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The UPLOADS Project: Development of an Australian National Incident Dataset for led outdoor activities

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To the editor:

Since 2011, the authors have been engaged in a major program of research to address the lack of information available on the epidemiology and causation of incidents associated with led outdoor activities in Australia (uploadsproject.org). The goal was to develop a system that allows organisations to collect and analyse their own incident and participation data, and contribute the data to a National Incident Dataset that is regularly analysed and reported on by the research team. At the start of the project, the steering committee decided that the system should collect data on injuries, illnesses, equipment damage, environmental damage, social/psychological impacts and "near misses", as these outcomes all have the potential to impact on participation in activities. The resulting system is primarily aimed at organisations which facilitate supervised or instructed 'led' outdoor activities, such as schools, outdoor education providers, commercial outdoor recreation and adventure facilitators, school camps and outdoor therapy providers. The project is funded and supported by in-kind contributions from these organisations, peak bodies and government departments (see acknowledgements).

The project has involved a number of studies (shown in Fig. 1) that have contributed towards the development of data collection and incident coding tools, and a domain-specific accident analysis method. The accident analysis method was developed to ensure that contributing factors, and the relationships between them, can be reliably identified from the qualitative data collected (both by organisations analysing their own data and the research team). The method is underpinned by a systems-theory model of accident causation [1], and consists of taxonomy for coding the qualitative descriptions of incidents and a framework for representing the system of factors identified (see [2]). This approach ensures that all epidemiological data reporting the rate and type of incidents is accompanied by detailed analyses of the contributing factors involved.

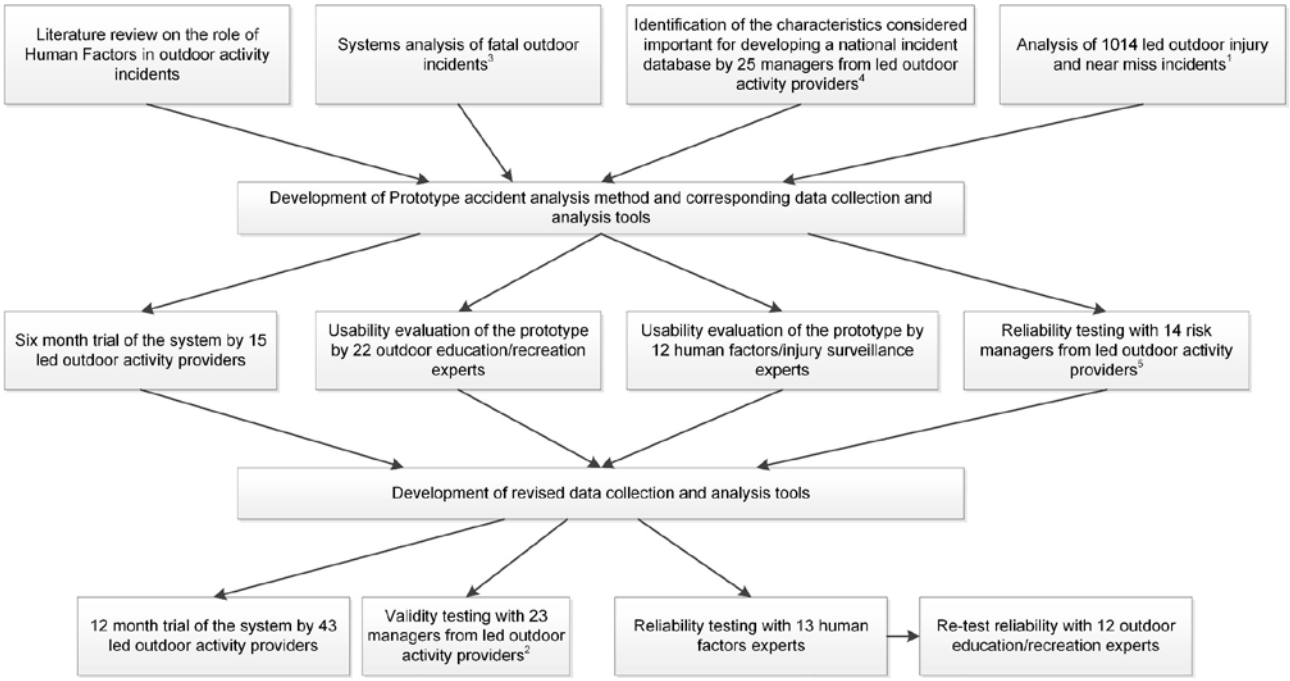

Figure 1 Overview of studies conducted to develop the data collection and incident coding tools, and accident analysis method

The trial of the prototype system involved 15 organisations collecting incident and participation data from June to December 2013. Five organisations were commercial enterprises, 5 were not-for-profits, 2 were schools, 2 were registered training organisations and 1 was a government agency/public sector. The prototype system included: a software tool for collecting and coding incident data; paper-based report forms; an incident severity scale; a spreadsheet for recording participation data; and video and paper-based training. In addition to storing the data, the software tool allowed users to code the qualitative data in the reports collected using the prototype accident analysis method. Severity was rated using the scale developed by the New Zealand National Incident Database for outdoor activities. The codes used to classify injury type and location were adapted from the International Classification of Diseases, 10th edition. Participation data was captured in terms of the total number of participants, the total number of participation hours (duration of activity), and the total number of participation days (number of days participant were exposed to the activity) for each activity type conducted in a month. At the end of each month, participants were asked to contribute participation and deidentified incident data via email.

The level of participation in the prototype trial was quite low. Only five organisations responded to requests for data every month of the trial and two organisations did not respond at all. The organisations gave a number of reasons for not contributing data, including: overwhelmed by workload (n = 2); staff shortages (n = 2); not time efficient to use current incident reporting system and UPLOADS (n = 1); and lacked support from management (n = 1). One organisation had significant technical difficulties due to their operating system, and only contributed data for the first month.

Despite these challenges, 184 incident reports were collected with accompanying participation data. The reports included information on: 120 injuries, 31 illnesses, 5 social or psychological impacts, 2 cases of equipment damage and 25 near misses. Of these reports, 152 had been coded using the accident analysis method. The majority of the fields within the reports were completed; however, many reports were lacking demographic details for the person ill or injured (e.g. age, role, experience in activity). The participation data included details on 59 different activities. Records of the number of participants and participation days were complete; however, reporting of participation hours was inconsistent.

A number of lessons were learnt from the trial. First, some organisations reported that they did not run enough activities or have enough incidents to warrant the use of the analysis tools. Second, the collection of participation data needed to be simplified. Third, some organisations had a high staff turnover, and the training of new staff to use the system was problematic. Fourth, some organisations had minimal IT infrastructure and support, and installing software updates was a significant barrier to participation. Finally, many organisations indicated that monthly data collection was an unreasonable expectation.

Based on these findings and the usability studies, we developed two different data collection tools: the UPLOADS Software tool and UPLOADS Lite. The UPLOADS Software Tool allows organisations to: record incident and participation data; analyse their own incidents using the accident analysis method; generate automatic reports on the data they collect; and contribute deidentified data to the National Incident Dataset. The software tool is compatible with any computer that can run the Chrome web browser. Organisations are asked to contribute deidentified data (i.e. names removed) to the project on a three

monthly basis. All training material is now delivered online, and links to the training and definitions for key terms are embedded within the software. UPLOADS Lite is designed for organisations who only want to contribute data to the National Incident Dataset. An online survey allows organisations to contribute anonymous incident reports; organisations are also able to save the reports they enter for their own records. Participation data is contributed via email using a spreadsheet. In addition to developing two parallel systems, we also reduced the number of mandatory reporting fields, removed the requirement to report the number of participation hours and revised the incident severity scale.

The trial of the revised system will run for 12 months (May 2014 – May 2015), although it is expected that data collection will be on-going. Currently, we have 43 organisations participating in the project. We have just produced the first report on the first six months of the trial (see uploadsproject.org). Whilst there is work to do in order to enhance uptake of the system and indeed the quality of the data reported, it is clear that UPLOADS will be an important tool in the sectors' delivery of safe led outdoor activities. It is intended that the continued analysis and dissemination of the UPLOADS National Incident Dataset will contribute to Australian efforts to reduce incidents during led outdoor activities.

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