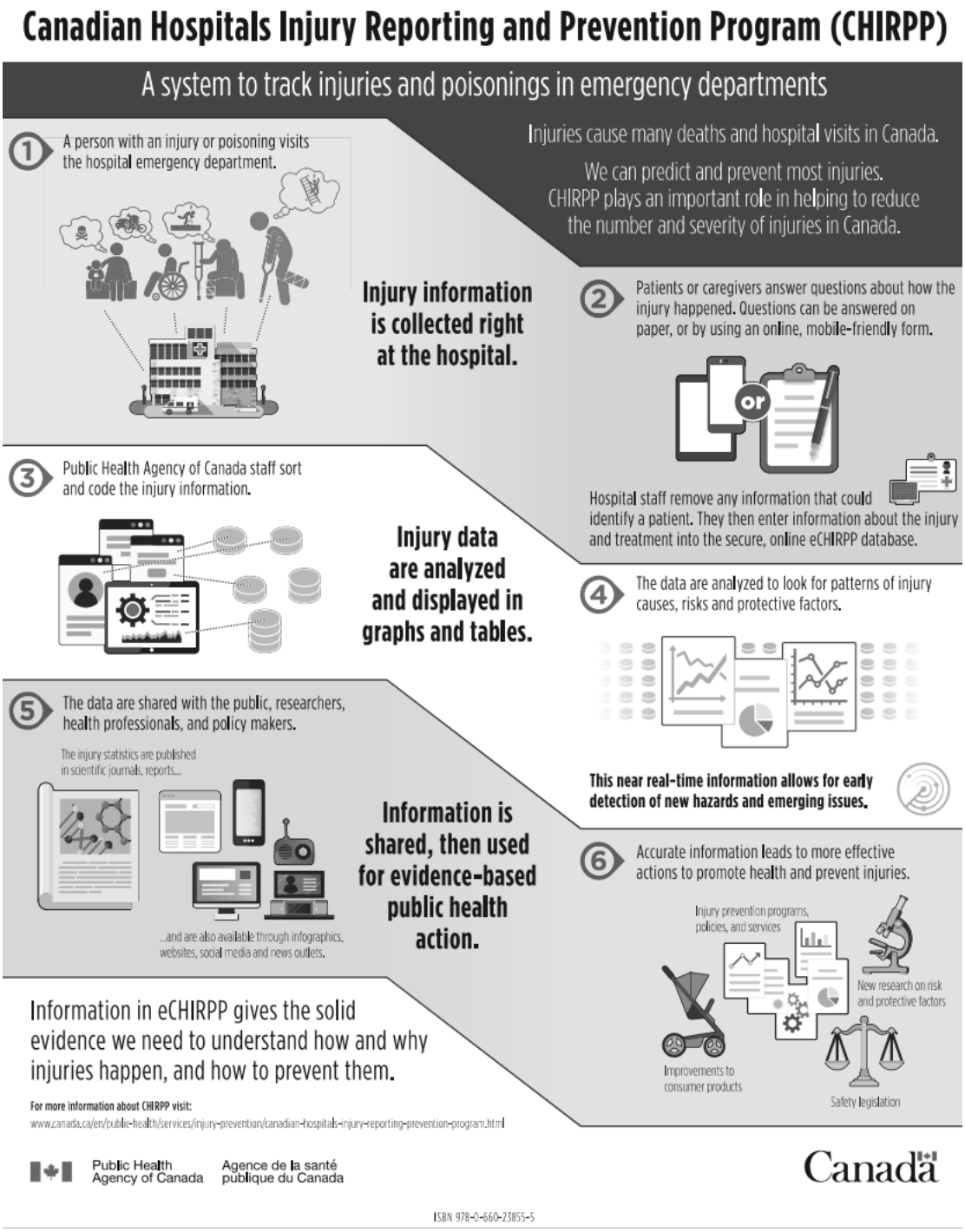
Sports-related Injury Hospitalization iDOT Tool

The data in the sports-related injury hospitalizations tool are a subset of the hospitalization dataset. Therefore, all cases that are in the sports-related injury hospitalization tool are included in the Injury Hospitalization Tool. Hospitalization data are based on separations (discharges) from each hospital.

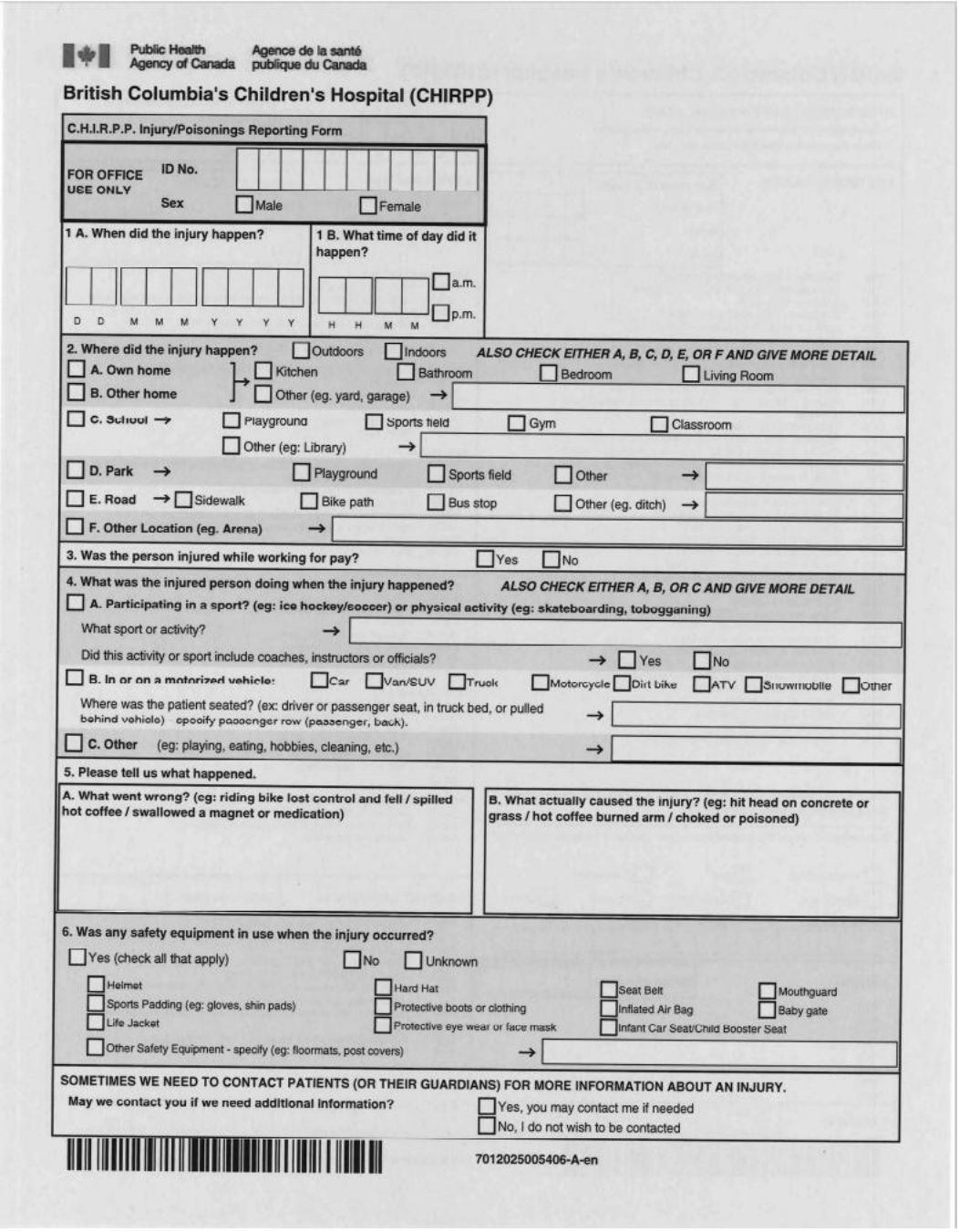
Cause or mechanism of injury hospitalization is captured using the external causes of injury ICD10-CA codes. This framework is obtained from CIHI (Canadian Institute for Health Information. Injury and trauma emergency department and hospitalization statistics. Accessed March 19, 2026). There are no specific sport codes within the external cause framework. The activity codes that provide more information pertaining to the type of sports are not mandatory to report and have gradually not been reported at all in the most recent years. To obtain information pertaining to sport-related injuries, specific external cause codes are used. For example, to obtain skiing or snowboarding injury hospitalizations, codes for fall from skis or snowboard was used. However, the type of sports captured is limited to only those specific ICD10-CA codes that are available. Data from this tool are an underestimate to the true burden of sports-related injuries in BC, as many cases are seen in physician offices, medical clinics, or not treated at all. In addition, there does not exist a comprehensive database that captures all sports-related injuries; however, this tool provides a limited glance into certain sports-related hospitalizations in BC.

For more information on the codes used to develop the sport categories, see injury classification ICD-10 codes.

Appendix A: CHIRPP lifecycle infographic



Appendix B: CHIRPP form



Public Health Agency of Canada / Agence de la santé publique du Canada

British Columbia's Children's Hospital (CHIRPP)

C.H.I.R.P.P. Injury/Poisonings Reporting Form

FOR OFFICE USE ONLY — ID No.

Sex ☐ Male ☐ Female

1 A. When did the injury happen? D D M M M Y Y Y Y

1 B. What time of day did it happen? H H M M ☐ a.m. ☐ p.m.

2. Where did the injury happen? ☐ Outdoors ☐ Indoors — ***ALSO CHECK EITHER A, B, C, D, E, OR F AND GIVE MORE DETAIL***

- ☐ A. Own home / ☐ B. Other home → ☐ Kitchen ☐ Bathroom ☐ Bedroom ☐ Living Room ☐ Other (eg. yard, garage) →
- ☐ C. School → ☐ Playground ☐ Sports field ☐ Gym ☐ Classroom ☐ Other (eg: Library) →
- ☐ D. Park → ☐ Playground ☐ Sports field ☐ Other →
- ☐ E. Road → ☐ Sidewalk ☐ Bike path ☐ Bus stop ☐ Other (eg. ditch) →
- ☐ F. Other Location (eg. Arena) →

3. Was the person injured while working for pay? ☐ Yes ☐ No

4. What was the injured person doing when the injury happened? ***ALSO CHECK EITHER A, B, OR C AND GIVE MORE DETAIL***

- ☐ A. Participating in a sport? (eg: ice hockey/soccer) or physical activity (eg: skateboarding, tobogganing)
  - What sport or activity? →
  - Did this activity or sport include coaches, instructors or officials? → ☐ Yes ☐ No
- ☐ B. In or on a motorized vehicle: ☐ Car ☐ Van/SUV ☐ Truck ☐ Motorcycle ☐ Dirt bike ☐ ATV ☐ Snowmobile ☐ Other
  - Where was the patient seated? (ex: driver or passenger seat, in truck bed, or pulled behind vehicle) specify passenger row (passenger, back). →
- ☐ C. Other (eg: playing, eating, hobbies, cleaning, etc.) →

5. Please tell us what happened.

A. What went wrong? (eg: riding bike lost control and fell / spilled hot coffee / swallowed a magnet or medication)

B. What actually caused the injury? (eg: hit head on concrete or grass / hot coffee burned arm / choked or poisoned)

6. Was any safety equipment in use when the injury occurred?

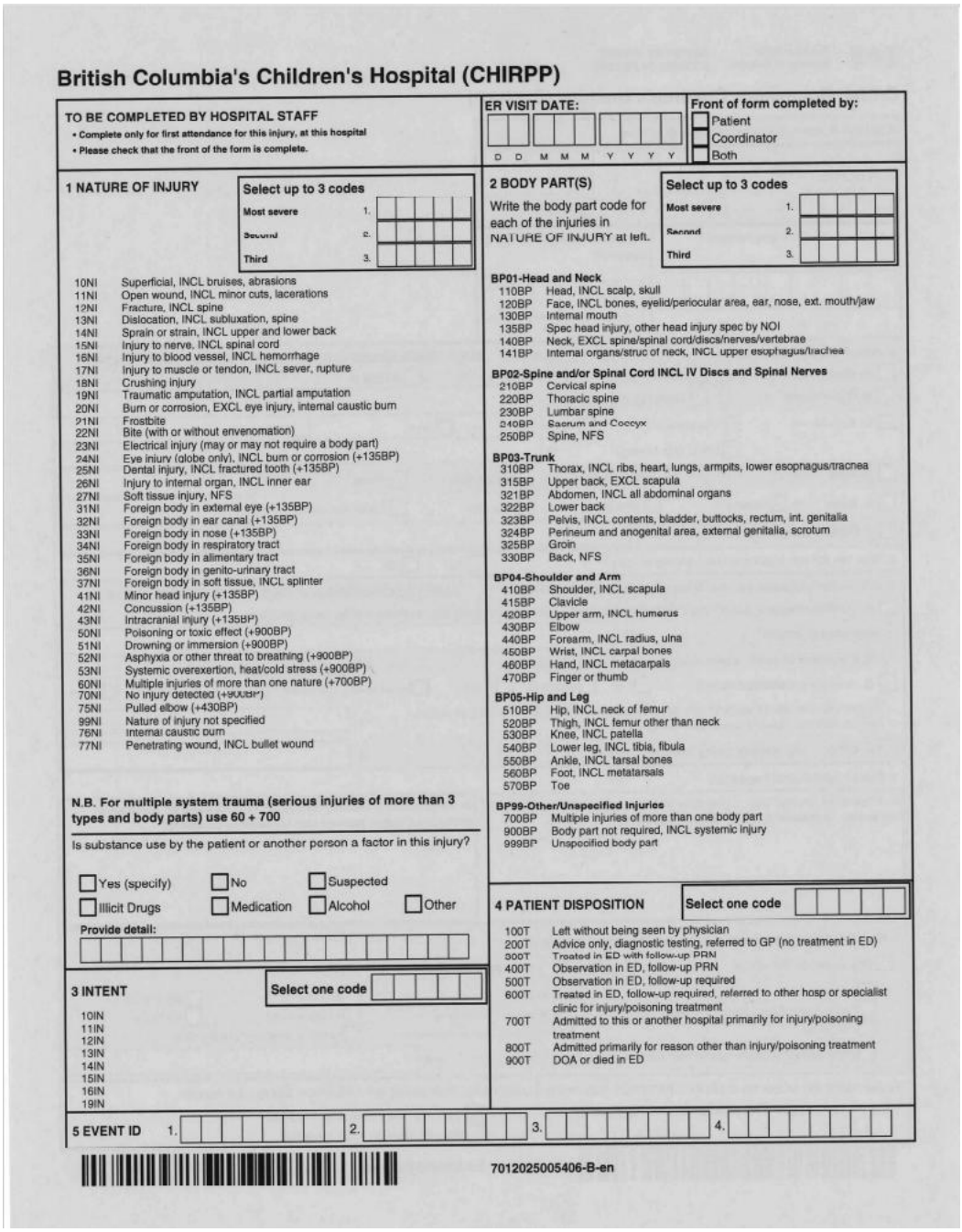
☐ Yes (check all that apply) ☐ No ☐ Unknown

- ☐ Helmet
- ☐ Sports Padding (eg: gloves, shin pads)
- ☐ Life Jacket
- ☐ Hard Hat
- ☐ Protective boots or clothing
- ☐ Protective eye wear or face mask
- ☐ Seat Belt
- ☐ Inflated Air Bag
- ☐ Infant Car Seat/Child Booster Seat
- ☐ Mouthguard
- ☐ Baby gate
- ☐ Other Safety Equipment - specify (eg: floormats, post covers) →

SOMETIMES WE NEED TO CONTACT PATIENTS (OR THEIR GUARDIANS) FOR MORE INFORMATION ABOUT AN INJURY.

May we contact you if we need additional information? ☐ Yes, you may contact me if needed ☐ No, I do not wish to be contacted

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British Columbia's Children's Hospital (CHIRPP)

TO BE COMPLETED BY HOSPITAL STAFF
- Complete only for first attendance for this injury, at this hospital
- Please check that the front of the form is complete.

ER VISIT DATE: D D M M M Y Y Y Y

Front of form completed by: ☐ Patient ☐ Coordinator ☐ Both

1 NATURE OF INJURY — Select up to 3 codes (Most severe 1., Second 2., Third 3.)

10NI Superficial, INCL bruises, abrasions
11NI Open wound, INCL minor cuts, lacerations
12NI Fracture, INCL spine
13NI Dislocation, INCL subluxation, spine
14NI Sprain or strain, INCL upper and lower back
15NI Injury to nerve, INCL spinal cord
16NI Injury to blood vessel, INCL hemorrhage
17NI Injury to muscle or tendon, INCL sever, rupture
18NI Crushing injury
19NI Traumatic amputation, INCL partial amputation
20NI Burn or corrosion, EXCL eye injury, internal caustic burn
21NI Frostbite
22NI Bite (with or without envenomation)
23NI Electrical injury (may or may not require a body part)
24NI Eye injury (globe only), INCL burn or corrosion (+135BP)
25NI Dental injury, INCL fractured tooth (+135BP)
26NI Injury to internal organ, INCL inner ear
27NI Soft tissue injury, NFS
31NI Foreign body in external eye (+135BP)
32NI Foreign body in ear canal (+135BP)
33NI Foreign body in nose (+135BP)
34NI Foreign body in respiratory tract
35NI Foreign body in alimentary tract
36NI Foreign body in genito-urinary tract
37NI Foreign body in soft tissue, INCL splinter
41NI Minor head injury (+135BP)
42NI Concussion (+135BP)
43NI Intracranial injury (+135BP)
50NI Poisoning or toxic effect (+900BP)
51NI Drowning or immersion (+900BP)
52NI Asphyxia or other threat to breathing (+900BP)
53NI Systemic overexertion, heat/cold stress (+900BP)
60NI Multiple injuries of more than one nature (+700BP)
70NI No injury detected (+900BP)
75NI Pulled elbow (+430BP)
99NI Nature of injury not specified
76NI Internal caustic burn
77NI Penetrating wound, INCL bullet wound

N.B. For multiple system trauma (serious injuries of more than 3 types and body parts) use 60 + 700

Is substance use by the patient or another person a factor in this injury?

☐ Yes (specify) ☐ No ☐ Suspected
☐ Illicit Drugs ☐ Medication ☐ Alcohol ☐ Other

Provide detail:

3 INTENT — Select one code

10IN
11IN
12IN
13IN
14IN
15IN
16IN
19IN

2 BODY PART(S) — Write the body part code for each of the injuries in NATURE OF INJURY at left. Select up to 3 codes (Most severe 1., Second 2., Third 3.)

BP01-Head and Neck
110BP Head, INCL scalp, skull
120BP Face, INCL bones, eyelid/periocular area, ear, nose, ext. mouth/jaw
130BP Internal mouth
135BP Spec head injury, other head injury spec by NOI
140BP Neck, EXCL spine/spinal cord/discs/nerves/vertebrae
141BP Internal organs/struc of neck, INCL upper esophagus/trachea

BP02-Spine and/or Spinal Cord INCL IV Discs and Spinal Nerves
210BP Cervical spine
220BP Thoracic spine
230BP Lumbar spine
240BP Sacrum and Coccyx
250BP Spine, NFS

BP03-Trunk
310BP Thorax, INCL ribs, heart, lungs, armpits, lower esophagus/trachea
315BP Upper back, EXCL scapula
321BP Abdomen, INCL all abdominal organs
322BP Lower back
323BP Pelvis, INCL contents, bladder, buttocks, rectum, int. genitalia
324BP Perineum and anogenital area, external genitalia, scrotum
325BP Groin
330BP Back, NFS

BP04-Shoulder and Arm
410BP Shoulder, INCL scapula
415BP Clavicle
420BP Upper arm, INCL humerus
430BP Elbow
440BP Forearm, INCL radius, ulna
450BP Wrist, INCL carpal bones
460BP Hand, INCL metacarpals
470BP Finger or thumb

BP05-Hip and Leg
510BP Hip, INCL neck of femur
520BP Thigh, INCL femur other than neck
530BP Knee, INCL patella
540BP Lower leg, INCL tibia, fibula
550BP Ankle, INCL tarsal bones
560BP Foot, INCL metatarsals
570BP Toe

BP99-Other/Unspecified Injuries
700BP Multiple injuries of more than one body part
900BP Body part not required, INCL systemic injury
999BP Unspecified body part

4 PATIENT DISPOSITION — Select one code

100T Left without being seen by physician
200T Advice only, diagnostic testing, referred to GP (no treatment in ED)
300T Treated in ED with follow-up PRN
400T Observation in ED, follow-up PRN
500T Observation in ED, follow-up required
600T Treated in ED, follow-up required, referred to other hosp or specialist clinic for injury/poisoning treatment
700T Admitted to this or another hospital primarily for injury/poisoning treatment
800T Admitted primarily for reason other than injury/poisoning treatment
900T DOA or died in ED

5 EVENT ID 1. 2. 3. 4.

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