

# MONITORING INJURY-RELATED PRESENTATIONS AND ADMISSIONS TO HOSPITAL IN QUEENSLAND DURING COVID-19 PANDEMIC

## Background

During 2020, at the height of the COVID-19 pandemic, the Jamieson Trauma Institute (JTI) and Queensland Injury Surveillance Unit (QISU) monitored injury-related Emergency Department (ED) presentations and hospital admissions using a variety of data sources, to detect both real-time fluctuations in ED presentations, and emerging trends over different mechanisms of injury. The emergence of the Omicron variant and the subsequent COVID-19 wave seen in Queensland in early 2022, particularly South-East Queensland, prompted us to further assess these trends.

This report presents patterns and trends in injury-related emergency department presentations and hospital admissions from two data sources– QISU database and Queensland Hospital Admitted Patient Data Collection (QHAPDC).

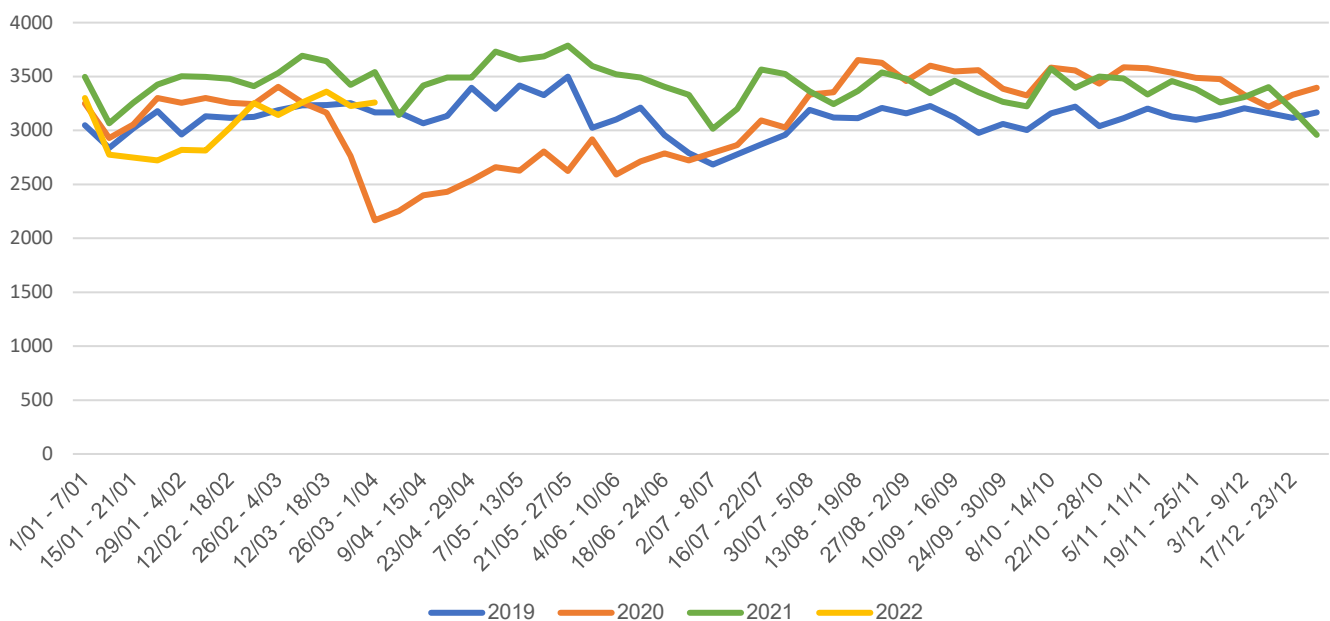
## Key Figures

### Trends over time

#### Queensland Injury Surveillance Unit

- The decrease in the number of injury-related presentations to QISU collecting Emergency Departments in 2020 (orange), compared to 2019 (blue) and 2021 (green), occurred from approximately mid-March. From mid-July 2020, the number of injury-related presentations was higher than the 2019 levels, and stayed high for the remainder of the year. January to February 2022 (yellow) saw the number of presentations to QISU collecting Emergency Departments be the lowest seen within this time series before the number starting to adjust to the 2019 level in March 2022.

Number of Weekly Injury Presentations to QISU Collecting Emergency Departments  
January 2019 - March 2022

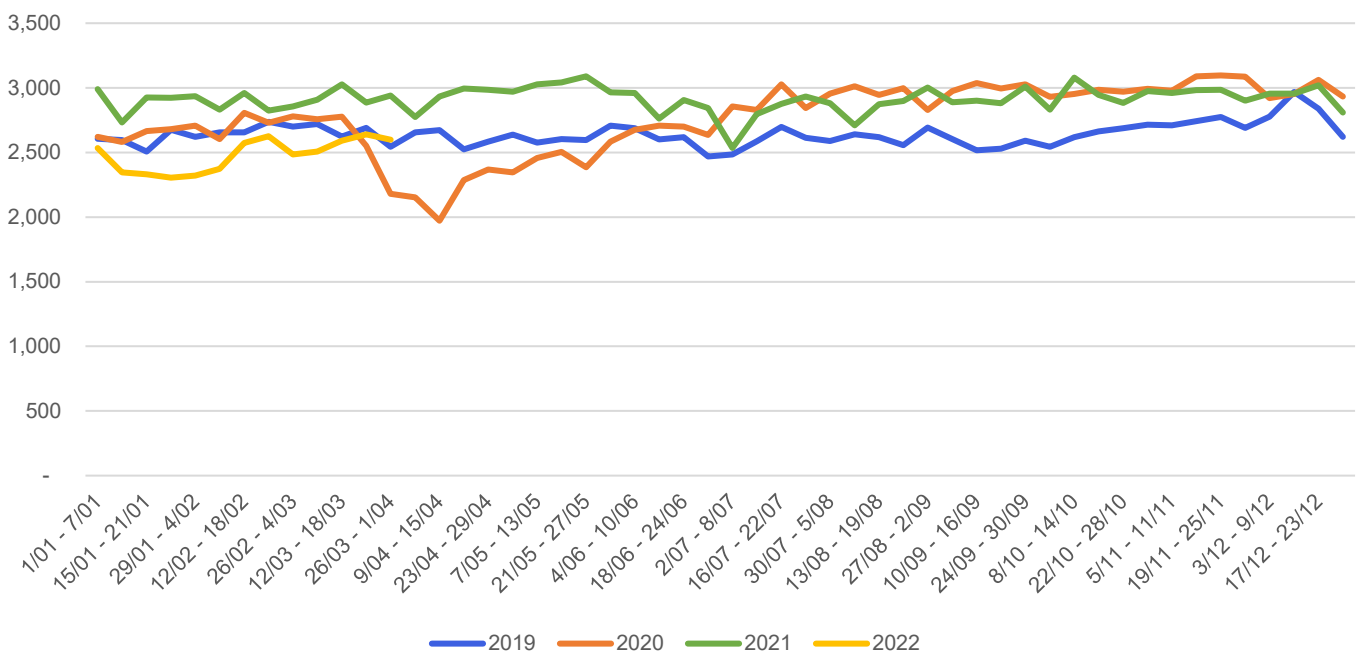




### Queensland Hospitals Admitted Patient Data Collection

- Similar to QISU data, there was a decline in the weekly number of injury related hospitalisations in 2020 (orange), compared to 2019 (blue), occurring from approximately mid-March. From mid-July to end of 2020, an increasing trend was observed in injury hospitalisations compared to 2019 levels. Weekly number of injury hospitalisations for 2021 (green) appeared higher in the first half of the year, compared to 2019 and 2020. A decreasing trend was again observed in 2022 (January to March 2022) and was lowest compared to previous years which is most likely occurred due to the impact of Omicron wave in South-East Queensland.

Number of Weekly Injury Hospitalisations in Queensland Public Acute Hospitals  
January 2019 - March 2022

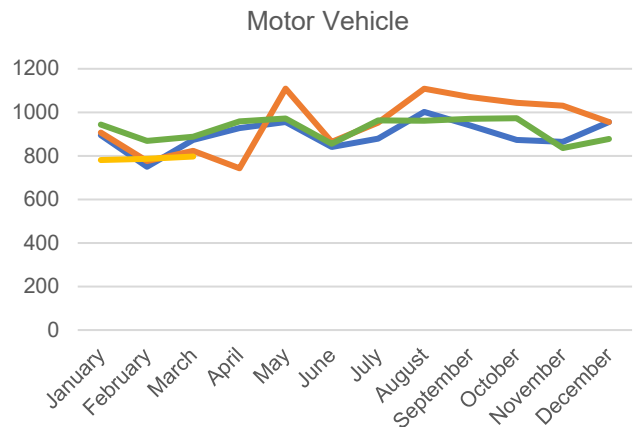
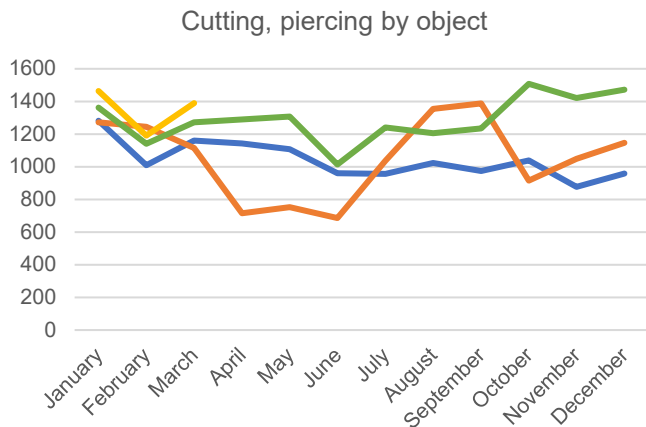
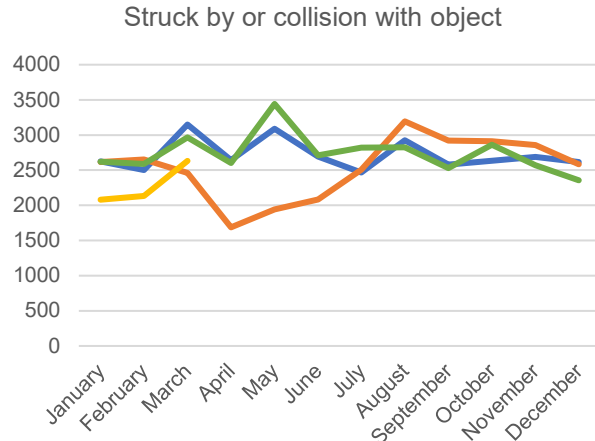
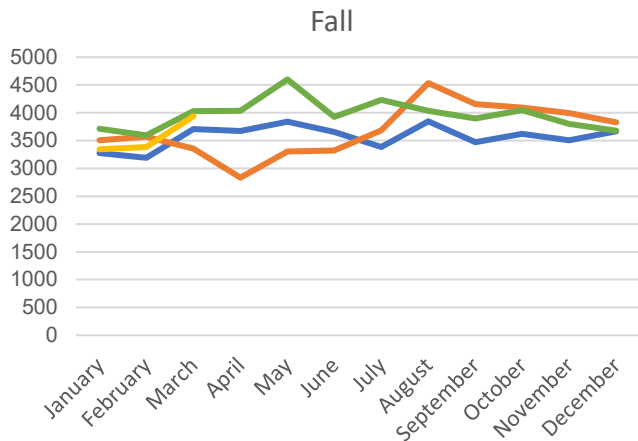




**Mechanism of injury (All Ages)**

**Queensland Injury Surveillance Unit**

**Number of Monthly Injury Presentations to QISU Collecting Emergency Departments**  
January 2019 - March 2022



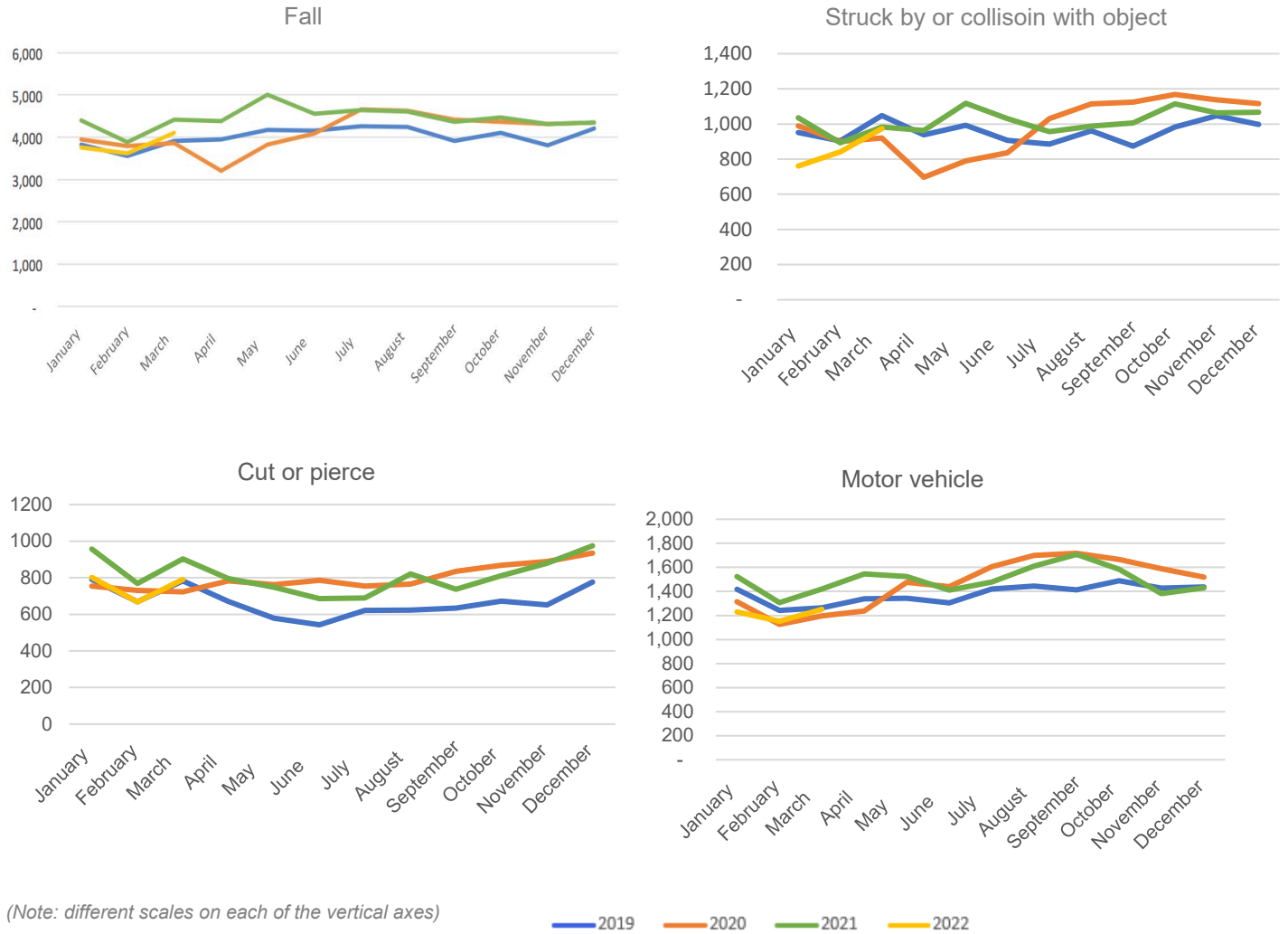
— 2019 — 2020 — 2021 — 2022

Note: different scales on each of the vertical axes.



## Queensland Hospital Admitted Patient Data

### Monthly Number of Injury Hospitalisations in Queensland Public Acute hospitals January 2019 - March 2022



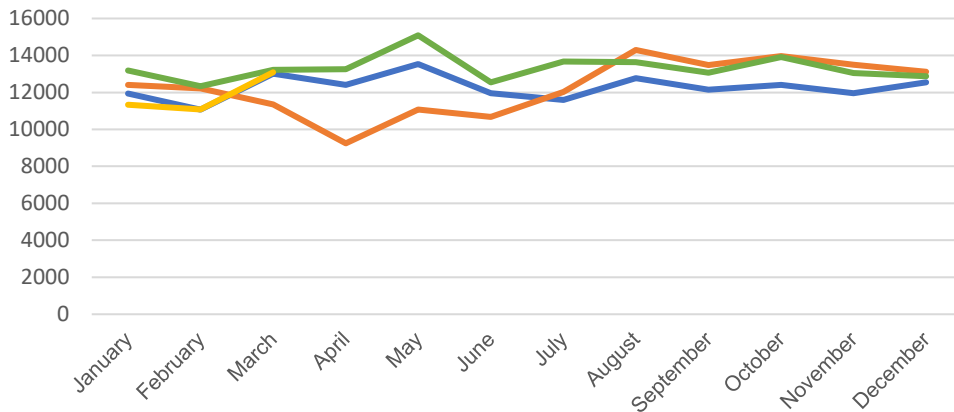


Intent (All Ages)

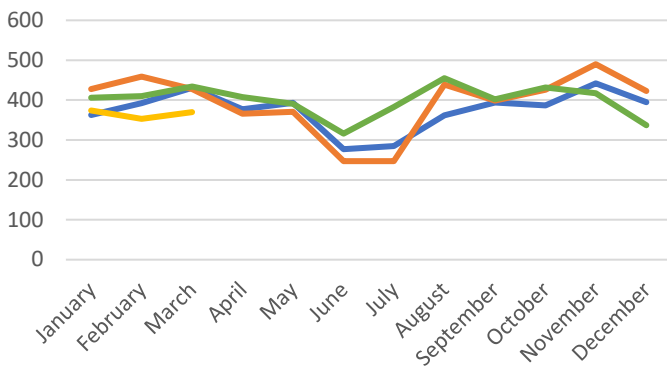
Queensland Injury Surveillance Unit

Number of Monthly Injury Presentations to QISU Collecting Emergency Departments  
January 2019 - March 2022

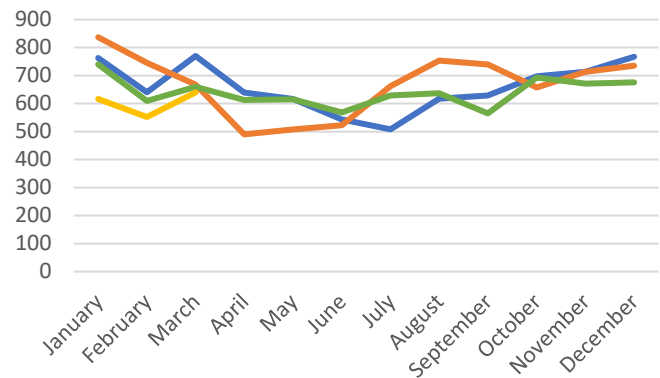
Unintentional injuries



Self-harm injuries



Assault-related injuries



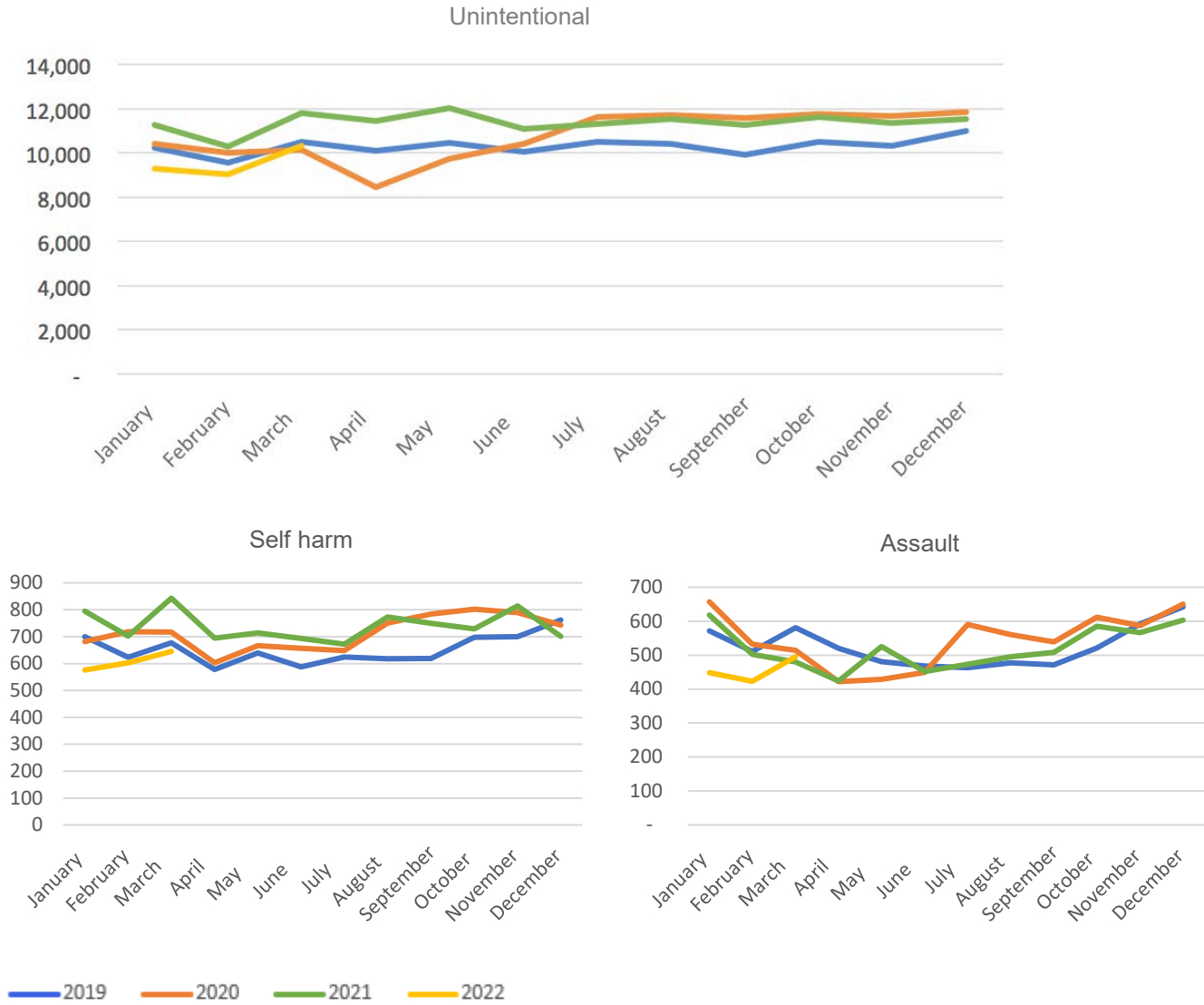
2019 2020 2021 2022

Note: different scales on each of the vertical axes.



## Queensland Hospital Admitted Patient Data

### Monthly Number of Injury Hospitalisations in Queensland Public Acute Hospitals January 2019 – March 2022



Note: different scales on each of the vertical axes.



## Data Scope and definitions

### Queensland Injury Surveillance Unit Emergency Department Presentations

#### Data Source

The Queensland Injury Surveillance Unit (QISU) collects injury data from emergency departments (ED) at participating hospitals across Queensland. The data is collected in the following Hospital and Health Service areas: Darling Downs HHS, Cairns and Hinterland HHS, Central QLD HHS, Children's Health QLD HHS, Mackay HHS, Metro North HHS, North West HHS and Wide Bay HHS (A full list of QISU collecting hospitals are available in Appendix 1).

#### Data Scope

1. QISU data is coded for Injury Surveillance using the National Data Standards for Injury Surveillance (NDS-IS v.2c).
2. Injury presentations in QISU collecting hospitals were extracted from QISU's machine classified database based on QISU's injury criteria.
3. Approximately 44% of the data presented were either manually coded by triage nurses at each participating hospital (15%) or by QISU coders (29%). The remaining data were coded using a machine learning classifier.
4. We used the latest version of the machine classifier which has the best performance in predicting external cause (0.81 – 0.82 weighted average sensitivity) and intent of injury (0.96 – 0.97 weighted average sensitivity). Please refer to manuscript below for details:  
Nanda G, Vallmuur K, Lehto M. Intelligent human-machine approaches for assigning groups of injury codes to accident narratives. *Safety Science*. 2020; 125:104585.

### Queensland Hospital Admitted Patients

#### Data Source

Queensland Hospital Admitted Patient Data Collection (QHAPDC) – derived subset of data tables comprising injury related hospital admissions only. The presentation of QHAPDC data was undertaken in consultation with the Statistical Services Branch, Queensland Health.

#### Data Scope

1. Includes injury episodes of admitted patient acute care with separation date between 1 Jan 2019 to 31 March 2022.
2. Includes acute care type episodes only (excludes qualified newborns).
3. Excludes data from Mater South Brisbane hospitals.
4. Data from July 2021 are preliminary and subject to change, particularly March 2022 data which might have some missing records.

**Appendix 1 – QISU Collecting Emergency Departments**

<b>Hospital</b>	<b>HHS</b>
QUEENSLAND CHILDREN'S HOSPITAL	Children's Health QLD HHS
BUNDABERG HOSPITAL	Wide Bay HHS
CHERBOURG HOSPITAL	Darling Downs HHS
MARYBOROUGH HOSPITAL	Wide Bay HHS
Oakey Hospital	Darling Downs HHS
WARWICK HOSPITAL	Darling Downs HHS
BILOELA HOSPITAL	Central QLD HHS
BLACKWATER HOSPITAL	Central QLD HHS
GLADSTONE HOSPITAL	Central QLD HHS
MOURA HOSPITAL	Central QLD HHS
ROCKHAMPTON HOSPITAL	Central QLD HHS
SPRINGSURE	Central QLD HHS
CAPRICORN COAST HOSPITAL	Central QLD HHS
CLERMONT HOSPITAL	Mackay HHS
MORANBAH HOSPITAL	Mackay HHS
PROSERPINE HOSPITAL	Mackay HHS
DYSART HOSPITAL	Mackay HHS
BOWEN HOSPITAL	Mackay HHS
ROYAL BRISBANE & WOMENS HOSPITAL	Metro North HHS
BABINDA HOSPITAL	Cairns & Hinterland HHS
MOSSMAN HOSPITAL	Cairns & Hinterland HHS
TULLY HOSPITAL	Cairns & Hinterland HHS
YARRABAH HOSPITAL	Cairns & Hinterland HHS
MOUNT ISA HOSPITAL	North West HHS
TOWNSVILLE HOSPITAL	Townsville HHS