

Snowmobile related (TN CI) v1
Definition Factsheet & Technical Brief

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Definition Description: The goal of this definition is to detect emergency department (ED) visits related to snowmobile or motorized snow bike traffic-related or non-traffic-related accident injuries. With this information, public health agencies can monitor the burden and trends of ED visits related to these types of accidents, understand the types of injuries that result, and identify possible places/methods for prevention.

New or Revised Definition: New

Date Created in ESSENCE: (Date)

Authored by the NSSP Community of Practice.

Use-Cases for Definition:

Case-finding: Not Intended as Use Case

Trend monitoring: Primary

Early outbreak detection: Not Intended as Use Case

Emergent Condition: Secondary

Justification: There are ICD-10 codes for snowmobile injuries, but the specific appropriate codes are not always assigned. By querying the chief complaint and other text fields we can get a better understanding of the burden of snowmobile/snow bike accidents and the resulting types of injuries.

Data Source During Development: Emergency Department visits

Validation Methods: Five jurisdictions (Alaska, Minnesota, Montana, New Mexico, Wisconsin) manually reviewed the data details of ED visits returned by the initial version of the query. Each jurisdiction classified visits as true or false positives and calculated positive predictive values. False positives were visits where the accident occurred in the distant past and was not the reason for the current visit, or the person was lifting or performing maintenance on the snowmobile itself when the person was injured. False positives were reviewed to identify patterns of why they were included, and the query was improved, where possible, to remove false positives.

Six jurisdictions (Alaska, Colorado, Minnesota, Montana, New Mexico, Wisconsin) manually reviewed the results of the updated, final query and calculated positive predictive values for the final version of the query.

Validation Results: For the final version of this query, the positive predictive values were 93% for Alaska, 92% for Colorado, 76% for Minnesota, 96% for Montana, 93% for New Mexico, and 96% for Wisconsin.

Limitations: Injuries suffered while lifting, moving, or performing maintenance on a snowmobile can be difficult to negate, and therefore might be included. The query does not limit visits to certain types of symptoms or reasons for visit. As a result, the query might return visits where a snowmobile was mentioned but the reason for visit was not related to a snowmobile accident (e.g., the patient was hit in the face with a tree branch while riding a snowmobile). We attempted to negate visits where a snowmobile was mentioned in the Triage Notes or other text fields but was not related to the cause of the visit (e.g., visits where a person was injured while skiing and was rescued by ski patrol on a snowmobile). For jurisdictions with facilities that report Triage Notes or Clinical impression, this version of the query will detect additional true positives but will also return more false positives than Snowmobile related v1.

Definition Fields and Structure:

The Chief Complaint Discharge Diagnosis Parsed Free Text field (also applied to Chief Complaint History, Triage Notes, and Clinical Impression) is used to query discharge diagnosis codes and free text with exclusions (as necessary), to develop the syndrome definition.

Visits are included if they have either of the following:

- ¬ One or more of the diagnosis codes listed in Table 1.
- ¬ Text terms or abbreviations that refer to snowmobiles (or related terms) or snow bikes.

Visits are excluded if they have Chief Complaint, Chief Complaint History, Triage Notes, or Clinical Impression text terms that:

- ¬ Refer to the occurrence happening in the distant past.
- ¬ Indicate the person was performing maintenance on the vehicle or loading or lifting the vehicle.
- ¬ Indicate the visit was for a follow up or medication refill.
- ¬ Indicate the visit was related to skiing or ski patrol.

Detailed Definition Components

Table 1. Inclusion and exclusion terms

Type	Terms	Description
Inclusions		
Discharge Diagnosis: ICD-10-CM	V86.02XA	Driver of snowmobile injured in traffic accident
	V86.12XA	Passenger of snowmobile injured in traffic accident
	V86.22XA	Person on outside of snowmobile injured in traffic accident
	V86.32XA	Unspecified occupant of snowmobile injured in traffic accident
	V86.42XA	Person injured while boarding or alighting from snowmobile
	V86.52XA	Driver of snowmobile injured in nontraffic accident
	V86.62XA	Passenger of snowmobile injured in nontraffic accident
	V86.72XA	Person on outside of snowmobile injured in nontraffic accident
	V86.92XA	Unspecified occupant of snowmobile injured in nontraffic accident
Discharge Diagnosis: SNOMED concepts	64174005	Snowmobile, device (physical object)
	214665005	Hit by motor-driven snow vehicle (event)
	214666006	Nontraffic accident involving being hit by motor-driven snow vehicle, driver of motor vehicle injured (event)
	214668007	Nontraffic accident involving being hit by motor-driven snow vehicle, motor cyclist injured (event)
	214667002	Nontraffic accident involving being hit by motor-driven snow vehicle, passenger of motor vehicle injured (event)

Type	Terms	Description
	214669004	Nontraffic accident involving being hit by motor-driven snow vehicle, passenger on motor cycle injured (event)
	214672006	Nontraffic accident involving being hit by motor-driven snow vehicle, pedal cyclist injured (event)
	214673001	Nontraffic accident involving being hit by motor-driven snow vehicle, pedestrian injured (event)
	214671004	Nontraffic accident involving being hit by motor-driven snow vehicle, rider of animal or occupant of animal-drawn vehicle injured (event)
	214653006	Fall from motor-driven snow vehicle (event)
	214654000	Nontraffic accident involving fall from motor-driven snow vehicle, driver of motor vehicle injured (event)
	242129005	Dragged by motor-driven snow vehicle (event)
	214641007	Accident off public road involving motor-driven snow vehicle (event)
	242128002	Run over by motor-driven snow vehicle (event)
	302973007	Collision of motor-driven snow vehicle (event)
	214699008	Nontraffic accident involving collision of motor-driven snow vehicle, not on public highway, driver of motor vehicle injured (event)
	214703006	Nontraffic accident involving collision of motor-driven snow vehicle, not on public highway, occupant of tram injured (event)
	214702001	Nontraffic accident involving collision of motor-driven snow vehicle, not on public highway, passenger on motor cycle injured (event)
	214705004	Nontraffic accident involving collision of motor-driven snow vehicle, not on public highway, pedal cyclist injured (event)
	214704000	Nontraffic accident involving collision of motor-driven snow vehicle, not on public highway, rider of animal or occupant of animal-drawn vehicle injured (event)
	214676009	Overturning of motor-driven snow vehicle (event)
	Chief Complaint, Chief Complaint History	Terms related to snowmobile, snow machine, snow bike, snogo, or brand names of snowmobiles.
Exclusions		
Discharge Diagnosis: ICD-10-CM	Z760	Repeat prescription
Discharge Diagnosis: ICD-9-CM		
Discharge Diagnosis: SNOMED concepts		
Chief Complaint, Chief Complaint History	Terms related to lifting, loading, or performing maintenance on the vehicle, or that the visit is a recheck or medication refill visit, or that the accident occurred in the distant past, or that the visit is related to skiing or rescue by ski patrol.	

Plain Language Syntax Description

The diagnosis codes are searched for ICD-10 codes related to injuries while being a passenger, driver, people outside of vehicle, or boarding or alighting a snowmobile – in traffic and non-traffic accidents. The diagnosis codes are searched for SNOMED codes related to snow vehicles.

Chief Complaint, Chief Complaint History, Triage Notes, and Clinical Impression are searched for phrases that indicate the visit was related to a snowmobile (or related terms) or snow bike accidents.

Certain phrases indicating the visit was related to lifting, loading, or performing maintenance on the vehicle, or that the visit was a recheck or medication refill visit, or that the accident occurred in the distant past are excluded. We attempted to negate visits where a snowmobile was mentioned in the Triage Notes or other text fields but was not related to the cause of the visit (e.g., visits where a person was injured while skiing and was rescued by ski patrol on a snowmobile).

ESSENCE Syntax

Table 2. *ESSENCE* syntax

Use the following URL and click "Configuration Options" to see the query setup: [Open ESSENCE query setup](#)

Search CC and DD Parsed Free Text with Also Apply to Chief Complaint History, Triage Notes, Clinical Impression:

(,^;V86[0-9]2XA^,OR,^;64174005;^,OR,^;214665005;^,OR,^;214666006;^,OR,^;214668007;^,OR,^;214667002;^,OR,^;214669004;^,OR,^;214672006;^,OR,^;214673001;^,OR,^;214671004;^,OR,^;214653006;^,OR,^;214654000;^,OR,^;242129005;^,OR,^;214641007;^,OR,^;242128002;^,OR,^;302973007;^,OR,^;214699008;^,OR,^;214703006;^,OR,^;214702001;^,OR,^;214705004;^,OR,^;214704000;^,OR,^;214676009;^),OR, (^,^snowmobile^,OR,^snowmobil^,OR,^snow mobile^,OR,^snow mobil^,OR,^snowmachine^,OR,^snow machine^,OR,^snogo^,OR,^snowgo^,OR,^snow go^,ANDNOT,(^[a-z]snow go^,or,^snow go[a-z]^),OR,^sno go^,ANDNOT,(^[a-z]sno go^,or,^sno go[a-z]^),OR,^snowbike^,OR,^snow bike^,OR,^skidoo^,OR,^ski[-]doo^),ANDNOT,(^stepping off^,OR,^working on^,OR,^working under^,OR,^fixing^,OR,^pick^up^,OR,^clutch^,OR,^lift^,OR,^pull^,OR,^trailer^,OR,^load^,ANDNOT,^upload^,OR, ^trying to start^,OR,^snowmobile helmet^,OR,^weeks ago^,OR,^wks ago^,OR,^month ago^,OR,^months ago^,OR,^years ago^,OR,^year ago^,OR,^yrs ago^,OR,^yr ago^,OR,^wound check^,OR,^medication refill^,OR,^recheck^,OR,^Z760^,OR,^snowmobile lane^,OR,^snowmobile ln^,OR,^skiing^,OR,^skier^,OR,^ski patrol^,OR,^skipatrol^,OR,^Past Medical History^snowmobile^,OR,^Past Medical History^snow mobile^,OR,^previous snowmobile^,OR,^previous snow mobile^,)

In a separate Chief Complaint History field, add the following negation criteria:

ISNULL,OR,^,ANDNOT,(^stepping off^,OR,^working on^,OR,^working under^,OR,^fixing^,OR,^pick^up^,OR,^clutch^,OR,^lift^,OR,^pull^,OR,^trailer^,OR,^load^,ANDNOT,^upload^,OR, ^trying to start^,OR,^snowmobile helmet^,OR,^weeks ago^,OR,^wks ago^,OR,^month ago^,OR,^months ago^,OR,^years ago^,OR,^year ago^,OR,^yrs ago^,OR,^yr ago^,OR,^wound check^,OR,^medication refill^,OR,^recheck^,OR,^snowmobile lane^,OR,^snowmobile ln^,OR,^skiing^,OR,^skier^,OR,^ski patrol^,OR,^skipatrol^,OR,^Past Medical History^snowmobile^,OR,^Past Medical History^snow mobile^,OR,^previous snowmobile^,OR,^previous snow mobile^,)

In a separate Triage Notes Orig field, add the following negation criteria:

ISNULL,OR,^,ANDNOT,(^stepping off^,OR,^working on^,OR,^working under^,OR,^fixing^,OR,^pick^up^,OR,^clutch^,OR,^lift^,OR,^pull^,OR,^trailer^,OR,^load^,ANDNOT,^upload^,OR, ^trying to start^,OR,^snowmobile helmet^,OR,^weeks ago^,OR,^wks ago^,OR,^month ago^,OR,^months ago^,OR,^years ago^,OR,^year ago^,OR,^yrs ago^,OR,^yr ago^,OR,^wound check^,OR,^medication refill^,OR,^recheck^,OR,^snowmobile lane^,OR,^snowmobile ln^,OR,^skiing^,OR,^skier^,OR,^ski patrol^,OR,^skipatrol^,OR,^Past Medical History^snowmobile^,OR,^Past Medical History^snow mobile^,OR,^previous snowmobile^,OR,^previous snow mobile^,)

In a separate Clinical Impression field, add the following negation criteria:

ISNULL,OR,^,ANDNOT,(^stepping off^,OR,^working on^,OR,^working under^,OR,^fixing^,OR,^pick^up^,OR,^clutch^,OR,^lift^,OR,^pull^,OR,^trailer^,OR,^load^,ANDNOT,^upload^,OR, ^trying to start^,OR,^snowmobile helmet^,OR,^weeks ago^,OR,^wks ago^,OR,^month ago^,OR,^months ago^,OR,^years ago^,OR,^year ago^,OR,^yrs ago^,OR,^yr ago^,OR,^wound check^,OR,^medication refill^,OR,^recheck^,OR,^snowmobile lane^,OR,^snowmobile ln^,OR,^skiing^,OR,^skier^,OR,^ski patrol^,OR,^skipatrol^,OR,^Past Medical History^snowmobile^,OR,^Past Medical History^snow mobile^,OR,^previous snowmobile^,OR,^previous snow mobile^,)