National sports injury data strategy

Web report | Last updated: **24 Mar 2023** | Topic: <u>Sports injury</u>

About

This strategy outlines the plan to improve the understanding of sports injuries in Australia by leveraging existing data sources, building a framework to strengthen collection methods and standards, and ultimately creating a national sports injury data asset.

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Findings from this report:

- Stakeholders were supportive of the draft strategy to develop better sports injury data

- Privacy, consent, and access arrangements require more detail

- Ongoing consultation & collaboration with sporting organisations is needed to provide data to inform prevention programs

- Work is needed to improve data collection from medical records and other administration platforms

Introduction

Sports injuries can limit a person's ability to participate in sports activities, resulting in negative impacts on their overall health and wellbeing, as well as increasing the burden on the healthcare system. Despite the significance of sports injuries, limited national data is available to inform the design and evaluation of injury prevention and management programs.

To address this gap, the National Sports Injury Data Asset (NSIDA) is being developed to provide a better understanding of sports injuries. The National Sports Injury Data Strategy ("the strategy") outlines the plan for establishing the NSIDA, leveraging existing data sources and overcoming challenges in collecting and reporting injury data.

A draft version of this strategy (AIHW 2022) included a review of the data landscape and was put for public consultation in 2022. This final strategy incorporates the consultation feedback (AIHW 2023) and focuses on the approach for improving national sports injury data. The lead-up to the Brisbane 2032 Olympics and recent government initiatives in injury prevention create a favourable opportunity for investment in the development of the NSIDA.

Summary

Existing sources of sports injury data vary in coverage, quality, and format. Before developing a fit-for-purpose national Asset, data collectors should be supported to expand, improve and standardise their data. This Strategy describes the foundational supports required to deliver a National Sport Injury Data Asset and ensure that value is delivered through analysis and publication of new sports injury data insights. This strategy will contribute to the National Sports Research Agenda (Australian Sports Commission, 2022).

To address these challenges, three pillars have been identified under the strategy:

1. Sports injury data development
2. Methodology development
3. Sports injury surveillance and reporting

Sports injury data development

Data development will assist organisations to collect sports injury data using standardised methods and processes. This will provide data that could benefit sport organisations and participants while also contributing to the Asset and to the national understanding of sports injury.

A foundation for data development includes a framework to recommend best practice to collect useful data and help navigate data collection and use processes. The framework will provide a uniform reference for best practices for data collection, governance, consent, privacy, security, and data sharing. Best practice recommendations will be refined through consultation and collaboration involving the sports sector, other data providers and organisations, and experts in data and governance.

An updated data dictionary will support the collection of standard data elements suitable for the Asset.

Methodology development

Improved methods will be developed for data analysis and reporting, including those relating to the economics of sports injury and sports injury surveillance.

Sports injury surveillance and reporting

Sports injury data from a variety of sources will contribute to the Asset. The Asset will provide data on injury numbers, type, and cause in each sport, and help identify sports injury trends, and identify prevention priorities and how well prevention initiatives are working in the community. Data will be published periodically through the AIHW, and potentially other channels such as the Australian Sports Commission Clearinghouse to increase the reach of the data findings. Data providers and users will be consulted for input on interpretating findings, and where data require further development.

Vision

The Strategy's enduring vision is for a comprehensive national data collection, to be known as the National Sports Injury Data Asset (the Asset), that will:
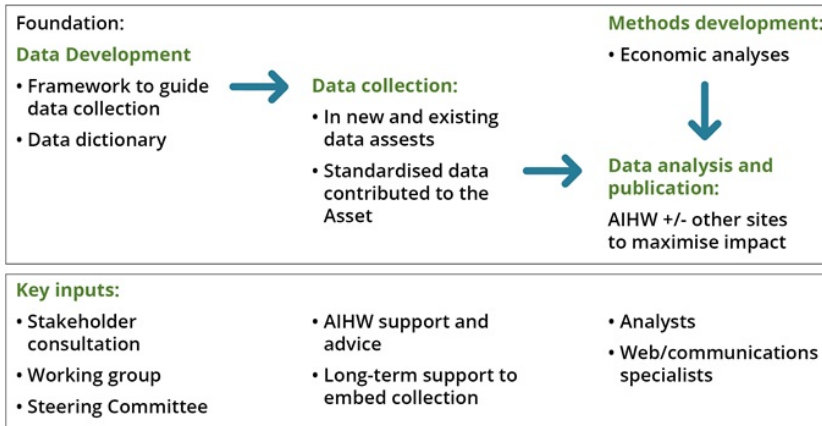
- help individuals, organisations, researchers and policymakers understand the risks of injury in community sports
- indicate where and what type of injury prevention programs are needed
- measure the costs of sports injuries to the health system and the benefits of prevention programs
- provide ongoing surveillance to
    - identify emerging risks, and
    - evaluate injury prevention programs in the community.

The strategy will be successful if:

- sports injury data is collected more systematically across private and public collections and contributes to the Asset
- data collectors have more knowledge of, and apply, best practices around data collection, consent, privacy, security, and data sharing
- data collection is efficient and becomes part of normal practice
- the benefits from the data Asset outweigh any data collection costs
- good quality data is available over time by sport, age, sex, identification as First Nations person, and other demographic information to inform the benefits and risks of participation for:
    - individuals to make sport participation decisions
    - sporting organisations to prioritise injury prevention priorities
    - researchers to investigate injury causes, equipment, assess prevention interventions and build capacity in injury prevention research
    - policymakers to inform investments in participation or prevention
    - health providers to plan for injury treatment demands

Structure and dependencies

Figure 1: National Sports Injury Data Strategy

Foundation:

Data Development

- Framework to guide data collection
- Data dictionary

Data collection:

- In new and existing data assests
- Standardised data contributed to the Asset

Methods development:

- Economic analyses

Data analysis and publication:

AIHW +/- other sites to maximise impact

Key inputs:

- Stakeholder consultation
- Working group
- Steering Committee

- AIHW support and advice
- Long-term support to embed collection

- Analysts
- Web/communications specialists

Implementation

Implementation of the strategy is intended to move the sports injury data landscape towards the longer-term outcomes stated in the vision (p.3). The key outputs from the strategy are:

- A Framework to guide data collection
- An updated sports injury data dictionary
- Methods development
- New and improved data sources
- Data collation into the national Asset
- Analyses and publication of data and data insights.

The above outputs will be dependent on the following activities:

- Convening data expert groups
- Ongoing stakeholder consultation and feedback
- Provision of advice and support by the AIHW to data collectors
- AIHW liaising with other government bodies for advice or data
- Strong collaborations between the AIHW and data providers
- Secure sharing of data to contribute to the data Asset
- Consultation with data suppliers and potential data users on data analyses and interpretation.

Successful implementation of the strategy will:

- provide greater standardised data collection, centrally available in the Asset
- enable reporting of aggregate data by different sports, geographical areas, age groups, sexes, types of injuries, causes and, in some cases, whether injury prevention equipment or programs were in use
- report in a way that is accessible and useful to stakeholders
- enable more accurate economic analyses on the costs and benefits of sports participation to the health system
- provide the evidence base for injury and injury prevention research
- increase participation secondary to the implementation of successful injury prevention programs leading to a reduction in injury, and maintaining sport participation
- increase participation by providing evidence on the actual risks and types of injury in community sport to allow informed decision-making
- decrease costs to the health system, individuals, out-of-pocket expenses, insurers and employers by reducing injuries and increasing health and wellbeing.
- benefit sports stakeholders through lower insurance costs and improved participation
- benefit high performance sport through a larger talent pool of persons less affected by injury.

Implementation program logic

Table 1: Implementation Program Logic

Pillars	Activities	Outputs	Outcomes –short-term	Outcomes –long-term
Data Development	• Consultation • Data subcommittee meetings	• Data framework • Data dictionary	Foundation for improved and ongoing data collection	
Data collection	• Consultation • Advice	• Datasets • Contribution to national data Asset	Foundation for policy and research evidence base	
Method development	• Analyses • Consultation	Methods	Improved data analyses	
Data Analysis and Publication	Consultation with data providers and users	• Publications, potentially across multiple Web platforms • Data	Data informs program and policy for: • injury prevention and • Participation in physical activities	• Decreased injury rates • Increased sport and physical activity participation • Decreased health burden on the health system and community

Data development

A foundation of **data development** will support data collectors to safely collect the right types of data. This includes

- developing a **framework** to support the collection of data
- developing a **data dictionary** and metadata standards to support interoperable collections for inclusion into a national Asset, and
- supporting organisations willing to collect and share their data to contribute to the Asset.

The framework

Consultation around the design and implementation of the strategy clarified the need for a framework to support data development to provide data suitable for inclusion in a national Asset. The framework will be developed in consultation with relevant stakeholders to guide sports injury data collection and provide guidance for:

- data governance, consent arrangements, privacy, security, and data sharing
- use of a data dictionary
- approaches to IT systems, and considering interoperability with other systems to enable data sharing
- data sharing arrangements with the AIHW to allow for routine reporting on the Asset and specify any limitations for research.

The framework is proposed to assist sporting and other organisations to standardise collection for maximal utility. A framework can recommend best practices for data governance, consent, privacy, security, interoperability, and data sharing. This framework will provide a uniform reference regarding recommended processes to collect useful data.

The data dictionary

A new data dictionary will be developed by the AIHW, with guidance and support from a data sub-committee that will consist of experts across sports injury, data collections, metadata standards and researchers, to provide an update to the 1998 Australian Sports Injury Data Dictionary. The dictionary will provide guidance on metadata standards to support inclusion into a larger Asset. The data dictionary will support collectors to collect standardised data elements in their datasets to benefit their organisations and contribute to the pool of datasets, that collectively will be the Asset.

Promoting improved data collection

The AIHW will provide feedback and support to sports organisations to develop their data collection and improve the quality, scope, and governance of their existing or developing data collections.

The AIHW will also work through AIHW committees and other government organisations or groups to promote systematic improvements in national data collection. This can include collecting and reporting Emergency Department external cause data. This may include gaining support for, and developing, a National Best Endeavours Data Set (NBEDS) through the:

- AIHW Strategic Committee for National Health Information (SCNHI) and the
- National Health Data and Information Standards Committee (NHDISC).

Data linkage

Over time, the demand for linked health and outcome data may require consideration of the collection of identified data suitable for data linkage. Linked data identifying a sports injury is currently limited to data sources such as the National Integrated Health Services Information Analysis Asset (NIHSIAA) which can link repeated hospitalisations and some other administrative datasets. The collection of identified data could allow for integration with new and existing data sets and potentially to outcome data. The framework for data collection would need to be updated to accommodate the collection of identifiable data and the governance oversight be updated to specifically address further consent, collection, storage, security and sharing settings.

Data collection

Data collection, and the sharing of data to the Asset will occur at different timeframes depending on the maturity of the data collection. Data is already collected in national collections such as the National Hospital Morbidity Database (NHMD) and the National Coronial Information System (NCIS), but they represent a small fraction of all sports injuries.

There will be annual publication of sports injury hospitalisation data by sport, injury type, cause, sex, age and other demographic information. State-based or new data collections will be added to the Asset over time. The AIHW will provide guidance to data collectors to assist with standardisation and governance of their data collections. Further materials, in addition to the framework and data dictionary to assist data collectors with collection and sharing of data to the Asset, will be developed as required to support data collectors.

Asset data governance

Data governance describes the source of authority for making decisions about data and the basis upon which those decisions are made (AIHW 2021). Strong data governance is key in ensuring compliance with legal, privacy and ethical obligations, in ensuring accountability, and obtaining the trust of stakeholders.

Table 2: Asset governance and advisory structures

High level oversight of legislative requirements	AIHW Board	AIHW Ethics Committee	AIHW Risk, Audit and Finance Committee
Executive oversight of work program and operations	AIHW Data Governance Committee	AIHW Security Committee	AIHW ICT Strategy Committee
Asset specific	Steering Committee	Data Subcommittee	

Steering Committee

The National Sports Injury Data Asset Steering Committee, convened by the AIHW since February 2020, includes researchers and key stakeholder group representatives. The committee will advise on the long-term work plan for the project and the implementation of the Asset.

Data Subcommittee

A data subcommittee will be established to assist with the functions of data management and provision, data specifications and compilation into a data dictionary, standards and cyclical data improvements, and best methods for sharing electronic data. The data subcommittee will have specialist knowledge of health information systems, clinical coding, data development, sport injury data, data governance and data collection management, or be data providers or representatives from different government or sporting organisations. This group will also identify and prioritise outstanding data gaps that need further development. Specific topic experts or policy areas will be consulted to advise on best practices to collect and share data. Technical advice will be sought external to the committee as required.

Datasets

The AIHW will publish metadata on the datasets contributing to the Asset to provide an accurate description of data. This will assist potential collectors and contributors to align their collections appropriately.

Figure 2: Existing and proposed sources of data for the Asset
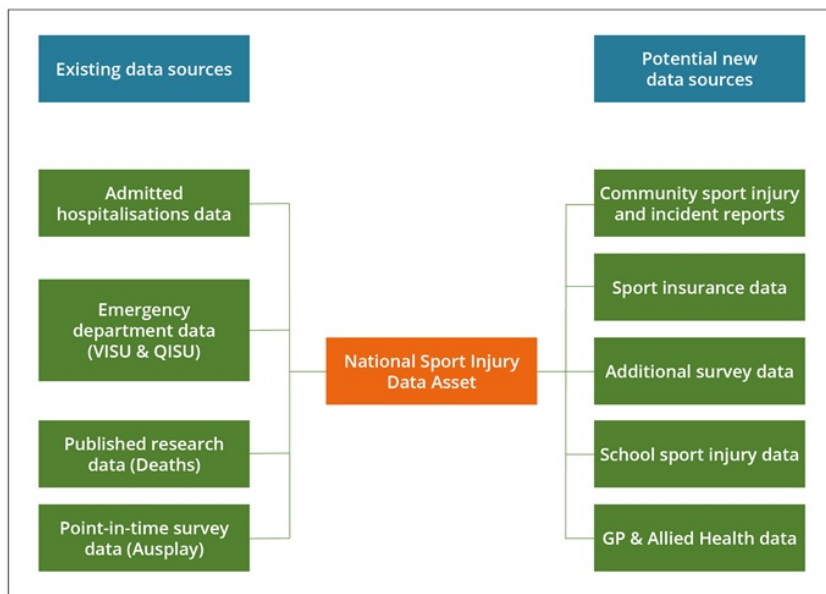
Reviewing the Asset

New and existing sources will be considered consistent with the principles of good data development and the measures identified in the AIHW's *Data governance framework 2021* (AIHW 2021). Data shared for inclusion in the Asset will be assessed for:

- use of suitable data standards and metadata
- compliance with data standards such as the data dictionary
- persistent data gaps
- other limitations of the data or data collection process.

Where data limitations exist, the AIHW will work with the data providers to improve the data collection processes and publish the caveats about the use of some of the data sources. Where the data source does not use standard data elements, the data subcommittee may determine the data do not contribute to the Asset.

The Asset will be subject to periodic review.

Data collection by external stakeholders and other government bodies will be dependent on best practice advice which may evolve over time and be aligned with relevant legislation (The *Privacy Act 1988, AIHW Act 1987*). There are multiple bodies providing regulations and advice in the data collection space. The AIHW will monitor any developments on National Health and Medical Research Council (NHMRC) ethics processes; Electronic Medical Records, injury registries, the Australian Digital Health Agency, National Health Interoperability Principles, Office of the National Data Commissioner's Data Sharing Framework for Public Sector Data, and the Council of Australian Governments (COAG) National Health Reform Agreement (NHRA).

Method development

Methods will be developed to support analyses of sports injury data for public health and economic reporting. Experts will be consulted for the development of economic and other methods, with the methods published to ensure rigour and reproducibility. The costs and benefits of physical activity should both be included when developing models for analysis.

Injury surveillance and reporting

The AIHW will analyse different data sources and consult with data providers and data users to appropriately interpret data and specify where data requires further development. Trends in sports injury will be identified and reported as appropriate.

Data from updates to the admitted hospitalisation data and other sources will be published through the AIHW and other channels to ensure that the data is accessible and useful to a breadth of users. Updates could be data tables as well as focused analytical web reports or fact sheets. The demand for this data is expected to grow over time and encourage data providers to further develop their data collections.

Data will be provided for approved research projects. It is expected that investigator-led analyses will increase over time as the quality and quantity of data in the Asset increases.

Expanding the reach of the data

A network of relevant experts and advisors with specific expertise or policy area representation will advise on ways to build engagement and participation with new and potential users of the data. This may require data to be formatted or presented in different ways to increase utility. This network will also advise on ways to distribute the findings from the Asset so that it can be useful to different stakeholder groups.

Summary of consultation feedback on the draft strategy

The draft *National Sports Injury Data Strategy* was released on the AIHW Sports Injury web page on 18 February 2022. (AIHW 2023). Broad consultation on the draft strategy was sought to ensure the strategy can deliver data that benefits individuals, sport organisations and researchers. A consultation report summarising the feedback is published on the AIHW website.

Key themes from submissions highlighted:

- A high level of support for the strategy
- The need to leverage existing data sources through standardised reporting and improved access.
- Data gaps and varying data quality.

Enablers for the strategy included:

- Data sharing standards
- Alignment with the proposed National Injury Prevention Strategy 2021-2031 (Department of Health, 2020)
- Leadership by a national agency (AIHW).

Barriers to effective implementation of the strategy included:

- Issues regarding privacy, consent, and access
- Lack of systematic data collection
- Governance and resourcing.

Consultation suggested further work to:

- refine governance, privacy, consent, security and access arrangements and provide education around recommended best practice
- consider resourcing requirements for data collection
- standardise data collection and reporting, to improve data quality and reduce data gaps
- explore incorporating standardised core sports injury items into existing platforms (such as medical, sports trainer, sports administration/registration, sports insurer and education incident management platforms)
- work with stakeholders to ensure that data is provided on platforms and in ways that is easy to access and understand
- work with stakeholders and data providers to minimise risks that data would be used out-of-context or frame a sport as 'dangerous'.

References

AIHW 2021. Data governance framework 2021. Canberra: AIHW. Viewed 8 February 2023.

Australian Sports Commission, 2023, National Sport Research Agenda. Viewed 8 February 2023.

AIHW 2022. National sports injury data strategy: Draft consultation report. AIHW Cat. no. INJCAT 222. Canberra: AIHW.

AIHW 2023. Consultation report on the National sports injury data strategy: Draft consultation report.

Department of Health 2020. National Injury Prevention Strategy 2020–2030. Department of Health and Aged Care, Australian Government. Viewed 8 February 2023.

Notes

Acknowledgements

Related material

Resources

Related topics

- Injury