



Appendix

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Appendix to: Fernando DT, Berecki-Gisolf J, Finch CF. Sports injuries in Victoria, 2012–13 to 2014–15: evidence from emergency department records. *Med J Aust* 2018; 208: 255-260. doi: 10.5694/mja17.00872.

Box 1: Details of Participation in Sport and Physical Recreation, Victoria 2013-14 survey

This was collected by the ABS as part of the Labour Force Survey, which is carried out on a sample of households. One person was selected randomly from each household and asked if that person participated at least once in a sport activity in the last 12 months. The sample data were then weighted to represent population estimates. In these data, 'Participants' were defined as players, competitors or persons who took part in a physically active role.

Box 2: Data sources and case selection

The fields "activity when injured", "place where injury occurred" and "description of injury event" were the main variables used in the algorithm to identify sport and recreation related injury in the VEMD. In an ideal situation the activity and description variables should agree, which is not always the case. In such scenarios, one field could capture a case when the other fails to. These two variables together provide a better estimation of cases related to sport and recreation injury than sole reliance on the activity code for use in injury surveillance.

The case selection algorithm was developed using SPSS 24 to identify over 180 specific sports and active recreation types. These activities were defined similarly to the sports activities in the External Causes of Morbidity and Mortality chapter in the International Classification of Diseases manual (ICD-10-AM) used for hospital admissions.^{1,2} They were then grouped to match the 49 sports types in the participation data to calculate injuries per participant.

Steps used in creating the "sport" flag

1. If any unit record that was coded as sports in the "Activity When Injured" field or the text description stated the term "sport" the case was coded to "unspecified sport and exercise activity" under a new "sport" flag variable.
2. A search was carried out for terms relevant to each sport identified in the ICD-10-AM manual, including spelling variations or errors, derivatives and related terms.
3. The sequencing of search terms was pre-set in the search algorithm: the hierarchy of the coding was similar to that used for sports in the ICD-10-AM manual. Where there were two or more different sports named in the one record, the first sport written into the syntax was flagged. Records were checked manually and a reversal was performed if required.
4. Sports with very definite terms that could not be confused with another activity (e.g., tenpin bowling) did not follow the hierarchy in step 3.
5. General terms that would be connected to sports (e.g., donut and biscuit) were used to identify water sports.
6. Skiing vs. water skiing was mainly based on the month of ED presentation. Cases that presented in June to September were considered snow skiing and the remainder as water skiing unless otherwise stated. Cases flagged as water skiing that did not contain any water skiing related terms were manually re-flagged as snow skiing: some of these were skiing events undertaken outside Victoria and presented to a hospital at a later date.

7. All-terrain vehicle, motor bike and cycling as sports were flagged by taking into account the relevant text terms and/or location and cause variable [e.g., term “ATV”, term “motor bike” with location indicating off-road, term “motocross”, term “BMX” etc.]
8. Cases compensated by work-cover were excluded except for those with activity coded to sport/leisure and place coded to athletics and sport area/place for recreation/school, day care and public administration building.
9. Cases were excluded if the Human Intent field code indicated assault, maltreatment or neglect and the text narrative confirmed so, or if the text narrative indicated an assault.
10. After manual evaluation of the narrative, if it was clear that the injury was not sport or recreation related, the case was excluded. This included some cases that were working for income, but in a non-participatory role in the actual sport.
11. Samples of flagged cases were manually screened to determine relevance and if necessary select terms identified from the samples were used to remove false positives from the entire selection.

References

1. National Casemix and Classification Centre. International Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modifications (ICD-10-AM). Eighth ed. NSW: The University of Wollongong; 2013.
2. National Centre for Classification in Health. International Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modifications (ICD-10-AM). Seventh ed. NSW: University of Sydney; 2010.

Figure 1: Odds ratios (log scale) and 95% confidence intervals for subsequent hospital admission following a sports-injury related ED presentation in Victorian males aged 5+ years.

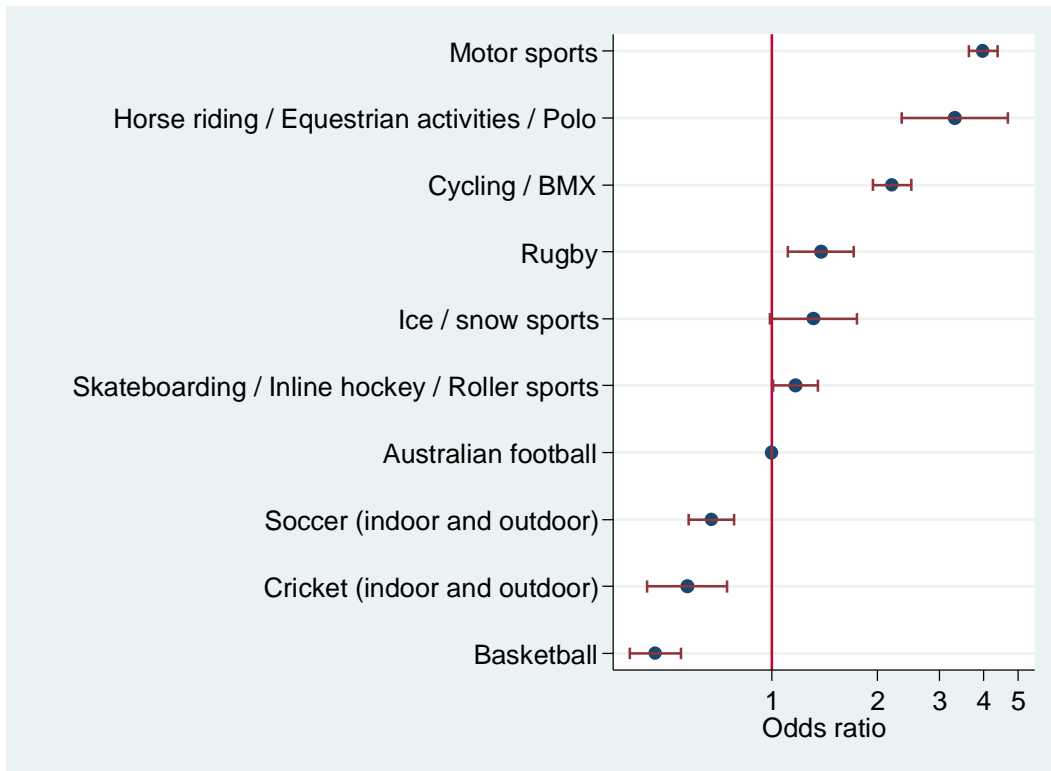


Figure 2: Odds ratios (log scale) and 95% confidence intervals for subsequent hospital admission following a sports-injury related ED presentation in Victorian females aged 5+ years

