

Serious Injuries in Road Traffic Collisions in Ireland

Overview

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1. Introduction

Collection and reporting of serious injury data can be complex as evidenced by both International and Irish experience. The purpose of this document is to set out the RSA's approach to reporting serious injuries over the period of the next strategy. While Ireland did not see a decrease in the number of serious injuries over the lifetime of the 2013 – 2020 strategy, since 2014 and in collaboration with An Garda Síochána, we now have more accurate figures on the incidence of serious injuries. To complement the enhanced data reporting process from police data we will be embarking on a follow up study in 2022 to report on serious injuries using hospital data.

By way of context, it's important to note the Safe System approach gives equal weight to reductions in both deaths and serious injuries.

2. Serious injuries in traffic collisions in Ireland

As is presented in the RSS 2021 - 2030, the number of reported serious injuries increased over the lifetime of the strategy. The target originally set in the strategy was not met and, since 2014, there has been a steady increase in the number of people seriously injured in road traffic collisions in Ireland each year, with the exception of 2020. However, serious injury figures from 2014 onwards are not comparable with earlier years due to a change in the way the RSA receives collision data from An Garda Síochána. It is likely that this change has provided more accurate figures on the incidence of serious injuries sustained in collisions in Ireland. However, it is internationally acknowledged that the number of serious injuries based on police reports is underestimated.

Serious injuries in road traffic collisions can often lead to lifelong disabilities with significant economic impacts linked to treatment and care. In 2019 for example, for every fatality recorded there were 10 serious injuries. While, in the main, fatalities in Ireland are of vehicle users, there is a higher proportion of vulnerable road users (VRUs) seriously injured in collisions. Taking a three-year average (2018 – 2020)¹ indicates that drivers and passengers accounted for 58% of fatalities but 46% of serious injuries. Over the same period, VRUs accounted for 41% of fatalities but 54% of serious injuries. In particular, cyclists accounted for 6% of fatalities but 20% of serious injuries. There were 141 fatalities and 1,275 serious injuries on average each year over this period. Consideration of measures aimed at reducing the burden of serious injuries in the next strategy are critical.

3. European Commission's response to address under reporting

Over the course of the last Road Safety Strategy (RSS; 2013 – 2020), the European Commission advised member states to adopt a serious injury medical definition for road traffic collisions. They proposed using a derivative of The Abbreviated Injury Scale (AIS©), created by The Association for the Advancement of Automotive Medicine (AAAM), it was called MAIS3+. Where an injury reached the threshold of three or more on the injury scale, this would be classified as a serious injury. The primary aim of which is to overcome the underestimation problem and to harmonise the definition used across member states.

¹ RSA (2021), 6 Month Road Safety Review, Slide 20; [https://www.rsa.ie/docs/default-source/default-document-library/mid-year-review-of-road-safety-2021-\(1\).pdf?sfvrsn=feedfe23_3](https://www.rsa.ie/docs/default-source/default-document-library/mid-year-review-of-road-safety-2021-(1).pdf?sfvrsn=feedfe23_3)

4. Irelands progress in relation to MAIS3+

The RSA accepted this definition as per Action 116 in the Road Safety Strategy 2013 – 2020; part of this action directed the RSA to establish the definition of serious injuries to be used in the collection of serious injury data.

Much of the hospital data in Europe is classified using the International Classification of Diseases (ICD). Countries also used different versions of ICD, primarily ICD-9 and ICD-10. To report serious injuries in the new format (MAIS3+) required significant work by many member states to recode existing hospital injury data classified in ICD into the AIS system. The EC provided a conversion tool to map ICD-9/10 to AIS. Ireland conducted a pilot study using the conversion tool to transform Irish hospital injury data, from the Hospital In-Patient Enquiry (HIPE) data set, and provided data for the years 2005 – 2014 to the EC.

Member states across Europe found implementing this recoding challenging; the effectiveness of the conversion tool depended on the type of coding (ICD-9 or ICD-10) originally used. This was equally challenging in Ireland, while Ireland used ICD-10, it was a modified version called ICD-10-AM. The number of serious injuries identified using this approach was lower than expected and lower than figures collected using police data.

Results from the pilot study meant further detailed work was required to improve the effectiveness of the conversion, this was difficult to achieve without a dedicated resource to conduct this work. To take this forward will require a review of the methodology using this conversion tool, learning from the experiences of other member states, and investigating other potential data sources in Ireland.

5. Ireland's plan in Phase 1 of the RSS 2021 - 2030

Improving how we collect and categorise serious injury data (the use of a medical definition and the interrogation of hospital data) and how we tackle the problem of serious injury in traffic collisions are key priorities in Ireland as part of this new strategy. This is particularly true given the Safe System approach to road safety with an emphasis on reducing, not only fatalities, but serious injuries by 50% by 2030. The strategy will outline a series of action plans across three phases to include high-impact actions that will directly reduce road deaths and serious injuries, and support actions to supplement and enhance the effectiveness of the high-impact actions and road safety more broadly.

In Phase 1 (2021 – 2024) of the strategy, one high impact and two support actions focus on improving our understanding of serious injuries and serious injury collisions. A high impact action has been included to help increase knowledge of the contributory factors to serious injury collisions in Ireland (Action 20). One support action sets out to identify and enumerate serious injuries using a medical definition, continuing the work from the previous strategy, as well as to improve reporting of serious injury data in general (Action 172). There is also a specific support action to expand reporting of serious injuries to include the outcomes of traumatic injury using data from the major trauma audit (Action 171). These two actions are included in response to the initial pilot study and will follow up on the work conducted to date. The target set in the new RSS may be updated once work on these actions is complete. Further measures will then be proposed for phases 2 and 3.

Given the importance of reducing the number and impact of serious injuries in our approach to road safety over this decade and to highlight a renewed focus, the topic for the RSA's Academic Lecture in January 2022 will be serious injuries, at which the RSA will present the latest Irish data. The RSA are also working with the School of Medicine in TCD and the

Health Intelligence Unit of the HSE to complete the work required for the medical definition for serious injuries as outlined previously.

6. Background notes

RSS 2021 – 2030 Actions

High Impact

Safe System priority intervention area: safe road use

20. Develop a mechanism to capture data on the contributory factors (e.g. speed, fatigue, intoxicants and mobile phone use) to serious injury road traffic collisions on an annual basis.

Support Actions

Safe System priority intervention area: post-crash response

171. Analyse and report on data from the major trauma audit and hospital data to establish the extent of trauma and serious injuries as a result of road traffic collisions and to work collaboratively to ensure that data can give a complete picture of the incidence, cause, management, and outcomes of traumatic injury.

172. Develop a method to identify and enumerate serious injuries using a medical definition, such as MAIS3+, and report on same as part of the dissemination of trend data, updates, and reporting on serious injuries.

7. Glossary

Serious injury

An injury for which the person is detained in hospital as an 'in-patient' or any of the following injuries whether or not detained in hospital: fractures, concussion, internal injuries, crushings, severe cuts and lacerations, and/or severe general shock requiring medical treatment.

Vulnerable road user

Road user types: Motorcyclist, Cyclist and Pedestrian.

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