

Trial of a new incident reporting system for the outdoor sector (UPLOADS): initial data and lessons learnt



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Sunshine Coast
Accident Research (USCAR)

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Overview

- UPLOADS project
- Prototype system
- Data collected during 6 month trial
- Bushwalking analysis
- Key issues identified/Lessons learnt
- Redevelopment of UPLOADS!

Goal of the UPLOADS Project

Develop reliable and valid incident reporting, storage and analysis tools for the outdoor education and recreation sector in Australia.

Two components:

- 1) Tools to help organisations collect and analyse detailed information on near misses and adverse events.
- 2) Development of a National database which will be regularly analysed and disseminated so that the sector can understand the risks it faces and take appropriate action.

Sector?

The project is primarily aimed at organisations which facilitate supervised or 'led' outdoor activities.

- outdoor education
- school camps
- adventure tourism
- outdoor recreation
- outdoor therapy



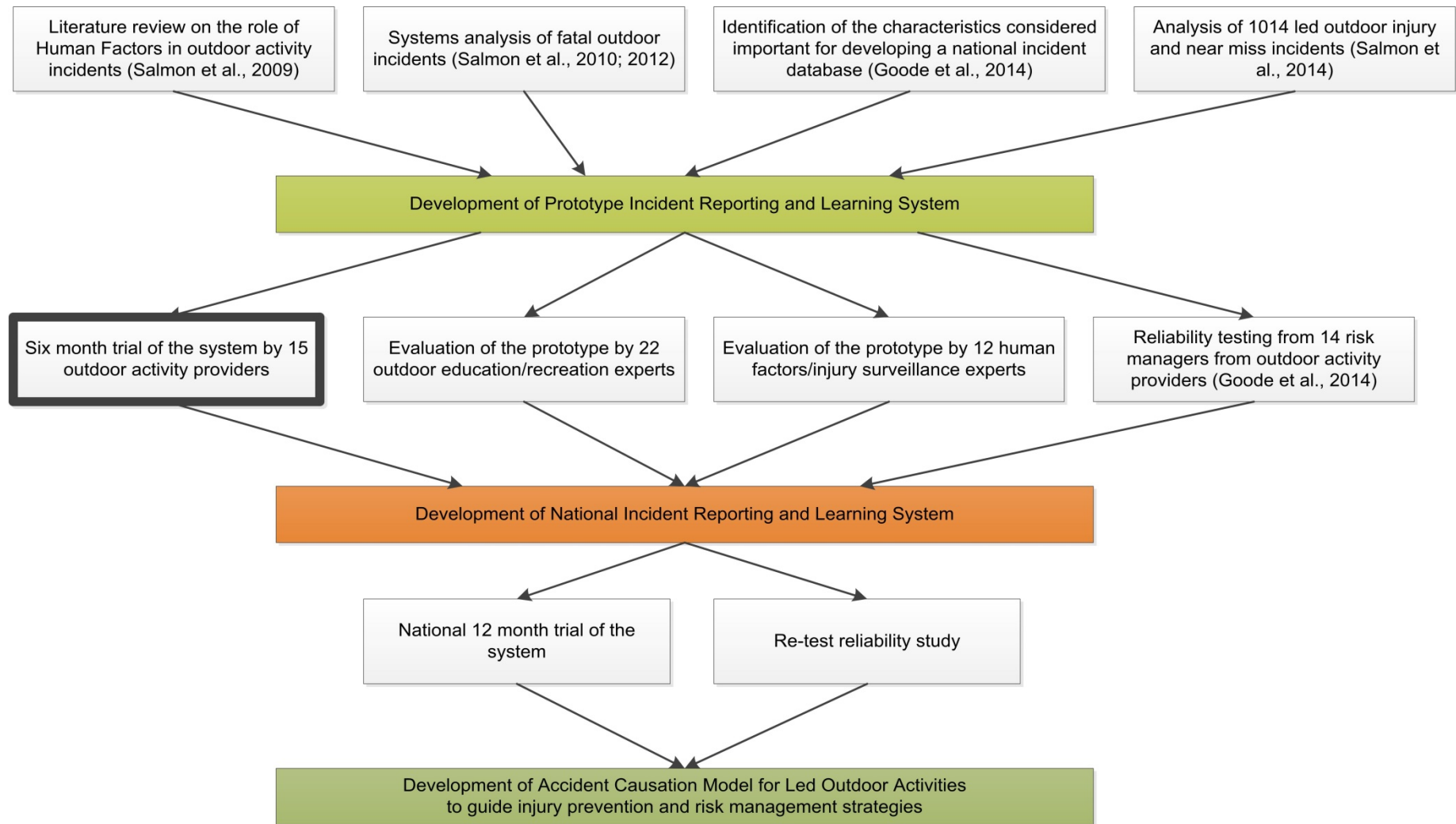
Benefits - organisations

1. Evaluate efficacy of risk management strategies
2. Identify when changes to programs are necessary
3. Justify changes to policy, training, program location, activity
3. Help retain organisational knowledge
4. Understand the *real*, as opposed to the perceived, risks

Benefits - sector

1. Provides a common language for talking about incidents across organisations
2. Inform risk management planning for certain activities, locations → Allow organisations to identify unknown risks without an accident actually having to occur in their organisation
3. Understand the *real* as opposed to the perceived risks
4. Standardised reporting tools across organisations reduce the training burden on causal staff

This requires much research...



Aims of the trial

- Refine the fields/structure database to improve ease of use;
- Refine taxonomy of causal factors associated with led outdoor activity incidents;
- Identify of any technical issues; and
- Identify the prevalence of incidents and their contributing factors.

Six month trial of the prototype

Organisations were asked to:

1. Nominate a system administrator;
2. Install UPLOADS a computer in their organisation;
3. Use UPLOADS for 6 months; and
4. Contribute deidentified incident and participation data on a monthly basis.

The prototype data collection system

The system consists of:

- 1) A software tool for recording injury and near miss data, tailored to the outdoor activity context;
- 2) A coding framework for classifying the causal factors involved in outdoor injuries and near misses. The framework is underpinned by a systems theory model, Rasmussen's Risk Management Framework.
- 3) Tools for analysing the causal factor data;
- 4) Paper-based and video training; and
- 5) A method for secure and confidential contribution to the national database.

Incident data

Near miss and adverse events

Incident characteristics (e.g. activity type, people involved, location)

Adverse outcomes details (i.e. injuries, illnesses)

Description of event

Causal factors involved in the event

Staff

Staff contact details, qualifications, medical records and dietary requirements.

| Incidents | Staff | People | Courses | Templates |
|-------------|------------|--------|---------|-----------|
| Change view | New Record | Delete | Find | Show All |

| Staff ID | SAAA_1003 | Dietary restrictions | None | | | | | | | | | | | | | | |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------|-----------------------|--------------|-------------------------------|-----------|--|--|--|--|--|--|--|--|--|--|
| First name | Alira | Medications | Ventolin | | | | | | | | | | | | | | |
| Last name | Goode | Pre-existing medical conditions or injuries | Ankle injury 2011 | | | | | | | | | | | | | | |
| DOB | 20/07/1961 | Notes | | | | | | | | | | | | | | | |
| Gender | <input checked="" type="radio"/> Female <input type="radio"/> Male | | | | | | | | | | | | | | | | |
| Home phone | 07 5453 8782 | | | | | | | | | | | | | | | | |
| Work phone | 07 5223 5663 | | | | | | | | | | | | | | | | |
| Mobile | 0420 199 566 | | | | | | | | | | | | | | | | |
| Fax | | | | | | | | | | | | | | | | | |
| Email | agoode@expo.com | | | | | | | | | | | | | | | | |
| Emergency contact | Jim Goode | | | | | | | | | | | | | | | | |
| Phone | 0412 955 266 | | | | | | | | | | | | | | | | |
| Position | Instructor | | | | | | | | | | | | | | | | |
| Address | 1 Green St | | | | | | | | | | | | | | | | |
| Suburb | Wyong | | | | | | | | | | | | | | | | |
| State | QLD | | | | | | | | | | | | | | | | |
| Postcode | 4552 | | | | | | | | | | | | | | | | |
| Qualifications | <table><thead><tr><th>Name of qualification</th><th>Date awarded</th></tr></thead><tbody><tr><td>Diploma of Outdoor Recreation</td><td>01/08/201</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></tbody></table> | | | Name of qualification | Date awarded | Diploma of Outdoor Recreation | 01/08/201 | | | | | | | | | | |
| Name of qualification | Date awarded | | | | | | | | | | | | | | | | |
| Diploma of Outdoor Recreation | 01/08/201 | | | | | | | | | | | | | | | | |
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People

Participant/teacher/
volunteer contact
details, medical
records, dietary
requirements and
behavioural issues.

| | | | | |
|-------------|------------|--------|---------|-----------|
| Incidents | Staff | People | Courses | Templates |
| Change view | New Record | Delete | Find | Show All |

Person ID

First name

Last name

DOB

Gender

Home phone

Work phone

Mobile

Fax

Email

Emergency contact

Phone

Classification

Experience in led outdoor activities

Address

Suburb

State

Postcode

Country

PAAA_1002

Tiffany

Peters

20/08/1999

Age

13

☒ Female ☐ Male

07 6666 5423

0423 187 543

Mabel Peters

07 6666 5423

Participant

No prior experience

1 Yellow St

Claymore

QLD

4223

Dietary restrictions

No shellfish

Medications

Prednisone Oral

Pre-existing medical conditions or injuries

None.

Known behavioural

Potential sleepwalker.

Participation

Course times,
locations,
participants and
supervisors.

| Incidents | Staff | People | Courses | Templates |
|-------------|------------|--------|---------|-----------|
| Change view | New Record | Delete | Find | Show All |

| | | | | |
|-------------|------------|-------------------------------------|-------------------|----|
| Template ID | TAAA_1000 | <input type="button" value="View"/> | Participant limit | 20 |
| Course name | Kayaking | | Total limit | 25 |
| Location | Templestow | | | |

| | | |
|-----------------|------------------------|--|
| Course ID | CAAA_1000 | |
| Organisation | | |
| Start date/time | Mon, 22 Apr 2013 10:00 | |
| End date/time | Mon, 22 Apr 2013 15:00 | |
| Course notes | | |

| |
|-----------------|
| Staff |
| GOODE, Alira |
| GOODE, Natassia |
| SALMON, Paul |
| THOMAS, Miles |
| |

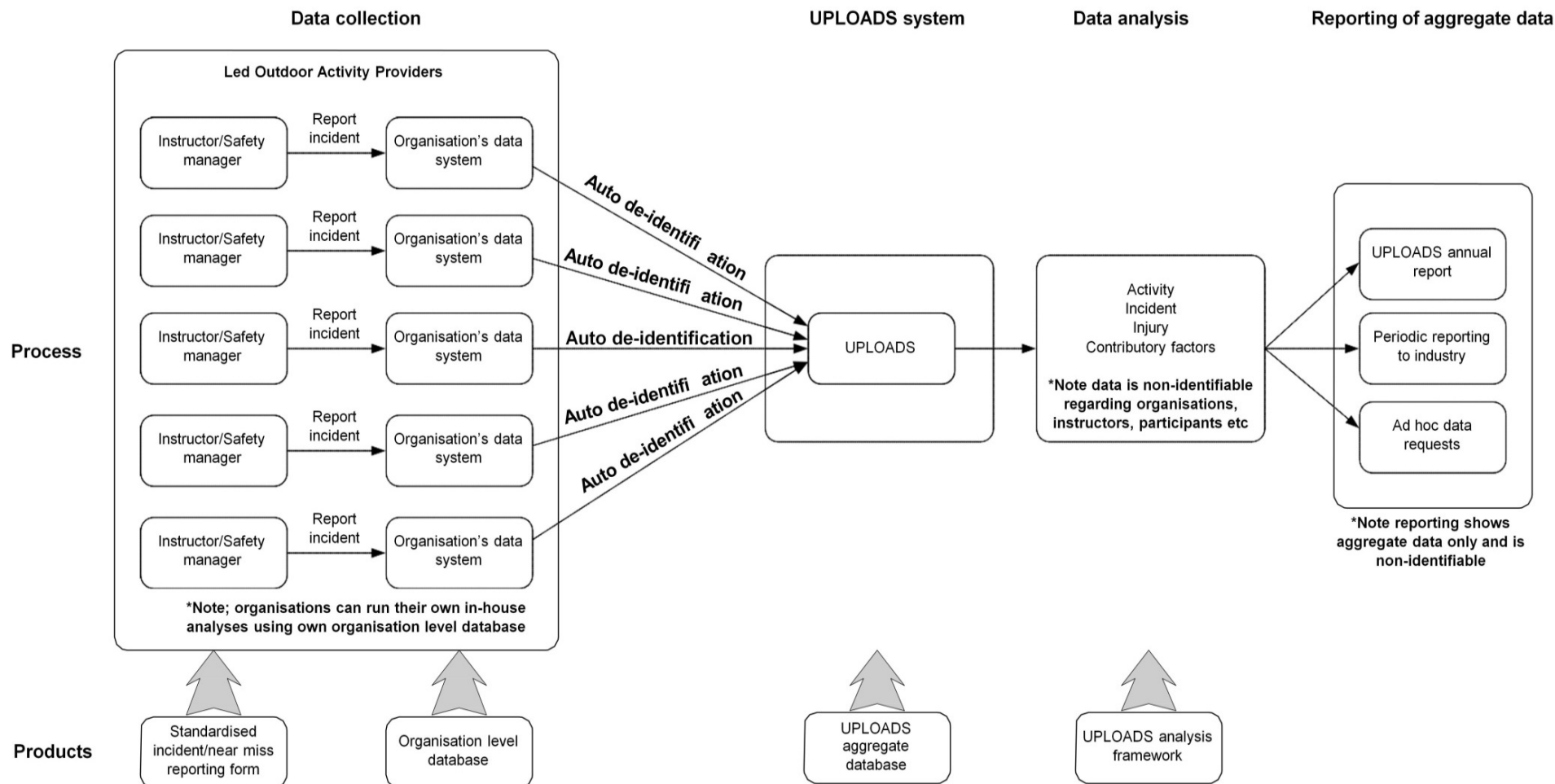
| People | Gen | Age | Emergency contact | Emergency phone |
|------------------|-----|-----|-------------------|-----------------|
| DICKENS, Charles | M | 14 | Emily Dickens | 07 5333 5444 |
| GOODE, Petre | M | 14 | Mark Goode | 07 6666 5544 |
| PETERS, Tiffany | F | 13 | Mabel Peters | 07 6666 5423 |
| | | | | |

Participation data

Activities conducted:

- Number of participants
- Hours of participation
- Days of participation

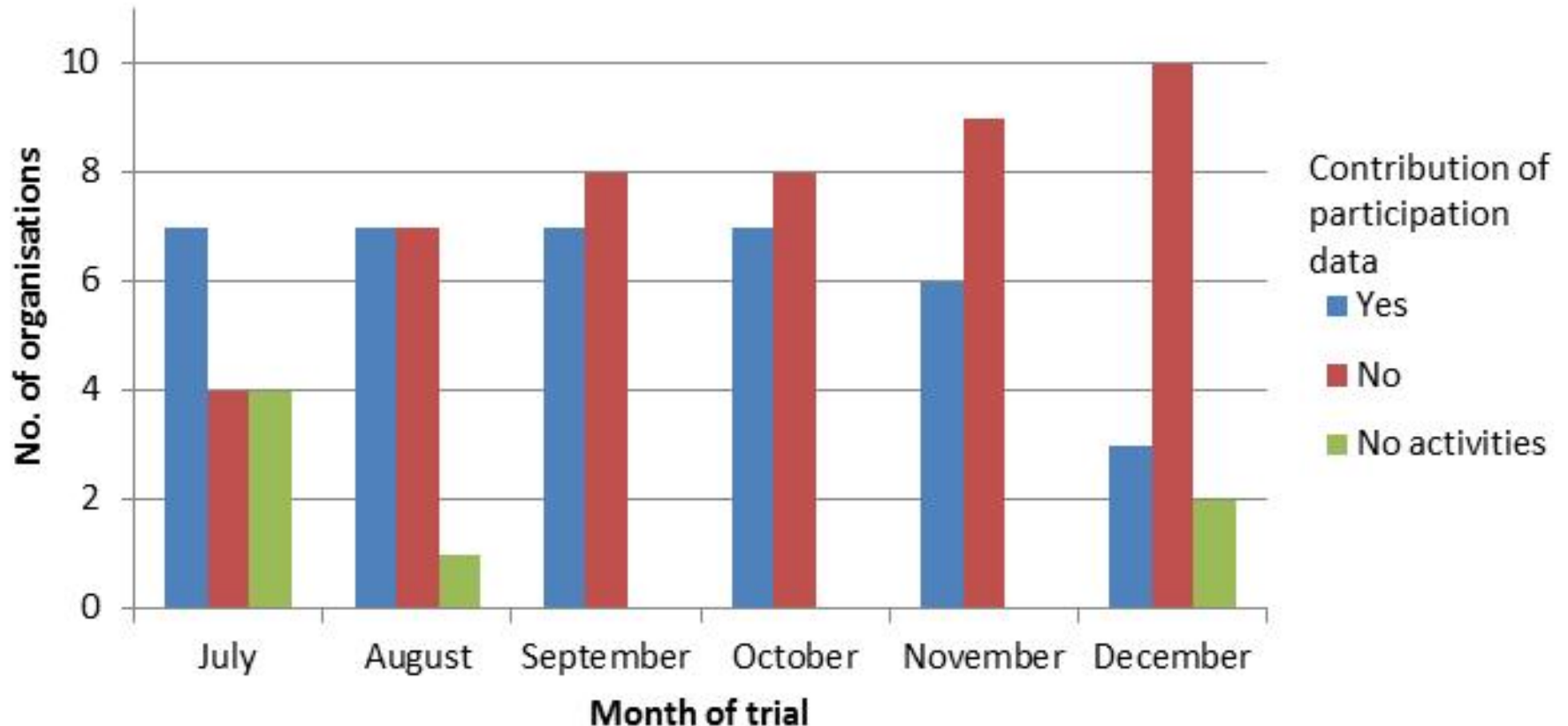
Secure and confidential reporting



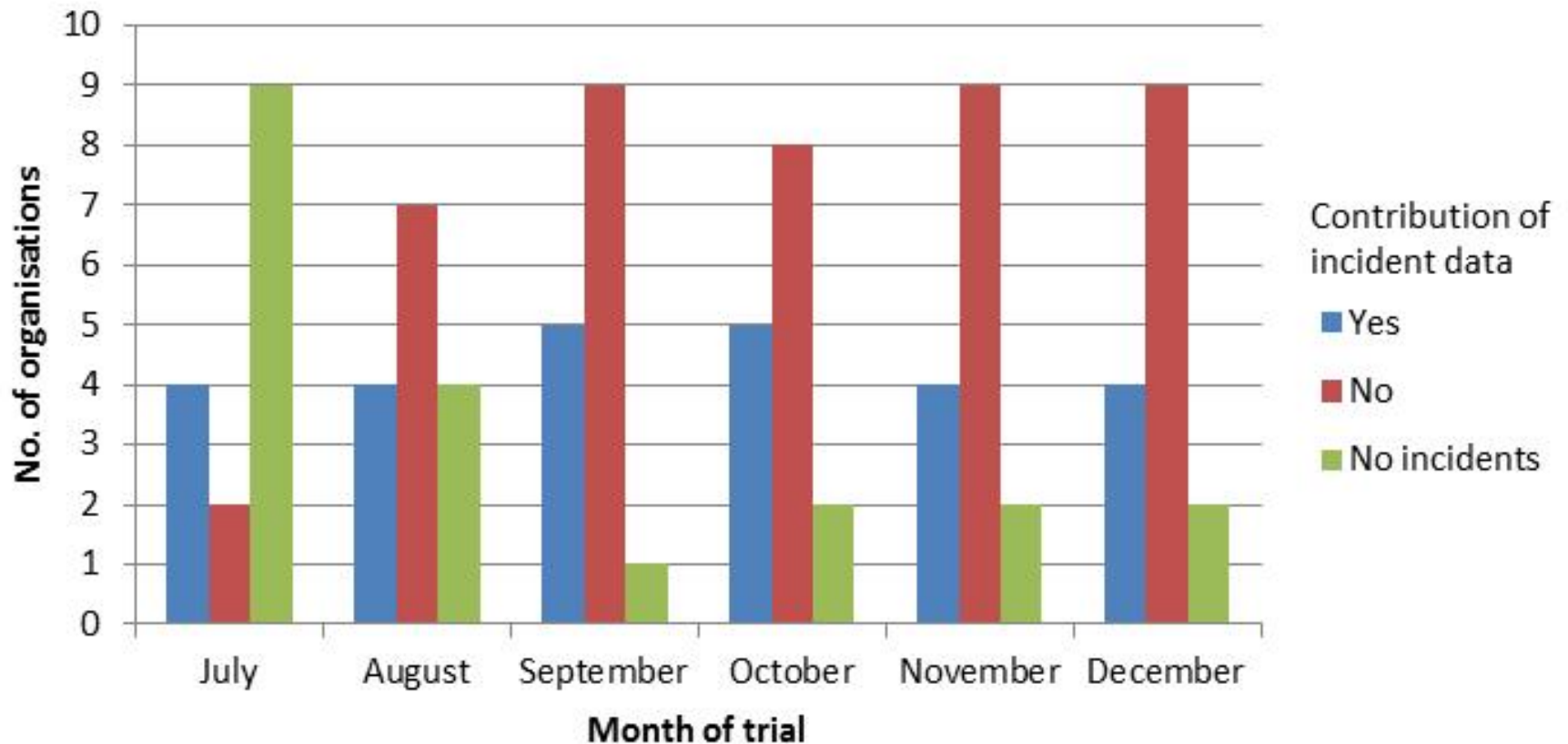
Organisations involved in the trial

- 15 organisations
- NSW = 5, QLD = 4, SA = 1, TAS = 1, VIC = 4, WA = 1
- 5 commercial enterprises, 5 not-for-profits, 2 were schools, 2 were registered training organisations and 1 was from the public sector.
- Number of locations/operating sites (Range = 1 – 7, Mean = 2.85)

Contribution of participation data



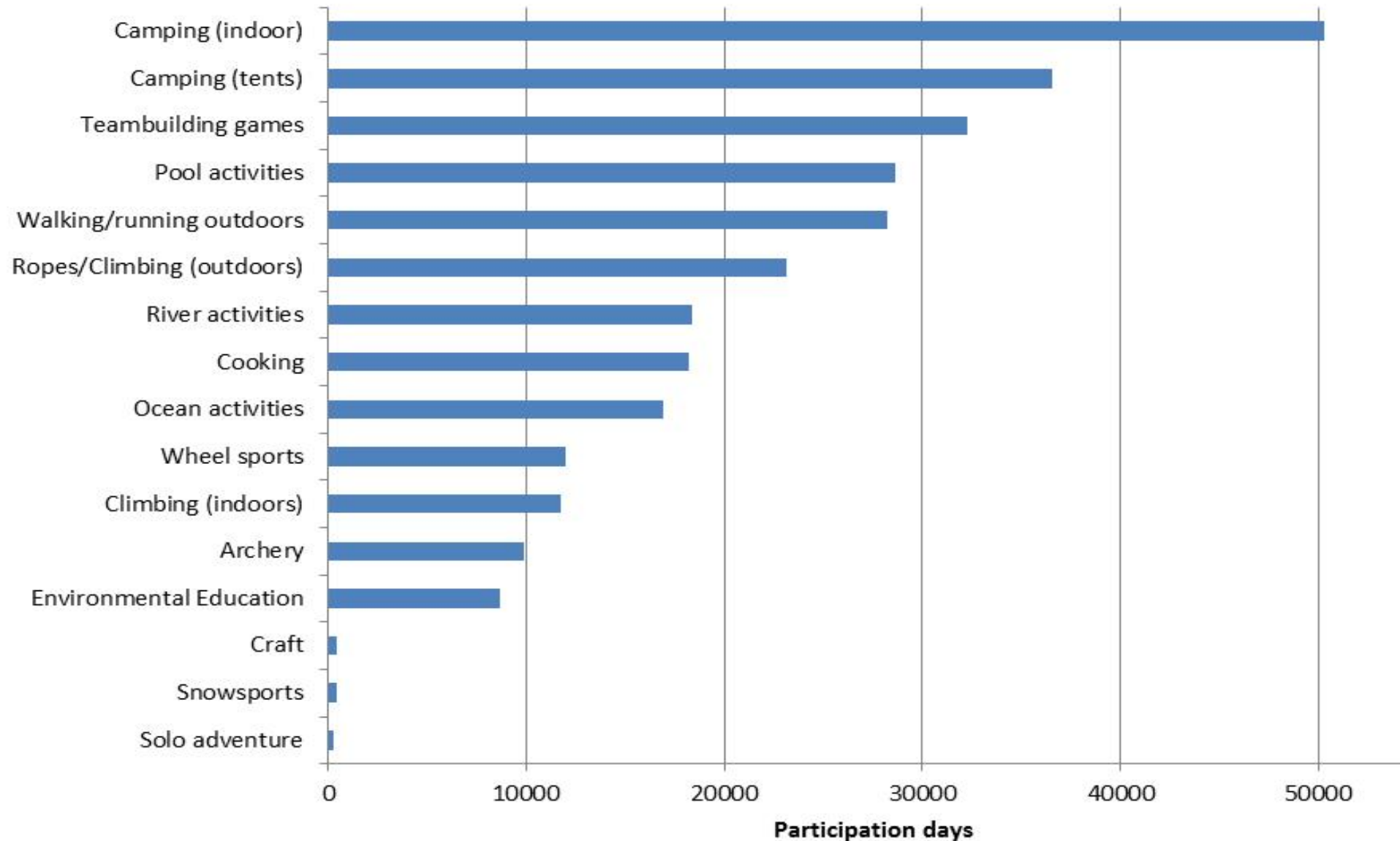
Contribution of incident data



Reasons for not contributing data each month

- Overwhelmed by their workload (n = 2);
- Staff shortages (n = 2);
- Double reporting requirements (n = 1);
- Lacked support from management (n = 1); and
- Technical difficulties (n = 1)

Participation data



Incident data

Detailed data on 184 incidents:

- 157 adverse outcomes (115 injuries, 31 illnesses, 5 social or psychological impacts, 2 cases of equipment damage)
- 25 near misses
- 2 missing classification

Incident severity

Severity rated using the NZ National Incident Database scale (Davidson, 2005) on scale of 1-10.

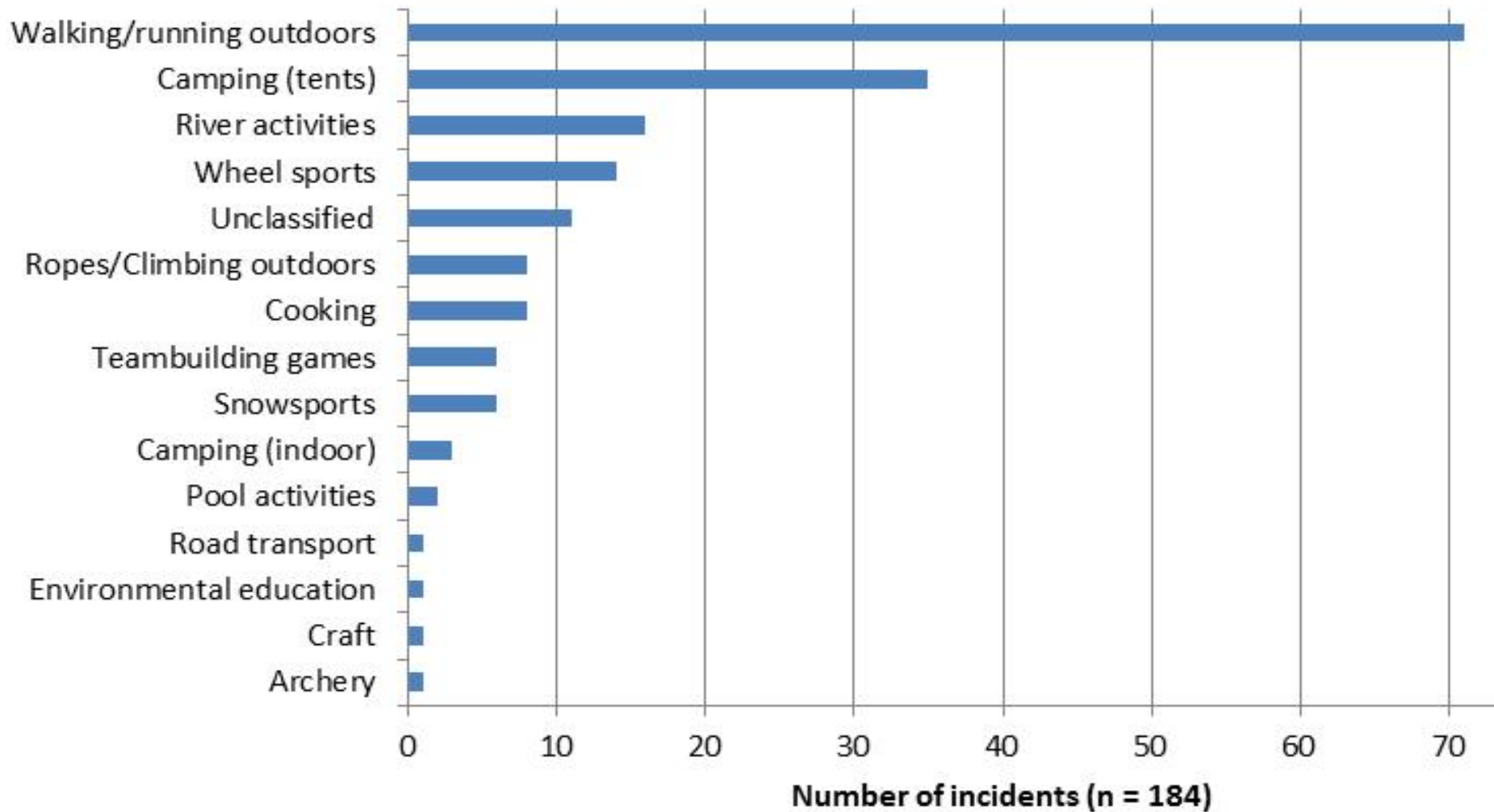
1 = short term impact

10 = multiple fatality

Adverse outcomes $M = 2.89$, $SD = 1.43$ (Actual)

Near misses $M = 5.88$, $SD = 2.86$ (Potential)

Incidents by activity type



Analysis of bushwalking incidents

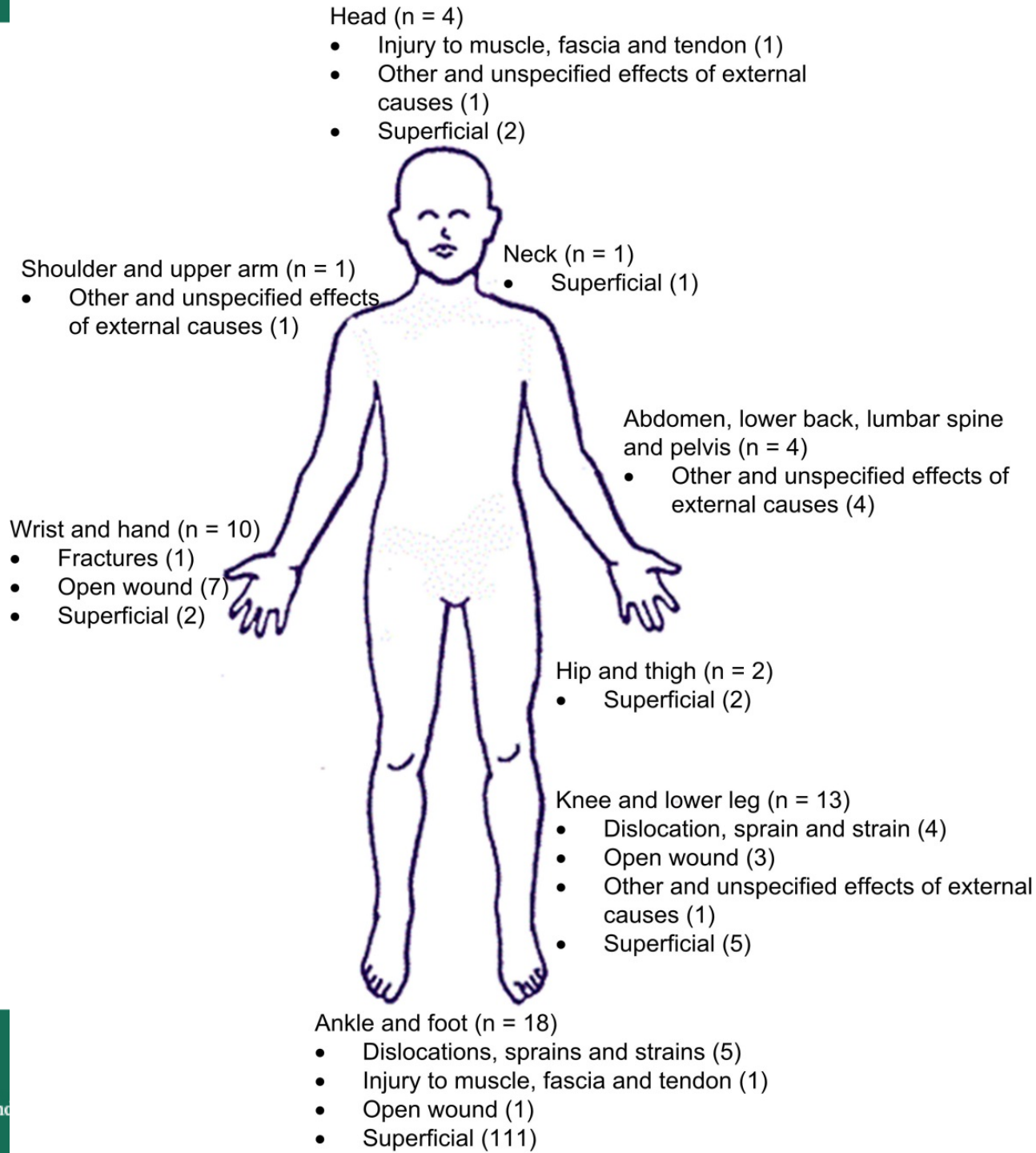
- 2 near misses, 59 injuries, 8 illnesses, and 1 case of equipment damage
- On average, less severe than other incidents.
 - Adverse outcome $M = 2.57$, $SD = 1.27$
 - Near misses $M = 2.67$, $SD = 1.53$

People involved in activity

Total n = 70

- 69 activities involved participants
 - 68 involved instructors
 - 24 involved other supervisory staff
-
- M = 18 participants
 - M = 2 instructors
 - M = 2 other supervisory staff

Injury location and type



Who was injured?

59 injured people:

- 50 female, 7 male, 2 unclassified
- Age $M = 16$ years, $SD = 5.73$, 8 to 41
- 22 participants (37 unclassified)

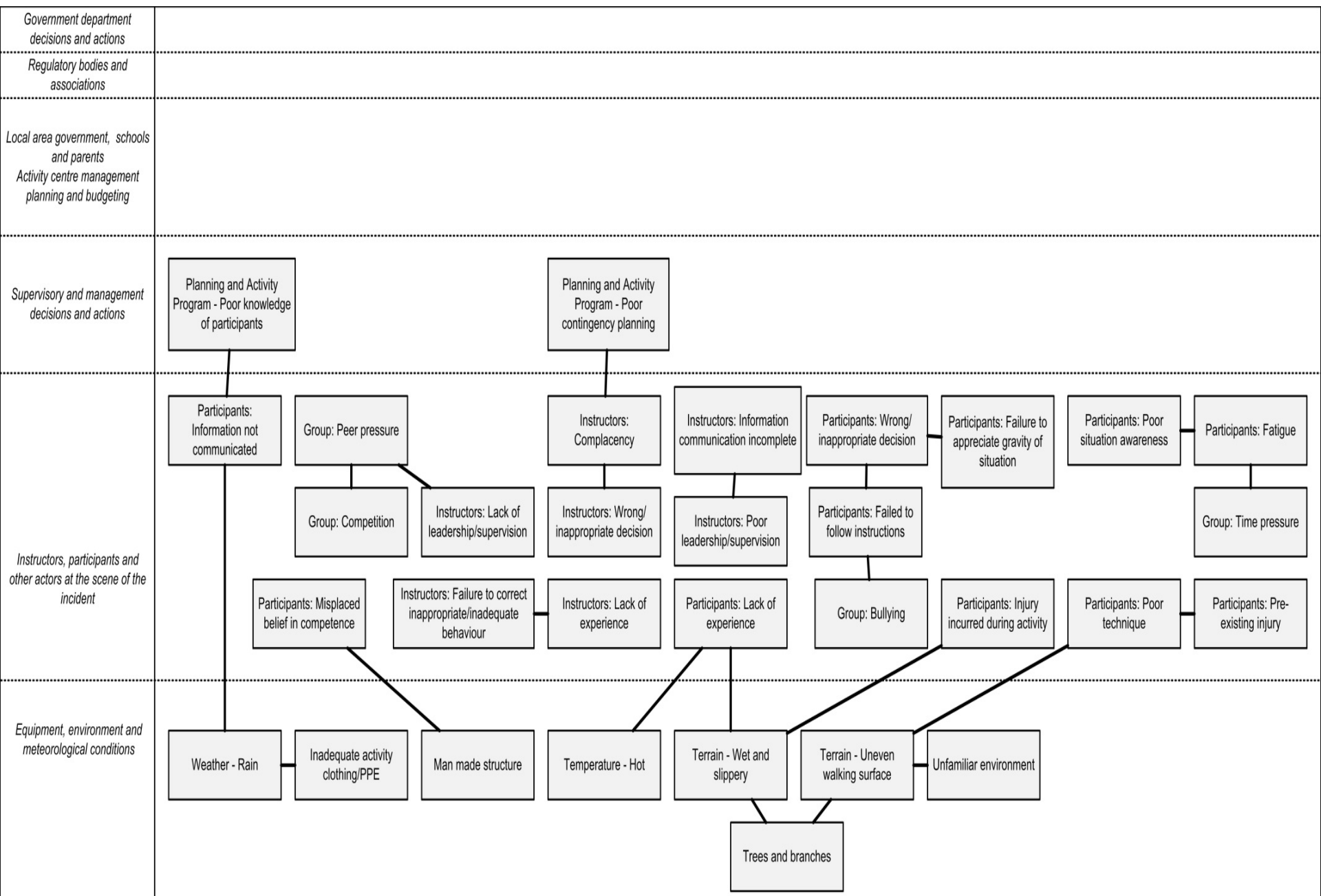
Experience:

- 49 “unknown prior experience”
- 7 “some prior experience”
- 3 unclassified

| | | | | | | | | | |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------|---------------------------------------------------|
| Government department decisions and actions | | | | | | | | | |
| Regulatory bodies and associations | | | | | | | | | |
| Local area government, schools and parents Activity centre management planning and budgeting | Activity centre management: Lack of procedures for activity (1) | Activity centre management: Inadequate risk/hazard management system (1) | Parents - Fail to inform organisers of pre-existing injury (1) | | | | | | |
| Supervisory and management decisions and actions | Planning and Activity Program - Poor contingency planning (1) | Planning and Activity Program - Poor knowledge of participants (1) | Safety management - Poor hazard identification/risk assessment (1) | Staff and Staffing - Allocation of activity to instructor without appropriate experience/competence (1) | Supervisor failed to implement safety systems (1) | | | | |
| Instructors, participants and other actors at the scene of the incident | Group: Bullying (1) | Group: Peer pressure (2) | Instructors: Information communication incomplete (1) | Instructors: Complacency (2) | Instructors: Lack of leadership/supervision (2) | Instructors: Poor situation awareness (3) | Instructors: Wrong/inappropriate action (1) | Participants: Poor technique (2) | Participants: Poor situation awareness (2) |
| | Group: Competition (1) | Group: Poor communications within group (1) | Instructors: Information not communicated (1) | Instructors: Wrong/inappropriate decision (1) | Instructors: Poor leadership/supervision (2) | Instructors: Failed to implement safety systems (1) | Instructors: Unintentional violation (1) | Participants: Intentional violation (1) | Participants: Poor fitness/physical condition (1) |
| | Group: Failed to correct inappropriate behaviour of other group members (1) | Group: Lack of leadership in group (1) | Instructors: Failed to follow procedures (1) | Instructors: Lack of experience (1) | Instructors: Failure to consider hazards/risks in preparation and planning (1) | Instructors: Fail to act (1) | Participants: Information not communicated (2) | Participants: Pre-existing medical condition (2) | Participants: Wrong/inappropriate action (2) |
| | Group: Time pressure (1) | Group: Loss of contact between group and instructor (2) | Instructors: Failure to correct inappropriate/inadequate behaviour (1) | Instructors: Misplaced belief in competence (2) | Instructors: Failure to appreciate gravity of situation (3) | Instructors: Poor technique (1) | Participants: Failed to follow instructions (2) | Participants: Lack of practice (6) | Participants: Cognitive overload (1) |
| | Participants: Wrong/inappropriate decision (2) | Participants: Other (2) | Participants: Illness (4) | Participants: Lack of training (1) | Participants: Lack of experience (9) | Participants: Failure to appreciate gravity of situation (2) | Participants: Injury incurred during activity (1) | Participants: Misplaced belief in competence (4) | Participants: Fatigue (3) |
| | | | | | | | | | Participants: Pre-existing injury (5) |
| Equipment, environment and meteorological conditions | Temperature - Hot (1) | Weather - Rain (1) | Plant hazard (5) | Animals and insects - Bite (4) | Terrain - Wet and slippery (5) | Terrain - Uneven walking surface (9) | Unfamiliar environment (2) | New/unfamiliar equipment (1) | Medication - Other (1) |
| | Humidity (1) | Falling object (1) | Man made structure (1) | Trees and branches (5) | Terrain - Other (1) | Animal/insect hazard (3) | Terrain - Rocky (1) | Inadequate activity clothing/PPE (2) | |

Most frequent factors

- Uneven terrain (9)
- Wet and slippery terrain (9)
- Participants: lack of practice (6)
- Plant hazard (5)
- Participants: pre-existing injury (5)



Key lessons learnt

- Collection of 184 detailed reports justifies the potential usefulness of the national database
- Some organisations do not run enough activities or have enough incidents to analyse trends
- Difficult to report “participation hours”
- No set way activity programs/courses are run
- High staff turnover
- Minimal IT infrastructure

Other activities to evaluate UPLOADS

Usability evaluation study:

- 26 outdoor education/recreation experts
- 15 human factors/injury surveillance experts

Coding reliability study:

- 14 outdoor education provider code 10 detailed incident reports

Redevelopment

- UPLOADS Software Tool and UPLOADS Lite
- Software tool hopefully more user-friendly!!!
- UPLOADS Software Tool now only tracks incident and participation data
- Analysis tools have been redeveloped to run in a web browser
- Instructions embedded within the software tool

Thank you!

For more details contact:

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