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State of the Field: Using Comparative Risk Management Data to Benchmark your Program

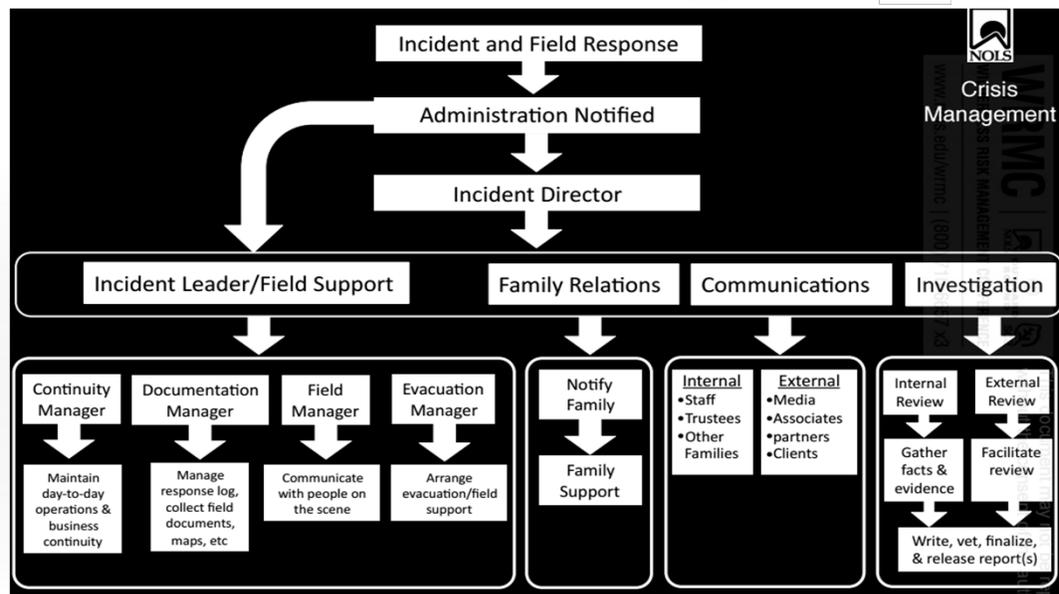JIM SIBTHORP, LISA MEERTS-BRANDSMA, SHANNON ROCHELLE, & DREW LEEMON

THE UNIVERSITY OF UTAH

NOLS

1) Have a comprehensive suite of strategies to work with

Policies and Procedures

Emergency Action Plan   Instructor Judgment

Formal Wilderness Medical Training

Ratios of Field Staff to Participants   Course Debriefings

Internal Review of Safety Management Protocol External Safety Review

Internal Incident Reporting and Review   Supervision of Field Staff

Psychological Stress Discussion   Field Staff Training

Supervision of Participants   Field Staff Screening

Mentoring Apprenticeship

Participant Screening   Pre Course Communication

External Incident Review Participant Training

Course Documentation

1) Have a well developed crisis management plan

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1) Have a well developed staff recruiting and training system

Timeline

▶ 2002-2003 First Risk Management Study

▶ 3 round Delphi Panel for relevant Hazards, Strategies

▶ Industry Survey

2016 –time to update.
What has changed?

University of Utah/National Outdoor Leadership School
Wilderness Risk Management 2016 Survey

Please check the **primary strategies** that your organization used during the 2015 field season to manage the risks associated with the given program hazard. (Primary refers to those strategies that are central to your current approach to this hazard's risks rather than *all* strategies that might be applied.)

1. Hazard: Risk Inherent in the Program Activity Itself
　　Ex. Climbing, boating, ropes course, etc.

☐ Field Staff Screening
☐ Field Staff Training
☐ Participant Screening
☐ Supervision of Participants
☐ Policies and Procedures
☐ External Incident Review
☐ Course Documentation
☐ Formal Wilderness Medicine Training Requirement of Staff
☐ Field Staff (Instructor) Judgment
☐ Pre-Course Communication
☐ Ratios of Field Staff to Participants

☐ Psychological Stress Discussion
☐ Internal Review of Safety Management Protocol
☐ Course Debriefings
☐ Mentoring & Apprenticeship
☐ Supervision of Field Staff
☐ Participant Training
☐ Emergency Action Plan
☐ Internal Incident Reporting and Review
☐ External Review of Safety Management Protocol
☐ Venue Evaluation or Location Scouting

Other (please specify)

2 / 16　　13%

Prev　　Next

WRMC, AORE, AEE, WEA: 333 Valid Responses

Cluster 1: **Camps and Campus Recreation**. ~1/3 of the sample
▶ More recreational-oriented missions
▶ Less field staff experience
▶ More open participant selection
▶ Less remote operating areas

Cluster 2: **Large Outdoor Expeditionary Programs** (OEPs) like NOLS and OB, ~44% of the sample
▶ Longer duration staff trainings
▶ Greater years of operation
▶ More experienced field instructors
▶ Operate in more remote terrain
▶ Report more field days (they are bigger)

Cluster 3: **Guiding**. 14.4% of the sample.
▶ Shorter staff training
▶ More experienced field staff
▶ More recreational programming
▶ More remote field sites
▶ More restrictive insurance

Cluster 4: **Therapeutic Programs**. ~8.5% of the sample.
▶ A more therapeutic-oriented mission
▶ Longer staff training
▶ A larger number of field days
▶ A more selective process for enrollment (participant selection)
▶ A lower student to instructor ratio

Overall Ranks

1: Field Staff Training

2: Policies and Procedures

3: Field Staff (Instructor) Judgment

4: Supervision of Participants

5: Field Staff Screening

6: Pre-Course Communication

7: Ratios of Field Staff to Participants

8: Formal Wilderness Medical Training

9: Supervision of Field Staff

10: Course Debriefings

11: Participant Training

12: Internal Incident Reporting and Review

13: Mentoring & Apprenticeship

14: Emergency Action Plan

15: Participant Screening

16: Course Documentation

17: Internal Review of Safety Management Protocol

18: Venue Evaluation or Location Scouting

18: Venue Evaluation or Location Scouting

19: Psychological Stress Discussion

20: External Incident Review

21: External Safety Review

The strategies that vary the most by cluster:

Cluster 1, **Camps and Campus Recreation** use:

▶ Less participant screening

▶ Less participant training

▶ This group uses the fewest number of risk management strategies overall

Cluster 2, **Large OEPs** use:

▶ More course documentation

▶ More course debriefs

▶ More internal safety reviews (on-going)

▶ More internal incident review/reporting (after an incident)

▶ More emergency action plans

▶ This group uses the largest number of risk management strategies overall

Cluster 3, **Guides** use:

▶ Less staff training

▶ More staff screening

Cluster 4, **Therapeutic Programs** use:

▶ A greater reliance on apprenticeship/mentoring

▶ Less emergency action planning

▶ More staff supervision

▶ More external incident reviews

▶ More psychological stress debriefings

2003	2015 (all)	2016 (essential)[1]	Anticipated 2017*
Field Staff Training (75.1%)	Field Staff Training (78.4%)	Field Staff Training[2]	Field Staff Training
Policies and Procedures (73.3%)	Policies and Procedures (69.6%)	Policies and Procedures[2]	Policies and Procedures
Field Staff (Instructor) Judgment (73%)	Field Staff (Instructor) Judgment (65.3%)	Field Staff (instructor) Judgment[2]	Field Staff (instructor) Judgment
Supervision of Participants (62%)	Supervision of Participants (45.9%)	Wilderness Medicine Training[3]	Wilderness Medicine Training
Pre-Course Communication (57.1%)	Pre-Course Communication (42.9%)	Pre-Course Communication[2]	Pre-Course Communication

Implications, Questions, & Discussion

University of Utah/NOLS Wilderness Risk Management Survey Results, 2016

Jim Sibthorp, Lisa Meerts-Brandsma, Shannon Rochelle, and Drew Leemon

The overall purpose of this study was to better understand how different outdoor expeditionary programs (OEPs; defined as 2 or more nights in the field) manage field-based hazards. We had conducted a similar study in 2003 and wanted to update and compare the results. The assumption is that different programs employ risk management strategies differently and that programs should be aware of how their own approaches to risk management compare to wider cross-sections of the industry. To inform this purpose, we segmented OEPs into four clusters, compared strategies across these clusters, and compared our findings from 2003 to the 2016 data. A summary of these data and the subsequent analyses is presented below for WRMC attendees.

Program clusters were formed from the 333 responses to allow comparisons across program types. While there are some difference, these clusters are largely similar in how they manage risks.

Cluster 1 was labeled **camps and campus recreation**. They represent about 1/3 of the sample and are characterized by: a) more recreational-oriented missions, b) less field staff experience, c) more open participant selection, and d) less remote operating areas.

Cluster 2 was labeled **large outdoor expeditionary programs** (OEPs) like NOLS and OB, and represents about 44% of the sample. This cluster is characterized by: a) longer duration staff trainings, b) greater years of operation, c) more experienced field instructors, d) operate in more remote terrain, and e) report more field days (they are bigger).

Cluster 3 was labeled **guiding**. This cluster represents about 14.4% of the sample. This cluster is characterized by: a) shorter staff training, b) more experienced field staff, c) more recreational programming, d) more remote field sites, and e) more restrictive insurance.

Cluster 4 was labeled **therapeutic programs**. These represent 8.5% of the sample. This cluster is characterized by: a) a more therapeutic-oriented mission, b) longer staff training, c) a larger number of field days, d) a more selective process for enrollment (participant selection), and e) a lower student to instructor ratio

Our primary objective was to compare risk management strategies by these clusters. Organizations that fit clearly in one cluster or another might find cluster-based comparisons more useful than comparing to the overall average. To determine which strategies are most used by each cluster, we have tabulated the overall reliance of each strategy across the content area of the 13 hazards. That is, the specific hazards themselves are not of direct interest in this analysis. They represent context areas for study participants to consider how they manage risks. By collapsing across these areas, we get a better idea of how reliant each organization is on specific risk management strategies. This organizational reliance is then averaged for each cluster (or group) above. This process gives us a profile of how each cluster, and the organizations as a whole, manage their risks. A graph of these data are below in the attached figure.

In general, the most relied on strategies are: a) Staff Training, b) Policies and Procedures, c) Instructor/Field Staff Judgment, d) Participant Supervision, and e) Staff Screening.

The least relied on strategies are: a) External Safety Reviews (ongoing as part of, for example, accreditation), b) External Incident Reviews (after an incident), c) Psychological Stress Debriefings, d) Venue and Location Scouting, e) Internal Safety Reviews.

Some strategies did vary by cluster. Cluster 1, **Camps and Campus Recreation** use: a) less participant screening, b) less participant training, and c) the fewest number of risk management strategies overall. Cluster 2, **Large OEPs** use: a) more course documentation, b) more course debriefs, c) more internal safety reviews (on-going), d) more internal incident review/reporting (after an incident), e) more emergency action plans, and f) the largest number of risk management strategies overall. Cluster 3, **Guides** use: a) less staff training and b) more staff screening. Cluster 4, **Therapeutic**

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Programs use: a greater reliance on apprenticeship/mentoring, b) less emergency action planning, c) more staff supervision, d) more external incident reviews, and e) more psychological stress debriefings.

Survey respondents reported their programs offer the following: 89% backpack, 71% climb, 70% paddle, 59% offer winter sports, 45% raft, 37% mountaineer, and 16% sail. Other reported disciplines included cycling, trapping, caving, SUP, surfing, high ropes, horse-packing, canyoneering, primitive skills, trail maintenance, dog sledding, scuba, and cultural immersion.

Participants ranked in order what they perceive as the most concerning hazards: (1) ways to deal with risk inherent in the program activity itself; (2) the environment; (3) driving/transportation; (4) lack of participant supervision; and (5) staff performance. This is in contrast to 2003, when participants reported being most concerned with (1) driving/transportation; (2) staff training; and (3) participant-related concerns, such as behavior and supervision.

Table 1. Five most common risk-management strategies by year

2003	2015 (all)	2016 (essential)[1]	Anticipated 2017*
Field Staff Training **(75.1%)**	Field Staff Training **(78.4%)**	Field Staff Training[2]	Field Staff Training
Policies and Procedures **(73.3%)**	Policies and Procedures **(69.6%)**	Policies and Procedures[2]	Policies and Procedures
Field Staff (Instructor) Judgment **(73%)**	Field Staff (Instructor) Judgment **(65.3%)**	Field Staff (instructor) Judgment[2]	Field Staff (instructor) Judgment
Supervision of Participants **(62%)**	Supervision of Participants **(45.9%)**	Wilderness Medicine Training[3]	Wilderness Medicine Training
Pre-Course Communication **(57.1%)**	Pre-Course Communication **(42.9%)**	Pre-Course Communication[2]	Pre-Course Communication

Notes: 1) reported in top 5 by respondents who used 10 or fewer strategies (n = 31). 2) Reported in top 5 for respondents who used each strategy at least once (n = 28). 3) Remained in top 10 for latter group.

Figure 1: Common Risk Management Strategies by Cluster

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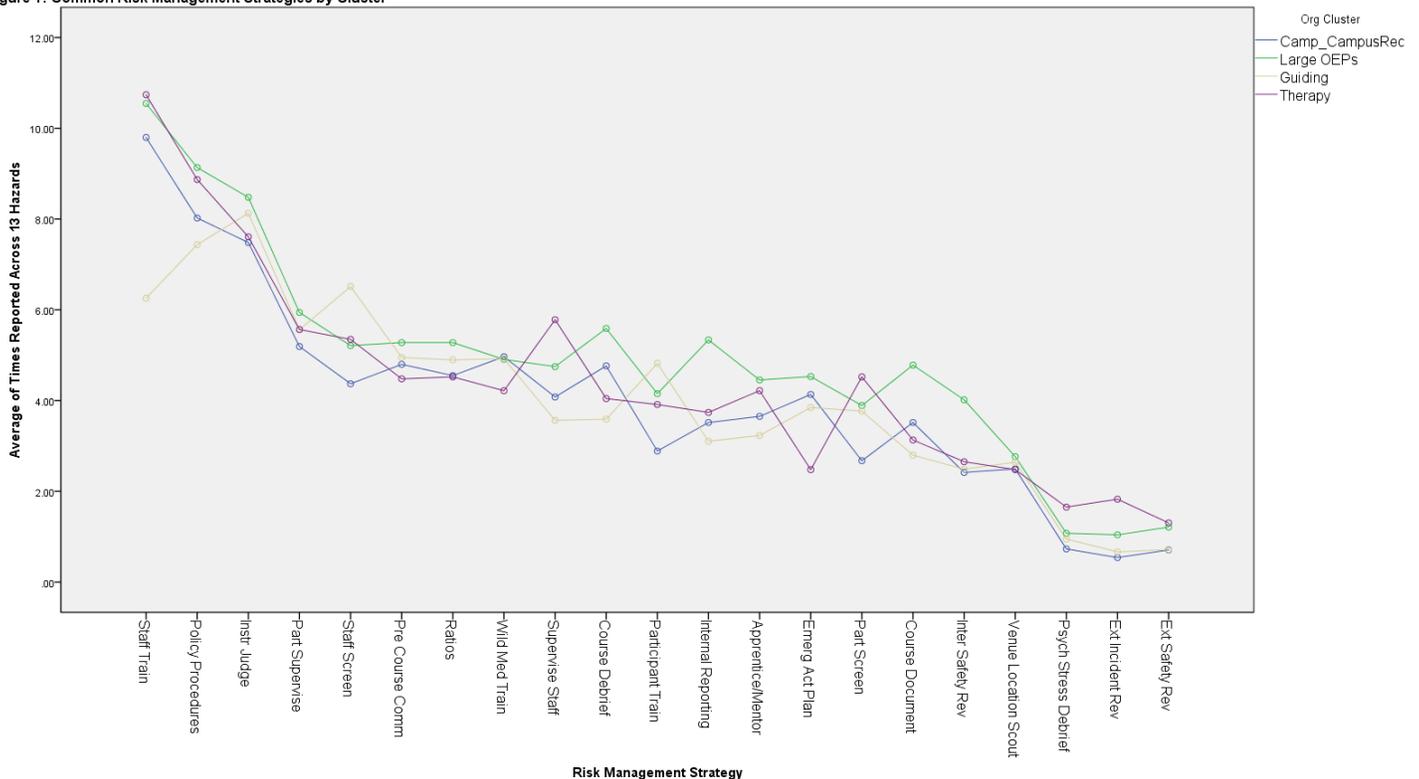
Risk Inherent in the Activity	
Field Staff Training	83.5%
Policies and Procedures	82.3%
Supervision of Participants	77.5%
Formal Wilderness Medical Training	75.1%
Field Staff (Instructor) Judgment	75.1%
Ratios of Field Staff to Participants	74.5%
Emergency Action Plan	64.9%
Pre-Course Communication	57.7%
Field Staff Screening	56.8%
Course Debriefings	55.6%
Internal Incident Reporting and Review	51.4%
Venue Evaluation or Location Scouting	50.2%
Participant Screening	48.3%
Mentoring & Apprenticeship	43.8%
Course Documentation	42.9%
Participant Training	42.3%
Internal Review of Safety Management Protocol	39.9%
Supervision of Field Staff	37.5%
External Safety Review	14.1%
External Incident Review	12.3%
Psychological Stress Discussion	9.3%

Environment	
Field Staff (Instructor) Judgment	77.5%
Policies and Procedures	71.8%
Field Staff Training	71.2%
Supervision of Participants	62.2%
Formal Wilderness Medical Training	59.5%
Venue Evaluation or Location Scouting	58%
Emergency Action Plan	56.5%
Ratios of Field Staff to Participants	52.3%
Pre-Course Communication	51.4%
Course Debriefings	39.9%
Participant Training	37.8%
Course Documentation	36.3%
Field Staff Screening	35.4%
Internal Incident Reporting and Review	35.4%
Mentoring & Apprenticeship	30.3%
Internal Review of Safety Management Protocol	30%
Supervision of Field Staff	30%
Participant Screening	26.1%
External Safety Review	10.5%
External Incident Review	8.7%
Psychological Stress Discussion	7.2%

Driving Transportation	
Policies and Procedures	80.5%
Field Staff Training	71.5%
Field Staff Screening	57.4%
Field Staff (Instructor) Judgment	46.5%
Emergency Action Plan	39.6%
Internal Incident Reporting and Review	34.2%
Internal Review of Safety Management Protocol	33%
Supervision of Field Staff	25.2%
Pre-Course Communication	20.4%
Ratios of Field Staff to Participants	19.8%
Venue Evaluation or Location Scouting	17.7%
Course Documentation	17.1%
Supervision of Participants	14.1%
Course Debriefings	14.1%
Formal Wilderness Medical Training	13.8%
Mentoring & Apprenticeship	11.7%
External Safety Review	11.7%
External Incident Review	9.6%
Participant Training	6.9%
Participant Screening	5.4%
Psychological Stress Discussion	2.7%

Participant Behavior	
Supervision of Participants	78.4%
Field Staff (Instructor) Judgment	69.1%
Policies and Procedures	68.5%
Field Staff Training	68.2%
Ratios of Field Staff to Participants	68.2%
Participant Screening	64%
Pre-Course Communication	55.9%
Course Debriefings	49.2%
Participant Training	40.5%
Course Documentation	39%
Mentoring & Apprenticeship	35.1%
Internal Incident Reporting and Review	35.1%
Field Staff Screening	27.6%
Supervision of Field Staff	26.4%
Emergency Action Plan	26.4%
Formal Wilderness Medical Training	25.8%
Psychological Stress Discussion	24.9%
Internal Review of Safety Management Protocol	23.1%
Venue Evaluation or Location Scouting	10.5%
External Incident Review	7.2%
External Safety Review	5.4%

Staff Performance	
Field Staff Training	87.4%
Field Staff Screening	78.1%
Supervision of Field Staff	64.6%
Policies and Procedures	63.7%
Field Staff (Instructor) Judgment	62.2%
Mentoring & Apprenticeship	60.4%
Course Debriefings	56.5%
Formal Wilderness Medical Training	53.5%
Internal Incident Reporting and Review	39.9%
Pre-Course Communication	39.6%
Ratios of Field Staff to Participants	38.7%
Course Documentation	36.3%
Internal Review of Safety Management Protocol	25.2%
Emergency Action Plan	23.4%
Venue Evaluation or Location Scouting	14.7%
Psychological Stress Discussion	12.6%
Supervision of Participants	9.9%
External Safety Review	9%
Participant Screening	7.8%
Participant Training	7.8%
External Incident Review	6.6%

Medical Management	
Formal Wilderness Medical Training	90.1%
Field Staff Training	74.5%
Emergency Action Plan	68.8%
Policies and Procedures	64.9%
Field Staff (Instructor) Judgment	58.9%
Participant Screening	48.3%
Internal Incident Reporting and Review	46.8%
Pre-Course Communication	36.6%
Supervision of Participants	36.3%
Internal Review of Safety Management Protocol	35.7%
Field Staff Screening	34.8%
Ratios of Field Staff to Participants	34.8%
Course Documentation	33.9%
Course Debriefings	33.6%
Supervision of Field Staff	26.1%
Mentoring & Apprenticeship	18.6%
Venue Evaluation or Location Scouting	17.4%
Participant Training	16.8%
External Safety Review	12.6%
Psychological Stress Discussion	12%
External Incident Review	8.4%

Lack of Participant Supervision	
Policies and Procedures	64.6%
Field Staff (Instructor) Judgment	62.8%
Field Staff Training	56.8%
Supervision of Participants	48.3%
Ratios of Field Staff to Participants	48%
Participant Training	43.5%
Pre-Course Communication	43.2%
Participant Screening	38.1%
Course Debriefings	28.5%
Emergency Action Plan	27.6%
Internal Incident Reporting and Review	26.4%
Course Documentation	24.6%
Internal Review of Safety Management Protocol	21.9%
Venue Evaluation or Location Scouting	21.9%
Mentoring & Apprenticeship	21.3%
Field Staff Screening	20.7%
Supervision of Field Staff	19.2%
Formal Wilderness Medical Training	16.5%
Psychological Stress Discussion	6.3%
External Safety Review	6%
External Incident Review	4.5%

Poor Instruction	
Field Staff Training	78.4%
Supervision of Field Staff	59.5%
Mentoring & Apprenticeship	54.7%
Course Debriefings	53.8%
Field Staff Screening	53.2%
Policies and Procedures	53.2%
Field Staff (Instructor) Judgment	48.6%
Course Documentation	39.9%
Pre-Course Communication	37.2%
Internal Incident Reporting and Review	36.3%
Ratios of Field Staff to Participants	30.6%
Internal Review of Safety Management Protocol	22.2%
Formal Wilderness Medical Training	21.9%
Emergency Action Plan	16.5%
Supervision of Participants	12.9%
Participant Training	9.6%
Venue Evaluation or Location Scouting	9.3%
Participant Screening	8.7%
External Incident Review	8.4%
External Safety Review	5.4%
Psychological Stress Discussion	4.2%

Equipment Malfunction	
Field Staff Training	64.3%
Policies and Procedures	59.5%
Field Staff (Instructor) Judgment	58.6%
Internal Incident Reporting and Review	39.3%
Course Debriefings	37.5%
Course Documentation	33%
Internal Review of Safety Management Protocol	27.6%
Emergency Action Plan	25.5%
Participant Training	21.9%
Supervision of Field Staff	20.4%
Supervision of Participants	19.5%
Pre-Course Communication	19.5%
Mentoring & Apprenticeship	16.2%
Venue Evaluation or Location Scouting	12.3%
Field Staff Screening	11.7%
Ratios of Field Staff to Participants	10.8%
Formal Wilderness Medical Training	10.5%
External Safety Review	10.5%
External Incident Review	8.7%
Participant Screening	5.7%
Psychological Stress Discussion	2.1%

Staff to Participant Interaction	
Field Staff Training	82%
Policies and Procedures	76.6%
Field Staff Screening	66.1%
Field Staff (Instructor) Judgment	53.8%
Supervision of Field Staff	51.7%
Ratios of Field Staff to Participants	46.8%
Course Debriefings	39.9%
Supervision of Participants	38.7%
Internal Incident Reporting and Review	35.7%
Mentoring & Apprenticeship	35.4%
Pre-Course Communication	30.3%
Course Documentation	25.5%
Participant Screening	24%
Internal Review of Safety Management Protocol	22.8%
Participant Training	17.7%
Emergency Action Plan	13.8%
External Incident Review	9.9%
Psychological Stress Discussion	9.9%
Formal Wilderness Medical Training	8.4%
External Safety Review	7.8%
Venue Evaluation or Location Scouting	4.2%

Public Interactions	
Field Staff Training	71.5%
Field Staff (Instructor) Judgment	67.3%
Policies and Procedures	65.8%
Pre-Course Communication	34.8%
Supervision of Participants	33.6%
Course Debriefings	32.7%
Supervision of Field Staff	31.5%
Course Documentation	30.6%
Emergency Action Plan	27.3%
Internal Incident Reporting and Review	24.6%
Field Staff Screening	24.3%
Participant Training	24.3%
Venue Evaluation or Location Scouting	24%
Mentoring & Apprenticeship	21.9%
Internal Review of Safety Management Protocol	17.7%
Ratios of Field Staff to Participants	17.4%
Participant Screening	12.6%
Formal Wilderness Medical Training	9.6%
External Safety Review	6.6%
External Incident Review	6%
Psychological Stress Discussion	2.7%

Poor Nutrition and Dehydration	
Field Staff Training	78.4%
Supervision of Participants	70.6%
Field Staff (Instructor) Judgment	68.8%
Formal Wilderness Medical Training	58.9%
Participant Training	56.5%
Pre-Course Communication	49.2%
Policies and Procedures	48.3%
Participant Screening	38.1%
Course Debriefings	33%
Ratios of Field Staff to Participants	29.4%
Internal Incident Reporting and Review	27.9%
Supervision of Field Staff	27.3%
Course Documentation	24.3%
Mentoring & Apprenticeship	24.3%
Emergency Action Plan	24.3%
Field Staff Screening	22.2%
Internal Review of Safety Management Protocol	19.8%
Venue Evaluation or Location Scouting	9.6%
Psychological Stress Discussion	7.8%
External Safety Review	5.4%
External Incident Review	4.5%

Inadequate Hygiene	
Field Staff Training	75.4%
Supervision of Participants	64.9%
Participant Training	62.2%
Field Staff (Instructor) Judgment	59.2%
Policies and Procedures	48.3%
Formal Wilderness Medical Training	40.5%
Pre-Course Communication	37.8%
Course Debriefings	26.4%
Mentoring & Apprenticeship	26.4%
Ratios of Field Staff to Participants	24.9%
Supervision of Field Staff	24.9%
Participant Screening	22.5%
Course Documentation	20.7%
Internal Incident Reporting and Review	20.7%
Field Staff Screening	18.3%
Internal Review of Safety Management Protocol	12.9%
Emergency Action Plan	12.6%
Venue Evaluation or Location Scouting	8.7%
Psychological Stress Discussion	5.1%
External Incident Review	3.3%
External Safety Review	1.8%