

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



**University of the Sunshine Coast**  
Accident Research (USCAR)

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# This project is proudly supported by:



**Australian Government**  
**Australian Research Council**



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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



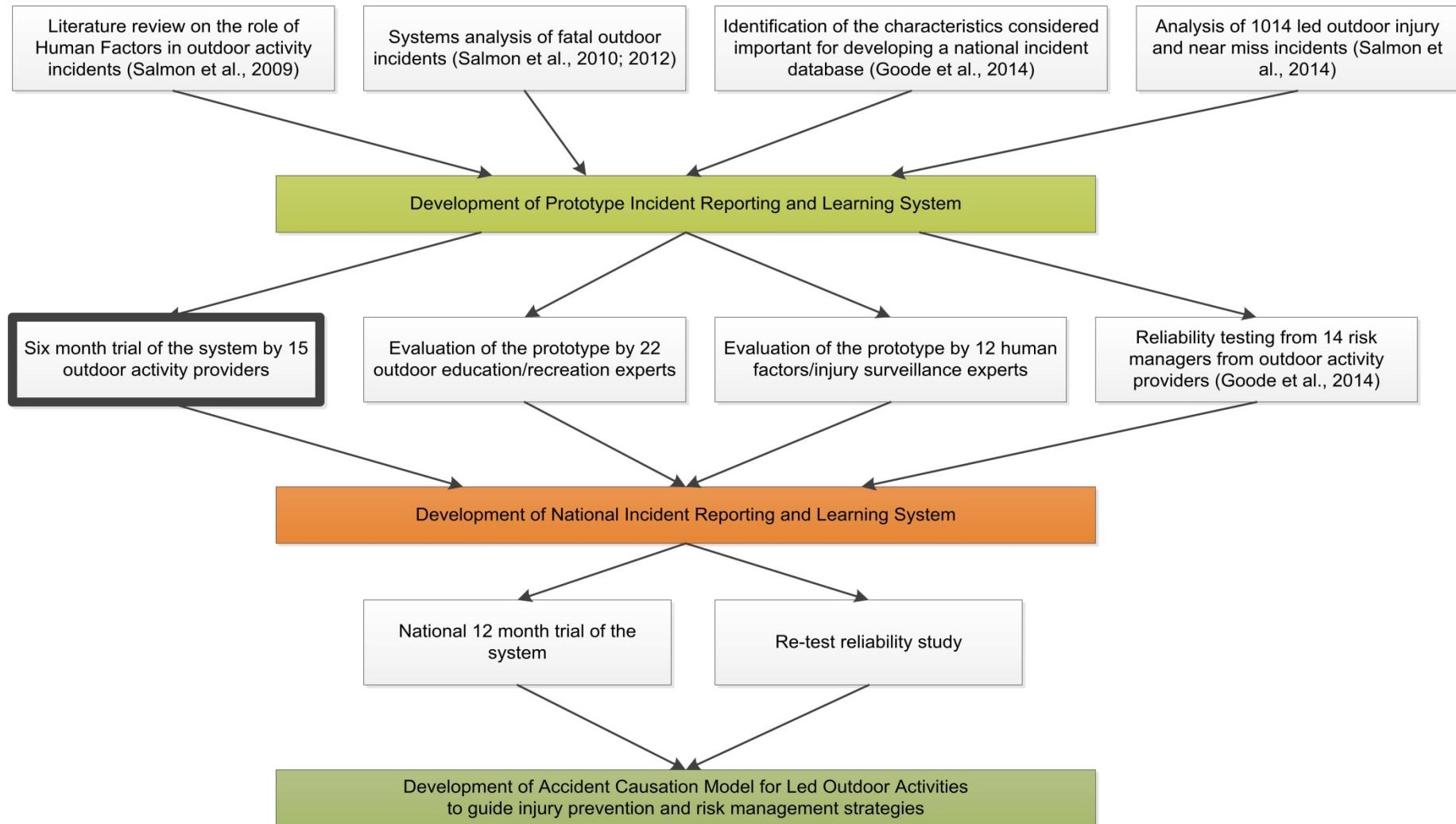
# Benefits - organisations

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
<a href="#">Change view</a>	<a href="#">New Record</a>	<a href="#">Delete</a>	<a href="#">Find</a>	<a href="#">Show All</a>

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	Name of qualification	Date awarded	
	Diploma of Outdoor Recreation	01/08/2011	

# People

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

Incidents	Staff	People	Courses	Templates																																																																																															
<a href="#">Change view</a>	<a href="#">New Record</a>	<a href="#">Delete</a>	<a href="#">Find</a>	<a href="#">Show All</a>																																																																																															
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# Participation

Course times,  
locations,  
participants and  
supervisors.

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

Template ID	TAAA_1000	View	Participant limit	20
Course name	Kayaking		Total limit	25
Location	Templestow			
Course ID	CAAA_1000		Staff	
Organisation			GOODE, Alira	
Start date/time	Mon, 22 Apr 2013	10:00	GOODE, Natassia	
End date/time	Mon, 22 Apr 2013	15:00	SALMON, Paul	
Course notes			THOMAS, Miles	

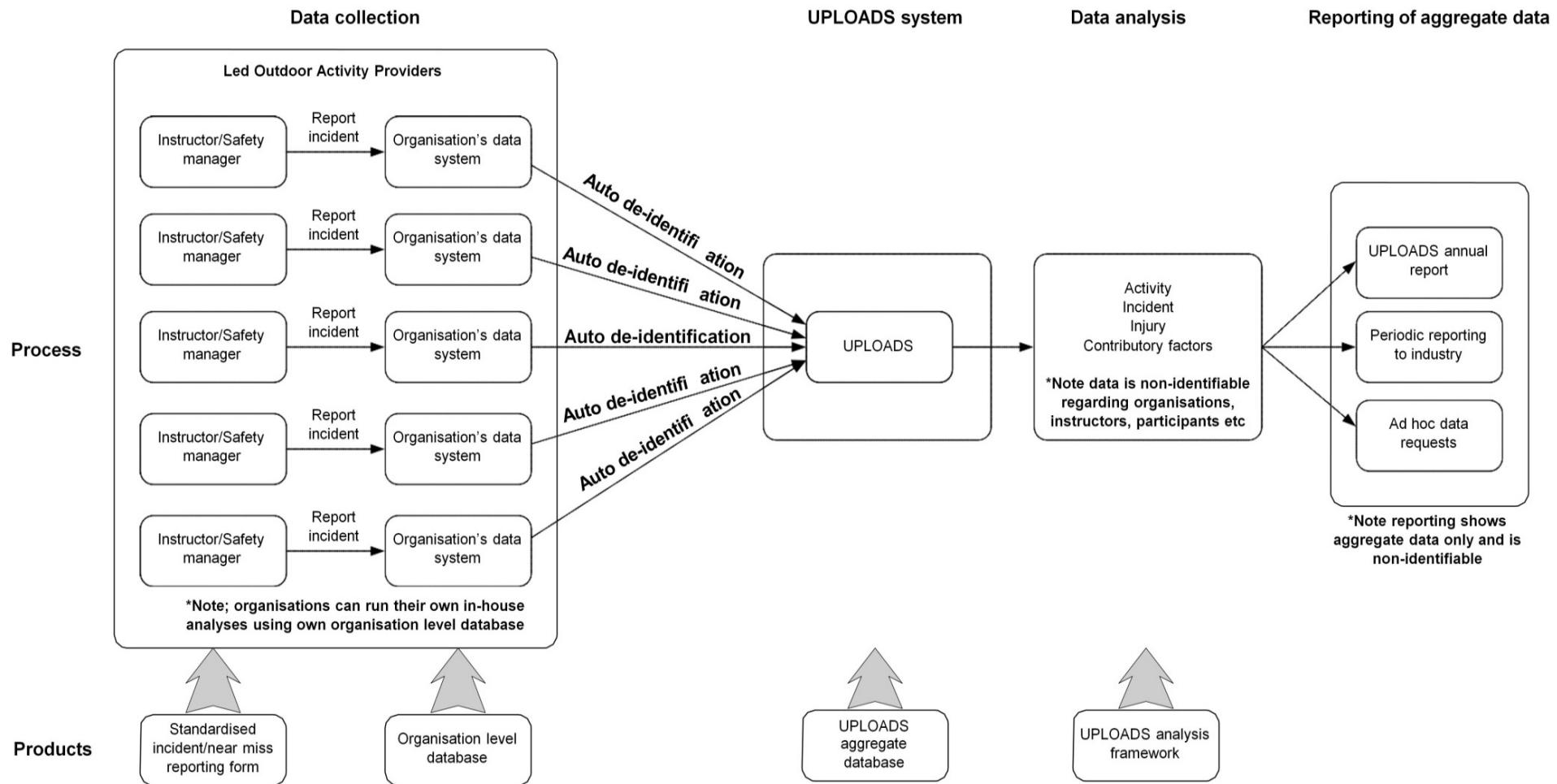
People	Gen	Age	Emergency contact	Emergency phone
DICKENS, Charles	M	14	Emily Dickens	07 5333 5444
GOODE, Petre	M	14	Mark Goode	07 6666 5544
PETERS, Tiffany	F	13	Mabel Peters	07 6666 5423

# Participation data

Activities conducted:

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

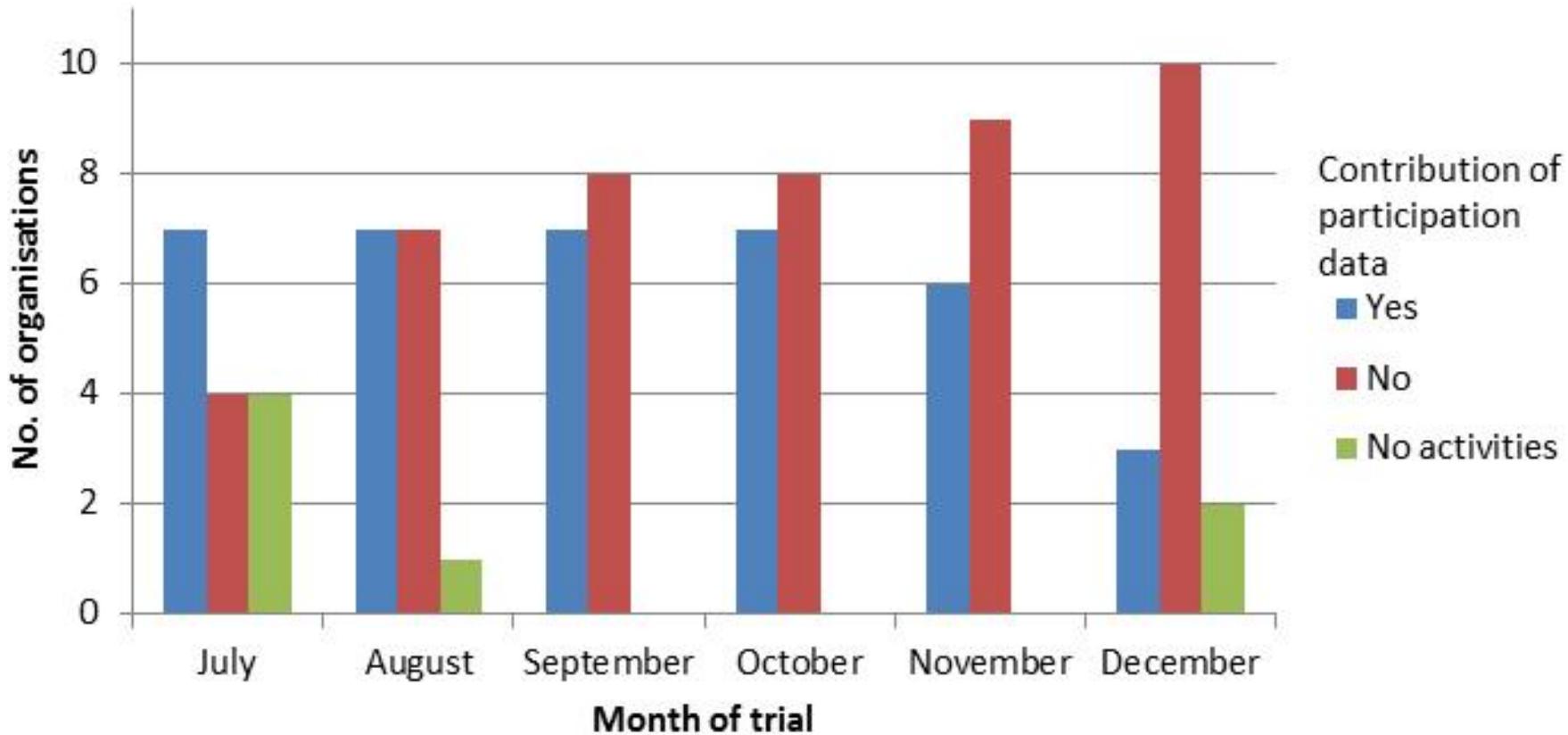
# Secure and confidential reporting



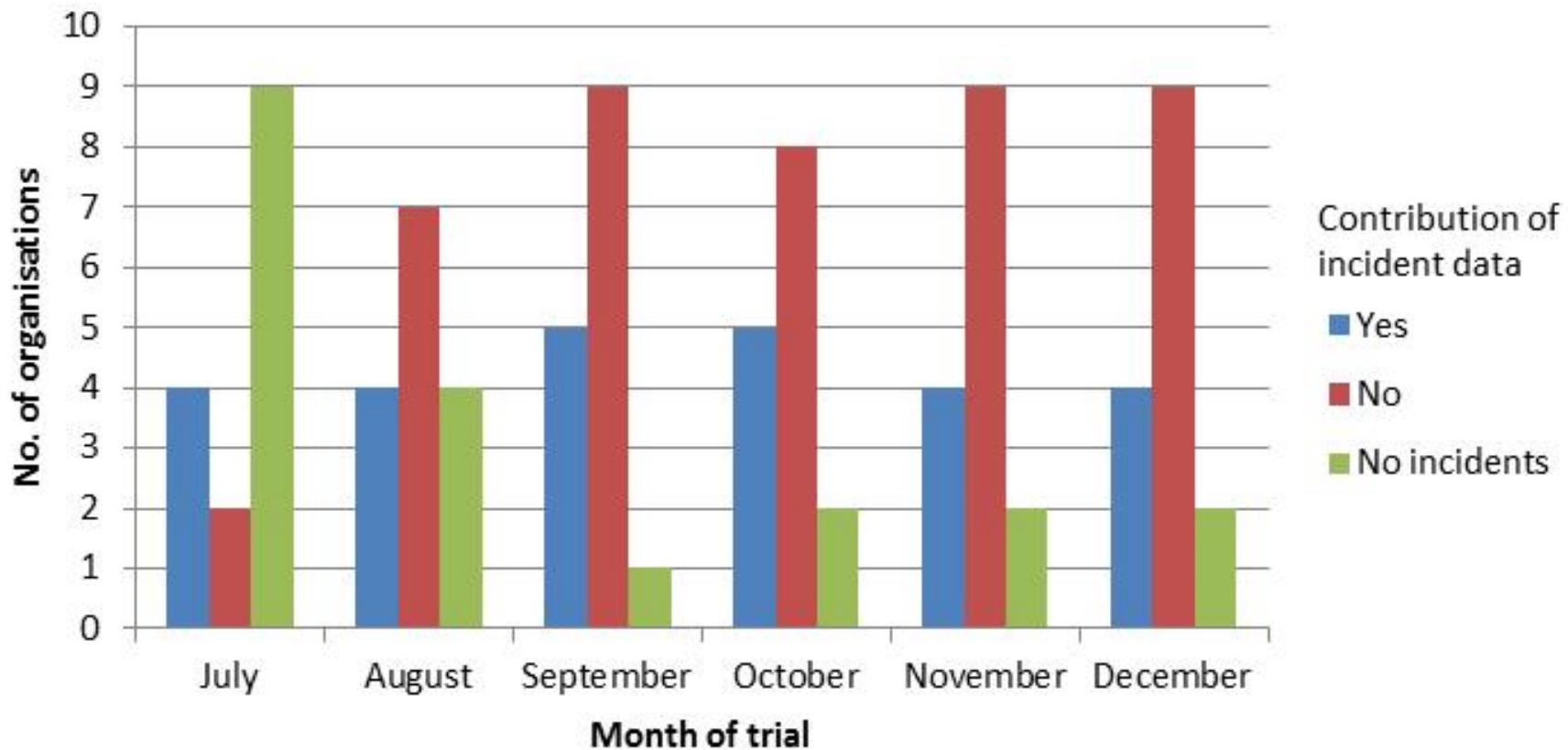
# Organisations involved in the trial

- 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



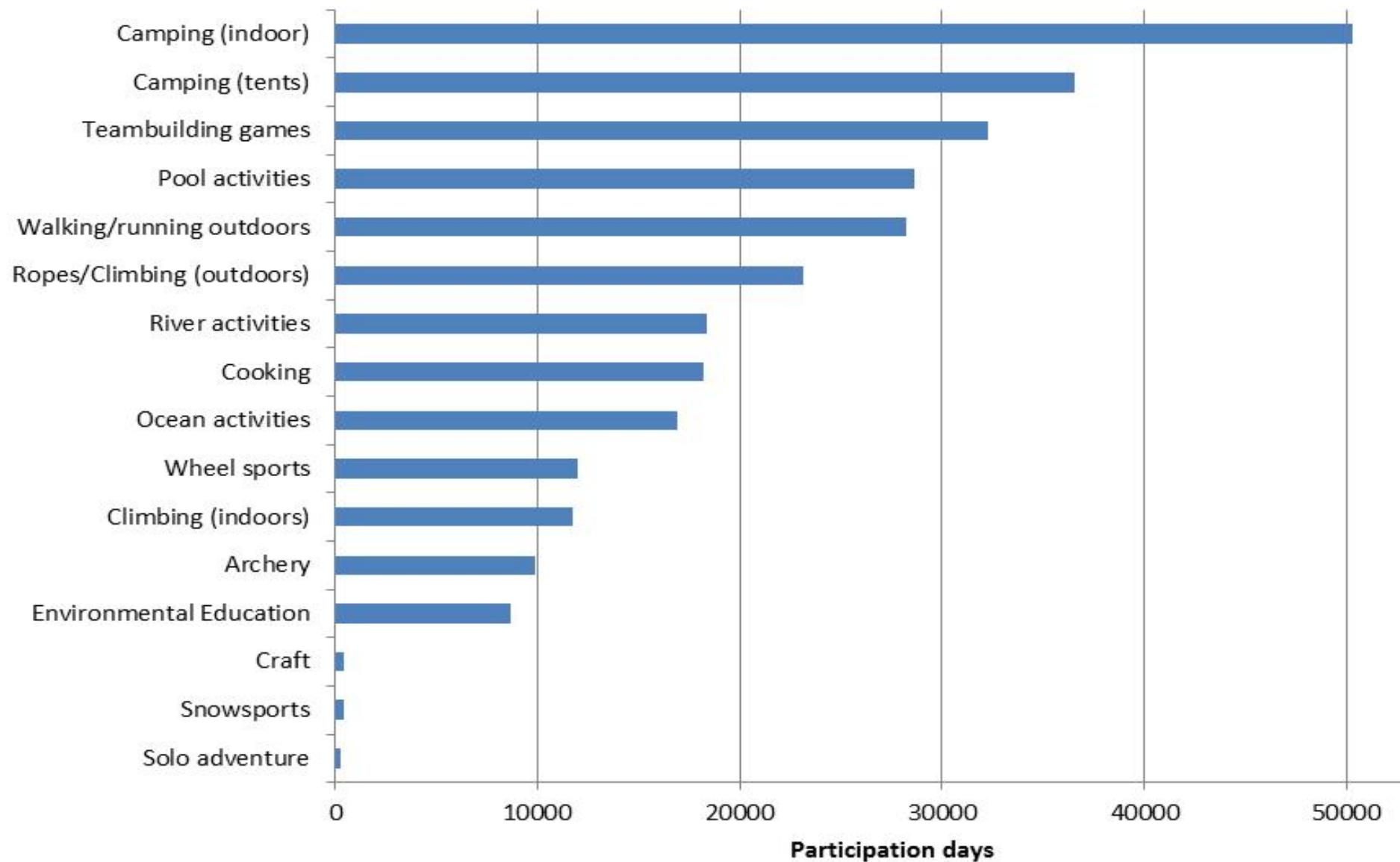
# Contribution of incident data



# 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.

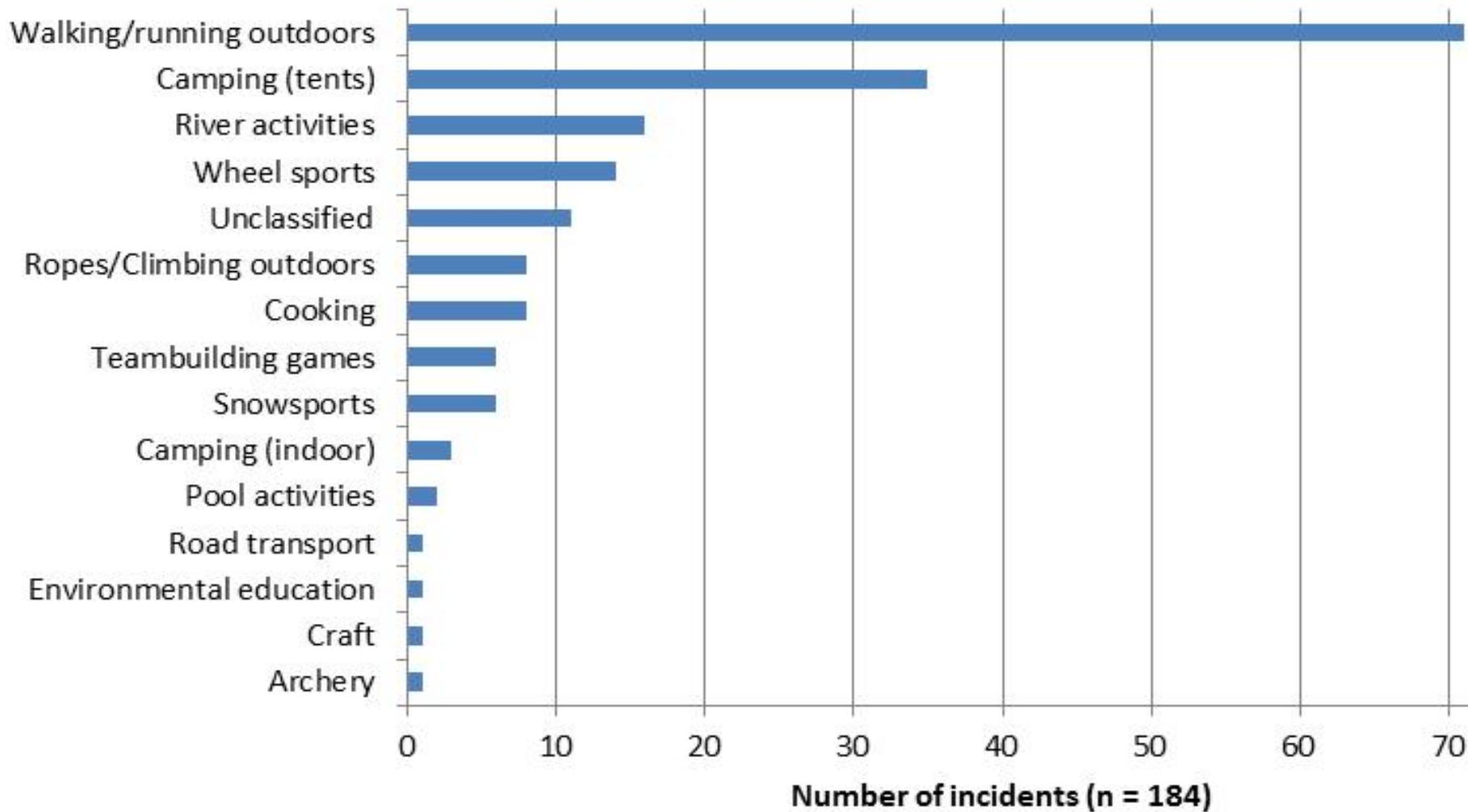
1 = short term impact

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

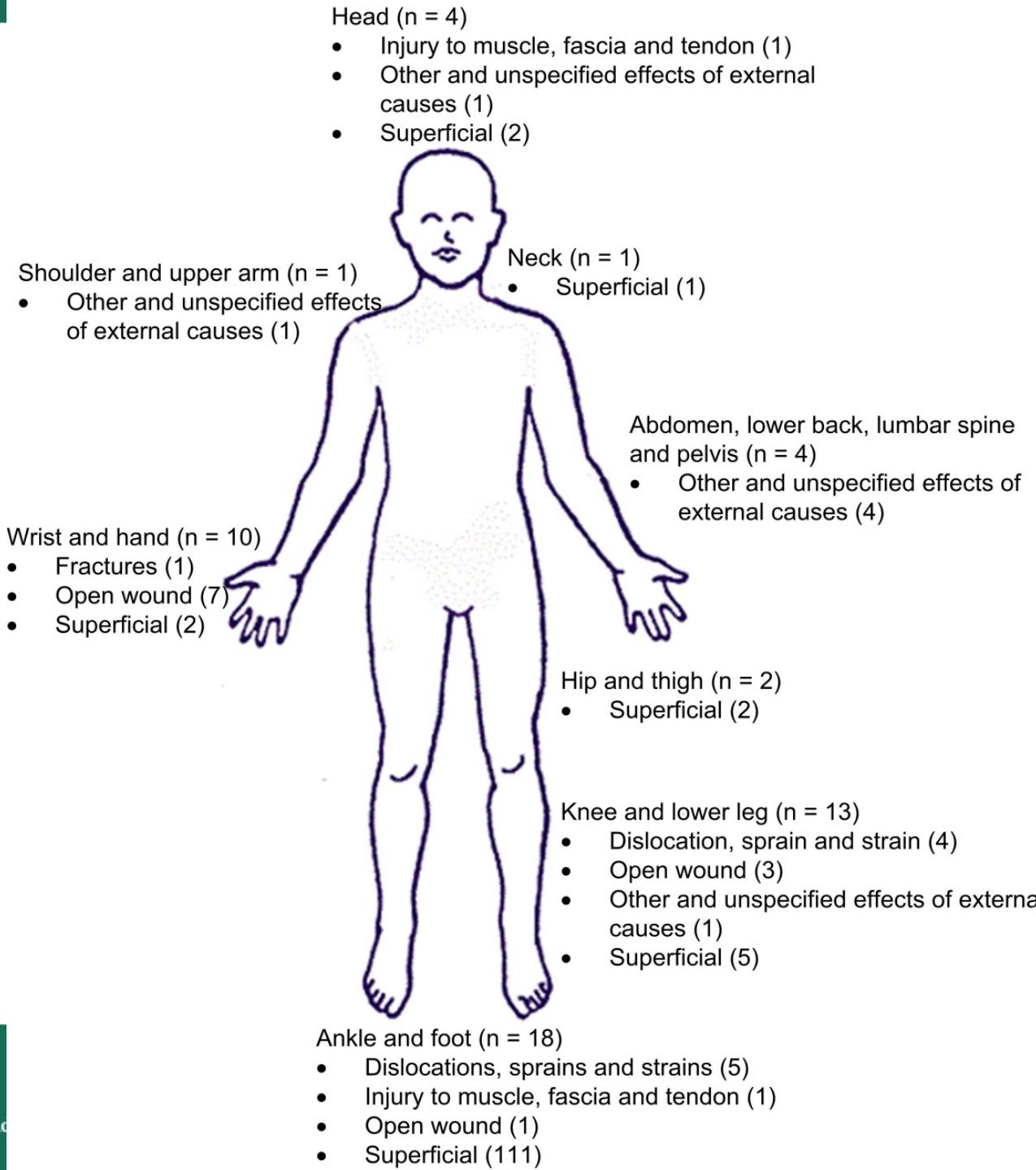
Total n = 70

- 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)

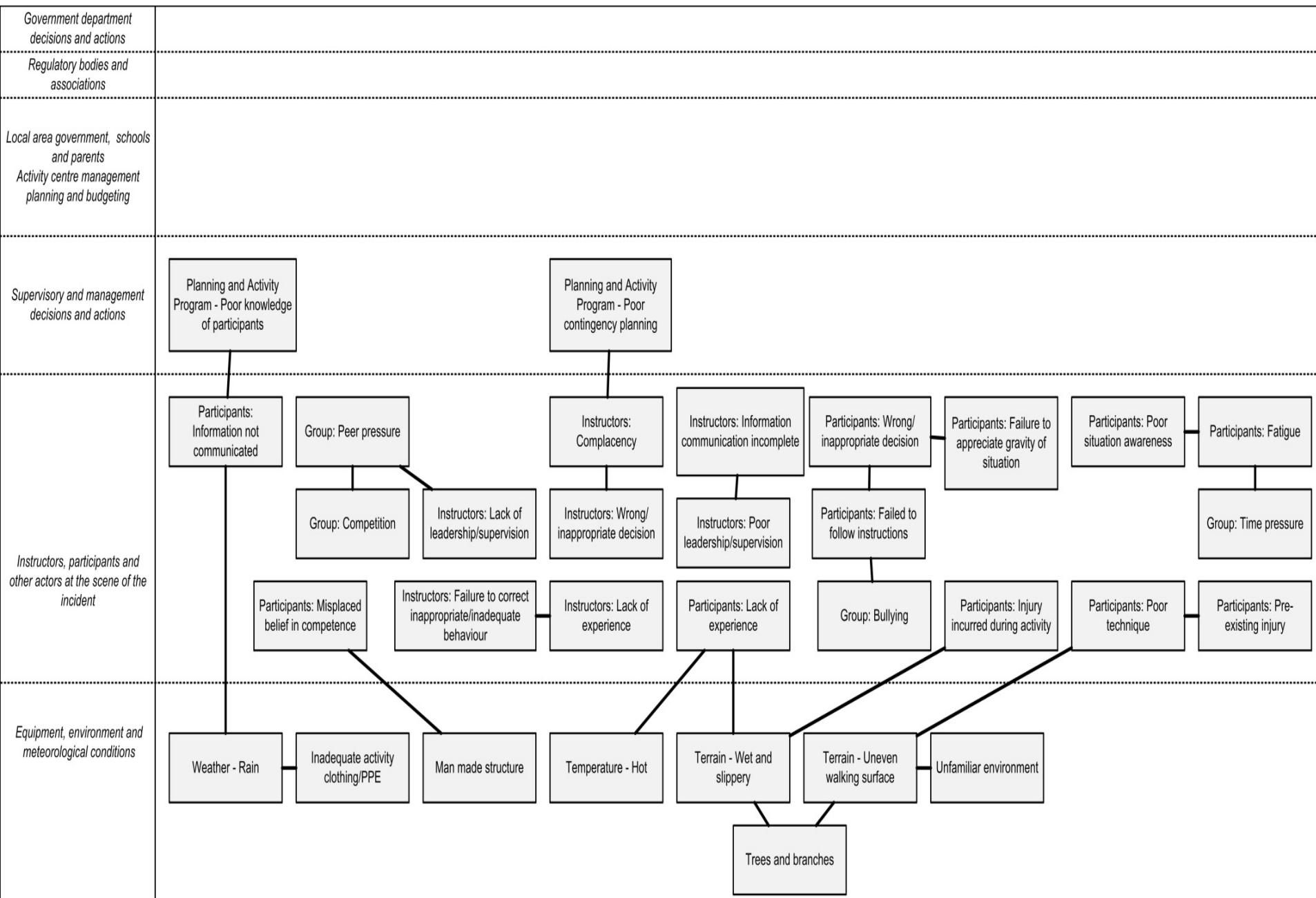
Experience:

- 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: Lack of procedures for activity (1)					Activity centre management: Inadequate risk/hazard management system (1)			
Activity centre management planning and budgeting	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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