Massey's Avalanche Incident Review

Prepared by:
Viristar | Risk Management Services

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Exemplary Global Consulting

Massey's Ice Climb Avalanche Incident Review

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INTRODUCTION

On March 11, 2019, an avalanche swept down Mount Stephen in Yoho National Park in British Columbia Canada, hitting a group of six climbers at an ice-climbing site known as Massey's. The individuals were part of a four-day guided ice-climbing course. Two members of the party were buried in the avalanche, one of whom died as a result. The survivor, Michelle Kloet, retained Viristar to investigate the incident and provide an analysis with recommendations.

Objectives of the incident review are to evaluate the management of risk preceding the accident, and the immediate and longer-term responses following the incident, against best practices in outdoor risk management and critical incident management. An aim of the review is to provide information and perspective that will assist in finding meaning in the incident and moving towards a sense of closure. It is hoped that the incident review will not only be of value to those directly affected by the tragedy, but may also help reduce the likelihood of such incidents in the future.

The process of the review involved going over documentary information provided by Ms. Kloet and using this information to draw conclusions about both preventive risk management pertaining to the ice-climbing course and also steps taken following the incident.

The information reviewed in the process of completing this report was restricted to the documents provided by Ms. Kloet. Not all incident reports and review information generated about the incident were examined. In addition, interviews with a comprehensive set of stakeholders were not conducted, nor was a site visit held. Since these steps, typical of a complete incident review, were not conducted, it was not possible for the reviewer to provide an opinion on certain matters. This document review, then, while not a full incident review, should be considered as an analysis constrained by the information used to form conclusions and recommendations.

Review contents are divided into three sections. *Conclusions* are determinations made from analysis of incident-related data. They typically form a basis for recommendations that follow. *Recommendations* are guidance regarding appropriate ways to proceed, and form a core of the review. *Comments* are simply notes that do not carry the force of a formal recommendation but may be considered as appropriate.

EXECUTIVE SUMMARY

On March 11, 2019, an avalanche occurred on Massey's ice climb near Field, BC, in Yoho National Park, Canada, burying two persons. One individual was able to be extricated without physical injury; the other did not survive the incident.

This is tragedy for the person who lost her life, along with her loved ones. And the incident has had a profound effect on others directly or indirectly involved.

This review of the incident does not draw conclusions on the technical aspects of risk management surrounding the incident, due to constraints from the limited information reviewed. The review does, however, identify opportunities to improve post-incident response.

Contemporary best practice in outdoor risk management involves viewing incidents from a systems-based perspective. With this viewpoint, we can understand that these improvement opportunities are illustrative of structural or systemic gaps in outdoor incident management. What may be perceived as a failure of any particular entity can be understood from a systems framework to be a symptom of a large systemic deficit.

Recommendation summaries are below. These recommendations center on improving the capacity of entities within the outdoor recreation industry to better respond to critical incidents, including the complex and important emotional needs of survivors.

A challenge in implementing these recommendations is that implementation involves changing—specifically, increasing—the explicit expectation of what entities (such as guiding services or a guide association) are responsible for. Assuming these responsibilities requires an investment of resources, the allocation of which may encounter resistance or other barriers. However, such investments have been successfully made by others, particularly larger multi-national outdoor program providers. And there is recognition in the Canadian outdoor recreation and mountain guiding communities that there does exist a gap that is important to fill.

The deadly avalanche incident at Massey's is a tragedy. And in hindsight it is not difficult to see that the aftermath of the incident did not have to be as difficult for survivors and stakeholders as it was. This report provides some recommendations—that are achievable, if not easy to implement—that may help ensure that future incidents have improved outcomes for those involved.

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

1. A clear and effective process to manage post-incident response did not exist.
2. A specific process for effectively identifying and meeting the needs of next of kin and incident survivors did not exist.
3. Post-incident interactions became personalized and antagonistic.
4. Roles and responsibilities appeared to be unclear, leading to problems.
5. Suggested responses appeared to be ineffective.
6. The ACMG complaint/grievance process was ineffective in meeting the needs for which it was used.
7. Attempts to minimize legal liability may not have met all their aims.
8. No Return to Work policy appears to be in place.

RECOMMENDATIONS

Incident Reviews

1. The guiding company should conduct an internal review of the incident.
2. The guiding company should have an external review of the incident conducted.
3. The ACMG should support mountain guiding companies run by its members to conduct internal incident reviews and arrange for external incident reviews to be conducted, as part of post critical incident response.
4. Key findings of reviews should be suitably disseminated to interested parties.
5. Recommendations contained in internal and external reviews should acted upon by the subjects of those recommendations.
6. Systems thinking principles should be applied to the development and application of procedures that comprise the incident review process.
7. The British Columbia Coroners Service should complete an investigation or inquest into the matters surrounding the death of Sonja Findlater on March 11, 2019.

Emergency Response Planning

8. The guiding company should develop, test and practice an emergency response plan that includes post-incident follow-up.
9. The ACMG should develop and systematically disseminate resources to support guiding companies run by its members in the effective development, testing and practice of emergency response plans, including short-term and long-term post-incident response.
10. Emergency Response Plans should contain comprehensive guidance on working with those who may be significantly affected by a critical incident.
11. The establishment of a Return to Work policy should be considered.

Litigation Influence on Disclosure

12. Outdoor recreation interests should consider coordinated advocacy to reform the Canadian accident liability framework.

Government Regulation

13. Compulsory regulatory guidance should be considered if industry self-regulation proves inadequate.

Incident Reporting

14. A centralized database for collecting, anonymizing and analyzing incidents from a systems perspective should be maintained, with incentives to drive high levels of voluntary compliance.

INFORMATION REVIEWED

The following documents were reviewed in the process of preparing this Incident Review:

1. Email message from Michelle Kloet, March 10, 2020, describing incident
2. Parks Canada Avalanche Bulletins, Little Yoho, March 4-13, 2019
3. Parks Canada Incident Summary, Incident 2019-VS-YKLLFU-0019, undated
4. Email message from Michelle Kloet, March 10 2020, describing incident reporting
5. "Post-Incident Communication Response" article, ACMG eBulletin, Spring 2019
6. Complaint to the ACMG from Michelle Kloet, May 27, 2019
7. Photos of incident site, undated
8. Massey's Ice Climb Incident Victim Audio Logs Transcript (Parks Canada), undated
9. Email correspondence from Dara Miles regarding climbing locations/routes, March 9, 2019
10. Avalanche Terrain Exposure Scale, undated
11. Parks Canada brochure, "Waterfall Ice Climbing and Avalanches in Canada's Mountain National Parks," Second Edition
12. Screenshot and field guide/document excerpts, Massey's, undated
13. Facebook post "Avalanche Safety Tips," undated
14. Avalanche Rescue excerpt, Technical Handbook for Professional Mountain Guides (p 6-150), June 1999
15. Email correspondence with Lisa Paulson regarding Parks Canada incident information, May 7-15, 2019
16. Supplemental Document to the Initial Complaint to the ACMG Conduct Review Committee, June 19, 2019
17. ACMG Code of Conduct, undated
18. ACMG Objects and Business of the Association, undated
19. ACMG Preliminary Review, dismissal of complaint CR1901c, undated
20. ACMG Preliminary Review, dismissal of complaint CR1901d, undated
21. ACMG Conduct Review Procedures, undated
22. Memo from Dara Miles to the ACMG Preliminary Review Committee Re CR1901, July 9, 2019
23. Proposed Remedy, Complaint CR1901a (Merrie-Beth Board), signed July 19/20, 2019
24. Proposed Remedy, Complaint CR1901b (Benjamin Paradis), signed July 20, 2019
25. Email correspondence with Peter Tucker regarding report documents, September 13, 2019
26. ACMG Complaint CR1901 expanded summary and rationale, undated
27. Investigation summary, Brian Gould, Alpine Solutions Avalanche Services, July 16, 2019
28. Email correspondence with Dougald MacDonald and Brian Webster regarding Accidents in North American Mountaineering report, Jan 23-27, 2020
29. Accidents in NA Mountaineering Submission--Massey's Avalanche, undated
30. Email correspondence with Sylvia Forest regarding email message, March 7, 2020
31. Letter to Michelle from Sylvia Forest, March 7, 2020
32. “Questions that arose from the ACMG and Alpine Solutions Report” document, undated
33. Email message from Michelle Kloet regarding incident, March 16, 2020
34. Will Gadd Facebook page screenshot regarding incident communications, undated

35. Email correspondence with Will Gadd regarding incident communications, March 13, 2020
36. Email message from Michelle Kloet regarding two points of special importance, March 18, 2020
37. Email correspondence between Michelle Kloet and Sylvia Forest regarding report from Merrie-Beth Board, February 9, 2020
38. ACMG Incident Report by Merrie-Beth Board, March 13, 2019
39. Email correspondence between Michelle Kloet and Sylvia Forest regarding reporting, Jan 26-February 6, 2020
40. ACMG Incident Report #2 submitted 2017-09-24 085450, Mt. Lefroy rockfall
41. Letter from Sylvia Forest to Michelle Kloet, dated January 25, 2020
42. Email correspondence between Parks Canada and Michelle Kloet regarding incident report, January 2020
43. Early April 2019 photos (6) of Massey's avalanche site showing anchor and tree damage
44. Email correspondence from Michelle Kloet, including text of article "Legal consequences of fatal avalanche accidents in the European alps," May 29, 2020
45. Email correspondence between Sarah Hueniken and Michelle Kloet, April 5, 2019
46. Email correspondence between Sarah Hueniken and Michelle Kloet, Ashley Mitchell and others, March 19, 2019
47. Email correspondence between Sarah Hueniken and Michelle Kloet, April 3, 2019
48. Email correspondence from Sarah Hueniken to Michelle Kloet, Merrie-Beth Board, and others, March 17, 2019
49. Email correspondence between Sarah Hueniken and Michelle Kloet and others regarding "sling off," March 7, 2019
50. Email from Merrie-Beth Board to Michelle Kloet responding to question, April 24, 2019
51. Email correspondence between Merrie-Beth Board and Michelle Kloet and Sarah Hueniken, regarding a question, April 5 2019-May 4 2019
52. Email message from Sarah Hueniken to Michelle Kloet regarding touching base, December 21, 2019
53. Information on custodial groups and mountain safety, Parks Canada, https://www.pc.gc.ca/en/pn-np/mtn/securiteenmontagne-mountainsafety/gardiens-custodial, retrieved June 1, 2020
54. Written notes from Michelle Kloet on draft report content, June 1, 2020

NARRATIVE OF INCIDENT AND INCIDENT RESPONSE

A summary of certain key elements of the March 11 2019 avalanche incident and subsequent actions is described here.

Incident

A group of ten participants and five guides were part of an ice-climbing course organized by Sarah Hueniken Guiding to take place March 10-13 2019 based out of the town of Field, BC in Yoho National Park in the Canadian Rockies.

On the day of the incident, March 11, two guides and four guests were climbing at Massey's, a popular icefall climbing route walking distance from Field. The group spent the morning engaged in a multi-pitch climb of the route. At approximately 1427 hours, a size 2/2.5 avalanche hit the group, which was at the base of the climb, where a clinic on building ice-climbing anchors was underway. Two participants, Sonja Findlater and Michelle Kloet, were caught in the avalanche and carried approximately 250-265 feet from the base of the climb.

A guide, who was not at Massey's but nearby, observed the avalanche and contacted Parks Canada by telephone to request a rescue.

The group had been carrying avalanche probes and shovels, stored in packs situated near the base of the climb, but these were carried away by the avalanche and unavailable. Group members were wearing avalanche beacons, however.

Unburied group members used improvised devices such as helmets and crampons to extricate Ms. Findlater, who was uncovered from a depth of approximately 1.8 meters at around 1500 hours, unresponsive and not breathing. She was flown by helicopter to an ambulance and transported to a medical facility, where she was pronounced dead.

Ms. Kloet was buried with her feet 1.5 meters deep and her head closer to the surface. She was uninjured and was able to extricate herself with some assistance from others.

Incident Response

Immediately following the incident and helicopter evacuation of Ms. Findlater, surviving group members returned to Field where statements were taken by the RCMP. Some days following, Parks Canada held an incident and rescue debrief, including some but not all members of the group.

Ms. Kloet met with guides Sarah Hueniken and Will Gadd, as well as Association of Canadian Mountain Guides (ACMG) Executive Director Peter Tucker, to express concerns about safety and how the climbing experience and incident were managed. Ms. Kloet also requested information regarding the incident from Parks Canada.

These interactions proved unsatisfactory to Ms. Kloet, who believes a full report of the incident should be available, and who seeks a review of risk management processes in order to improve safety practices of the ACMG and ACMG-certified guides.

Ms. Kloet filed a complaint with the ACMG on May 27 2019. The complaint resolution process has been unsatisfactory to Ms. Kloet, who wishes for a process that more effectively supports incident survivors and inclusively provides resources for a broad range of organizations and individuals to learn from the incident and improve safety practices as a result.

A report was submitted in January 2020 by Parks Canada to the American Alpine Club for publication in Accidents in North American Mountaineering.

In March 2020, in order to help make further progress towards her desired ends, Ms. Kloet requested that Viristar review information on the incident and formulate a report.

AREAS IN WHICH NO CONCLUSION WAS REACHED

One area of potential incident investigation concerns preventive risk management actions taken or not taken by relevant parties prior to the incident.

A second area of potential incident investigation concerns specific actions taken or not taken during the incident itself.

Specifically, these areas include, but are not limited to:

1. Risk management actions undertaken by the guiding company, its staff, and its contractors prior to the commencement of the March 10-13 2019 ice-climbing program.
2. Risk management actions undertaken by the guiding company, its staff, and its contractors during the March 10-13 2019 ice-climbing program prior to the avalanche (i.e., actions on March 10 and until approximately 1427 hours on March 11).
3. Actions undertaken by guiding company staff and contractors, and by ice-climbing program participants, during the March 11 incident, i.e. from the time of first observation of the avalanche to the evacuation of all party members from the climbing site.
4. Actions taken by emergency response entities, including but not limited to rescue and/or emergency medical care and transport services provided by Parks Canada, RCMP, BC Ambulance, Banff EMS, Lake Louise Fire and Safety, Field Fire and Safety, Alpine Helicopters, and Shock Trauma Air Rescue Society (STARS).

An analysis of these actions is an important component of a fully comprehensive incident review. As noted in the Introduction to this report, the information used in the formulation of this report did not include information gathered from all key parties involved in the incident. In addition, investigative documentation known to exist regarding this incident was not reviewed. Therefore, it was not possible in this report to draw conclusions regarding these aspects of the incident.

CONCLUSIONS

1. **A clear and effective process to manage post-incident response did not exist.**

   Overall, neither the guiding company nor any other entity appeared to have a well-developed system, and persons sufficiently trained to implement that system, for effectively addressing the aftermath of the incident. The process, which would involve clear roles and responsibilities for relevant parties, thorough documentation of procedures, and a structure for proactively training those who would implement the procedures, did not appear to exist to the satisfaction of those directly involved in the incident.

   Specifically, it appears that the psychological and cognitive needs of the avalanche burial survivor, Ms. Kloet, were not met. Ms. Kloet did not receive the information she felt she needed to help understand, make meaning of and process her experience. Her psychological needs to be heard and respected also did not appear to be met. As an example, in the May 27 2019 Complaint to the ACMG Conduct Review Committee, Ms. Kloet stated that her "concerns and questions have been ignored or minimized" and enumerated six instances in which she felt this occurred.

   The cognitive and emotional needs of critical incident survivors are interlinked (for instance, part of the process of resolution of emotions is the receipt and processing of incident data, including prevention and response information). In the response to this incident, neither set of needs appeared to be met by any established process or other means.

2. **A specific process for effectively identifying and meeting the needs of next of kin and incident survivors did not exist.**

   This conclusion expands on the over-arching Conclusion 1, above, and refers to the needs of those significantly affected by a critical incident.

   It appeared to be unclear which entity (individual or organizational) was responsible for addressing the needs of next of kin and incident survivors. It appeared to be unclear what the responsibilities of that entity (or entities) was. As a consequence, it was substantially more difficult for Ms. Kloet to have her post-incident needs met. Ms. Kloet continued to pursue avenues of resolution with the ACMG and individual guides, with limited success.

   The needs referenced here refer to both cognitive and emotional needs following a critical incident.

   Cognitive needs include needs to:
   1. Understand what happened.
   2. Understand why the incident happened. This can include providing access to the results of an impartial expert analysis of the incident, including causal factors leading to the incident.
   3. Understand what changes should be made post-incident, i.e. what are the implications for professional practice as a result of incident analysis.

4. Understand what changes are being made or will be made post-incident.

In this instance, Ms. Kloet was not included in the Parks Canada post-incident debrief. She was not provided full access to investigative reports or rapid and easy access to government information regarding the incident.

Emotional needs include needs to:

1. Have emotional experience be validated.
2. Have support for expressing, processing, and working through emotions. (This can be done informally, for example through family or friends, and/or professionally, through critical incident stress debriefing or similar processes, counseling and therapy.)

In this instance, Ms. Kloet was unable to identify any central point of contact, at the guiding company or elsewhere, to support her in processing the experience. No apparent effective critical incident stress debriefing or similar support appears to have been offered Ms. Kloet. It appears that counseling was at one point offered by the ACMG, along with a "properly mediated meeting," but the review did not observe evidence that these offers were effective.

3. Post-incident interactions became personalized and antagonistic.

Although all parties involved directly or indirectly in the avalanche incident presumably had and have positive intentions for successful incident follow-up, relationships between parties significantly deteriorated post-incident.

A probable contributing factor to this deterioration is the lack of an optimal post-incident process. Without a high-quality, well-defined process established and practiced in advance, defensiveness and withholding of information may be more likely to occur. This increases the difficulty of processing the incident and moving forward in positive ways.

Critical outdoor incidents take place in a complex sociotechnical system involving persons, organizations, associations, and government entities (Dallat et al. 2015, Salmon et al. 2012). A review of causative incident elements is most effective when all systems elements are considered. When the focus is on specific actions (or inactions) of individual persons, rather than the underlying systems that lead to those actions or inactions, the likelihood of personalized, antagonistic interactions increases, making a positive outcome more unlikely.

In this instance, a focus on individuals, precipitated in part by the lack of a systems-based process, and the presence of an individual-focused process in the form of the ACMG's formal complaint structure, appears to have fostered an environment in which objectivity was diminished and defensiveness was raised.

A systems-based approach to incident management might have reduced or eliminated the process traps that parties involved in this incident appear to have fallen into, which then led to difficult interactions and obstacles to resolving issues.

4. **Roles and responsibilities appeared to be unclear, leading to problems.**

   It appeared that in the days after the incident, the leadership of the guiding company involved did not have a clear sense of best practices to follow in responding to a critical incident. It appears the guiding company did not have the resources to take the appropriate steps, even if its staff were aware of them.

   As the guiding company did not appear able to effectively and comprehensively manage events post-incident, the ACMG was pulled into the process. However, the Association also seemed to lack a well-established structure for working with survivors and next of kin, managing incident review processes, or knowing how to avoid becoming entangled in an incident that was really not its own.

   A clearer understanding of roles and responsibilities, and how to consummate them, on the part of mountain guiding companies of all sizes in Canada (and beyond), the ACMG, and Parks Canada, would be helpful in the likely event that tragedies similar to the March 11 2019 avalanche should recur.

5. **Suggested responses appeared to be ineffective.**

   Multiple entities made offers in an apparent effort to support a resolution to the aftermath of the incident.

   Commendably, the guiding company offered to refund course fees, to replace lost gear, to provide a facilitated debrief, to facilitate attendance at a memorial service, and repeated words of condolence. In some situations, this could be considered to be a sufficient response.

   A guide present during the course offered “to talk” with Ms. Kloet, stating, "my door is literally always open to you." And the ACMG President offered to set up a meeting "with clear ground rules and emotional support for participants who are triggered."

   However, invitations to discuss the incident in an unstructured or semi-structured way did not appear to provide a framework effective in addressing the needs that Ms. Kloet had attempted to convey verbally and in writing. In addition, a pervasive atmosphere of apparent distrust, defensiveness and antagonism appeared to make these potential discussions less likely to be of use.

   A well-developed, systems-based formal incident review process conducted according to best practices in incident reviews, a differently structured set of debriefing and processing opportunities, and immediate skilled attention to the needs of incident survivors might have had a different level of effectiveness.

6. **The ACMG complaint/grievance process was ineffective in meeting the needs for which it was used.**

   The incident involved many elements of a complex system. These elements include the guiding company, the ACMG, Parks Canada, safety standards, the regulatory environment, and the British Columbia Coroners Service. However, the primary avenue for formal issue resolution that was apparent and used by Ms. Kloet, the ACMG's formal complaint process, focuses exclusively on the behavior of individual guides.

   Although the guide complaint process may work in the case of issues localized to a guide, it was not the appropriate tool for resolving complex systemic issues regarding the avalanche incident. Its use appeared to lead to frustration on multiple sides, and a failure to resolve the presenting issues. A different process, such as the use of transparent and inclusive internal and external incident investigations, might have led to a superior result.

7. **Attempts to minimize legal liability may not have met all their aims.**

   When an incident involving significant loss occurs, those who may be liable typically take steps to minimize legal liabilities stemming from the incident. In the outdoor context in North America, two principal approaches are customarily employed.

   1. The classic approach is to keep as much information as possible away from potential adversaries. The tendency here is for organizations who have suffered a critical incident to go into a "defensive crouch" and share as little information as possible with those injured or affected. Shielding incident investigations behind attorney-client privilege and refusing to share other information—which may or not have content demonstrating negligence or other failures on the part of the organization or its staff—is the norm. While this can keep potentially incriminating information from a prospective plaintiff, it can turn potentially collaborative relationships into antagonistic ones, increasing the probability of litigation.

   2. A second approach (Gregg, 2000, p. 135) has been used by organizations which, due in part to their length of existence and larger business volume, have extensive experience with critical incidents including fatalities on outdoor programs. These organizations have found it useful to share information promptly and thoroughly with survivors and next of kin, and to show sustained genuine care and concern for the well-being of those persons. By working together on the shared aim to find meaning in the incident and come to a place of closure, and thereby reducing emotional charge and animus, the probability of a lawsuit being filed can be reduced. It is possible to even see family members of a participant killed on an outdoor program donate significant sums to the organization, for instance to create a scholarship fund in memory of the deceased. This collaborative approach, which can be effective, may be resisted by lawyers and insurance specialists accustomed to the classic strategy described above.

When a critical incident occurs, how the post-incident process is handled can mean the difference between making an ally or a fierce adversary. Emergency Response Plans may be more effective if they outline best practices and detailed procedures for building positive relationships with affected parties that reduce the probability of antagonism and litigation.

The formal complaint process of the ACMG and various offers for unstructured meetings in a potentially defensive environment did not appear optimally suited to address the cognitive and emotional needs of survivors, or the interest in an impartial investigation resulting in systematized changes to guide and ACMG procedures, in ways that might build constructive and positive relationships.

8. No Return to Work policy appears to be in place.

No evidence of a Return to Work policy was evident in the organizations directly involved in the incident and its response. However, such a policy or policies may have existed but not have come to the awareness of the reviewer.

In this context a Return to Work policy is understood to indicate a return to work after a policy-mandated period of administrative leave. Administrative leave refers to relieving an employee of duties, but continuing to provide full pay and benefits, while an investigation (e.g. into alleged or suspected misconduct) is initiated. Administrative leave and the presence of the related incident investigation do not imply culpability.

RECOMMENDATIONS

Incident Reviews

1. **The guiding company should conduct an internal review of the incident.**

   The guiding company should, as needed, obtain the knowledge, skills and any other necessary capacities for conducting an internal review from the ACMG or other suitable source.

   It is recognized that it may not be possible for the guiding company to implement this recommendation due to the unavailability of resources (e.g. staff, financial, knowledge) required to do so.

   It may also be useful to recognize that the first times an organization attempts an internal review, the results may reflect the organization's relative inexperience; this should be calibrated into expectations.

2. **The guiding company should have an external review of the incident conducted.**

   The external review should be conducted by a third party with expertise in outdoor incident investigation, hired by the guiding company.

   It is recognized that it may not be possible for the guiding company to implement this recommendation due to the unavailability of resources (e.g. staff, financial, knowledge) required to do so.

3. **The ACMG should support mountain guiding companies run by its members to conduct internal incident reviews and arrange for external incident reviews to be conducted, as part of post critical incident response.**

   Support may involve provision of best practice standards, access to training on incident reviews, support for identifying qualified third parties for the conduct of external reviews, and support for developing emergency response plans that include policies and procedures regarding both when and how to conduct incident reviews.

   It is recognized that providing such support is not a common role for associations of outdoor activity providers. (For instance, the American Mountain Guides Association, American Canoeing Association, and Association for Experiential Education, all of which support various outdoor activities, are not known to provide such services.) It is also recognized that there may be other suitable avenues for filling the capacity gap faced by small mountain guiding companies confronted with the need for incident reviews. This recommendation is provided as one logical approach to filling that capacity gap.

4. **Key findings of reviews should be suitably disseminated to interested parties.**

Interested parties include those directly involved in the incident, industry stakeholders such as other guiding companies, and the general public.

The approach to dissemination should generally emphasize being open about the incident, its causes, and systems-informed responses, for the purpose of minimizing the likelihood of recurrence of similar incidents.

Consideration should be given to keeping key stakeholders such as survivors and next of kin informed of investigation results throughout the investigation.

Summaries of internal incident reviews should generally be made widely and publicly available.

The full, unredacted external review should be made publicly available to support learning and improvement throughout the field/sector. (As an example, the 131-page external review of the 2008 Mangatepopo Gorge incident, resulting in multiple fatalities on an outdoor trip, is available on the website of the organization where the incident occurred (http://www.hillaryoutdoors.co.nz/newsite/wp-content/uploads/2013/06/091015-IRT-OPC_-Report.pdf).)

5. **Recommendations in internal and external reviews should acted upon by the subjects of those recommendations.**

   Action may include:
   a. Full or partial implementation of recommendation, or
   b. Disagreement with recommendation on reasonable basis, with declination of implementation

6. **Systems thinking principles should be applied to the development and application of procedures that comprise the incident review process.**

   These principles (Baierlein, 2019) include:

   a. Incident reviews should investigate for the presence multiple direct and underlying factors that led to the incident.
   b. Incident reviews should address factors at all levels of the complex sociotechnical system in which the incident takes place. These include individuals, guiding organization(s), relevant industry association(s), and various aspects and levels of government.
   c. Investigations should not unduly affix responsibility to individuals proximate to the incident.
   d. Investigations should use as a model an established systems-based analysis framework for the conduct of the investigation. Examples that may be considered include, but are not limited to:
      i. STAMP (Systems Theoretic Accident Modeling and Processes)
      ii. AcciMap

iii. Human Factors Analysis and Classification System (HFACS)

7. **The British Columbia Coroners Service should complete an investigation or inquest into the matters surrounding the death of Sonja Findlater on March 11 2019.**

   The death is understood to be under investigation at this time by the British Columbia Coroners Service. Findings from these investigations and inquests are typically made public, and can help put closure on the incident and reduce the likelihood of recurrence of a similar incident.

<u>Emergency Response Planning</u>

8. **The guiding company should develop, test and practice an emergency response plan that includes post-incident follow-up.**

   The plan should include procedures for supporting the cognitive and emotional needs of parties (such as incident survivors and next of kin) directly affected by the incident, in the months and years post-incident.

   Support from the ACMG or other sources (such as third parties that specialize in emergency response plan development for outdoor and adventure organizations) may be necessary and should be used as needed in the development of this plan and in development of procedures regarding testing and practicing of the plan.

9. **The ACMG should develop and systematically disseminate resources to support guiding companies run by its members in the effective development, testing and practice of emergency response plans, including short-term and long-term post-incident response.**

   Resources should include guidance on supporting the cognitive and emotional needs of parties (such as incident survivors and next of kin) directly affected by the incident, in the months and years post-incident.

   It is recognized that providing resources of this nature is not a common role for associations of outdoor activity providers. It is also recognized that there may be other suitable avenues for filling the capacity gap faced by small mountain guiding companies confronted with the need for emergency response plans that guide actions with affected parties in the months and years post-incident. This recommendation is provided as one logical approach to filling that capacity gap.

10. **Emergency Response Plans should contain comprehensive guidance on working with those who may be significantly affected by a critical incident.**

    Critical incidents can have potentially devastating and life-long psychological, professional and other impacts on those directly affected, including incident survivors (staff and participants), next of kin, responders, and administrators managing emergency response.

Accordingly, skilled attention to the emotional and cognitive needs of these persons to support them in making meaning of the incident and finding closure is important. Responses will vary depending on circumstances, but may include optional critical incident stress debriefing, counseling or therapy, and coordinated involvement in memorial services or related events. For staff, paid time off and flexibility with job responsibilities can be among helpful measures. For surviving participants and next of kin, facilitated incident site visits, being kept apprised of investigation findings as they are made and receiving genuine expressions of care and concern may be appropriate.

A leading outdoor-specific resource for addressing survivor psychological needs following a critical outdoor incident is the text *Lessons Learned II* by Deb Ajango (2005), particularly Chapter 5, which recounts the devasting emotional impact such incidents can have on survivors, and discusses best practices for successfully addressing them.

11. The establishment of a Return to Work policy should be considered.

Such a policy (also described in Conclusion 8) could reduce the potential of continued loss, and provide affected employees time to recover from the effects of an incident, by establishing a period of policy-mandated administrative leave for applicable employees. The policy establishing administrative leave and a return to work after such leave could be implemented in the case of serious incidents where there is reasonable cause to believe misconduct may have occurred.

Litigation Influence on Disclosure

12. Outdoor recreation interests should consider coordinated advocacy to reform the Canadian accident liability framework.

Fear of damaging litigation induces organizations to refrain from releasing incident reports and incident review documentation. This inhibits the ability of those directly involved to successfully process their experience, and the ability for others to use the incident as a learning opportunity by which risk management systems can be improved.

A no-fault accident injury compensation system can ameliorate this problem by providing compensation to those injured without the expense and sometimes massive liabilities associated with conventional North American litigation systems. New Zealand provides a national role model for this with its Accident Compensation Corporation scheme (established by the Accident Compensation Act 2001 and related legislation). This framework provides compensation to injured parties while prohibiting those parties from suing for costs related to the injury or its negative effects. This enables transparent incident investigation and is considered a significant factor in the success of New Zealand's outdoor recreation sector.

Government Regulation

13. Compulsory regulatory guidance should be considered if industry self-regulation proves inadequate.

Self-regulation is common in many industries, including in the majority of outdoor recreation contexts around the world. This permits those with the most direct experience in outdoor recreation to manage safety standards, while freeing government resources to pursue other ends. However, in situations in which industry ability to self-regulate has come to be seen as inadequate, national governments have stepped in to ensure minimum standards for risk management are met. This is most common in high-income countries with high expectations of safety and where outdoor activities are a significant part of the culture or economy. New Zealand and the United Kingdom are the primary contemporary examples. Following a multiple-fatality youth kayaking incident (Lyme Bay, 1993) in the UK and a multiple-fatality canyon-hiking incident (Mangatepopo Gorge, 2008) the governments of the UK and New Zealand worked with the outdoor recreation industry to put in place national outdoor recreation safety legislation. This legislation, setting safety standards and requiring external safety audits, helps ensure a uniformly high level of risk management nation-wide, and has been shown to be generally well-accepted by outdoor recreation providers over time.

Research (Carden, 2019; Gunningham, 2011) suggests that government regulation may be more effective than voluntary self-regulation at the individual organization or industry-wide level. While many in outdoor recreation prefer self-regulation, well-crafted government regulatory solutions can be more effective than pure self-regulation in ensuring all providers meet reasonable standards for risk management.

Incident Reporting

14. A centralized database for collecting, anonymizing and analyzing incidents from a systems perspective should be maintained, with incentives to drive high levels of voluntary participation.

Incident reporting for certain types of incidents, such as certain workplace and maritime accidents, is required in some jurisdictions by governmental health and safety agencies. However, in the outdoor industry, most incident reporting remains voluntary, and the contents of those reports are not publicly available. This is the case in even the most highly regulated outdoor industry settings, such as the UK (under the Activity Centres (Young Persons' Safety) Act 1995/Adventure Activities Licensing Regulations 2004) and New Zealand (under the Health and Safety at Work (Adventure Activities) Regulations 2016).

However, voluntary reporting to an industry-maintained database where incidents are analyzed from a systems perspective, and scientifically valid synthesis reports are made publicly available, can enable industry-wide learning from anonymized data. This is particularly the case when a high proportion of providers participate in the incident reporting regime. A global exemplar in this regard is the UPLOADS Project in Australia

(uploadsproject.org), which can inform a centralized system that could be put in place in Canada.

It is understood that some centralized mountaineering incident report data is kept. This recommendation recognizes those efforts, some of which are long-standing. The recommendation also encourages incident report data collection to be systems-based, to be maintained in a queryable electronic database suitable for sophisticated report generation, to be used by a significant proportion of applicable activity providers, and to be considered for expansion to include outdoor recreation and outdoor adventure activities beyond mountaineering and climbing.

COMMENTS

1. **All persons involved in a critical incident should have access to skilled counseling or therapy.**

   Persons includes individuals on the outdoor experience, and program managers or others involved in incident response.

   Counselling or therapy is ideally made available by the institution providing the outdoor experience, via third-party counselling or therapy providers. Failing that, individuals should be encouraged to procure services for themselves.

   Counsellors and therapists who have a special expertise in processing the emotional trauma from outdoor incidents, including mountaineering incidents, are available (though not widespread). One potential resource is Lorca Smetana, lorcasmetana.com.

   Support from empathetic friends or persons who can relate to a survivor's experience can also be useful, but may not be as helpful as support from a skilled counselor or therapist.

   The New Zealand Mountain Guiding Association (NZMGA, 2016, p.4) has published a policy stating that following a serious accident where a member guide may be at risk of post traumatic stress, the Association will organize and pay for an initial meeting with a psychologist to determine if ongoing help is needed. NZMGA has published a list of experienced counsellors who can provide help and who will invoice the NZMGA for the first session. This could provide an example from which other guiding associations could build their critical incident response infrastructure.

2. **Approaches for supporting survivors to find meaning and closure should be provided.**

   It may be helpful in the process of healing and closure to recognize that knowing details of the incident is helpful and important, but is not always possible. Therefore finding ways to cope with the fact that one may never know those details can be useful.

   Identifying ways to find meaning in the incident, to know that the tragedy did not occur in vain, can also be useful. Helping others learn from one's experience can assist in providing closure and a sense of control. Examples of activities other survivors have conducted include: organize an outdoor risk management conference, present at an event like the International Snow Science Workshop, set up a safety fair, write a book, and become an outdoor safety speaker.

3. **COVID-19 implications may influence the ability of organizations to invest in systemic improvements.**

   The significant economic impact of the current COVID-19 pandemic should be expected to noticeably diminish the capacity of guiding associations, guiding companies and others to commit financial and other resources to improving post-critical incident response

systems. For instance, an initiative by the ACMG to conduct such an effort is currently on pause as a direct result of the pandemic's influence on institutional capacity.

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ABOUT VIRISTAR

Viristar LLC provides risk management consultation and other services for outdoor, adventure, travel and experiential programs and related stakeholders. Viristar's four service lines are: risk management, program development, business management, and wilderness medicine. Viristar staff have provided training and consulting services in 16 countries on four continents. In addition to providing risk management review and training services to outdoor organizations, Viristar staff have provided outdoor adventure program accreditation reviews and Expert Witness services for outdoor-related legal proceedings.

Viristar is led by Jeff Baierlein, who has over 30 years in the outdoor industry, including extensive professional experience with sea kayaking, sailing, backpacking, rock climbing, mountaineering, canyoneering, canoeing, service learning, and white water kayaking programming, as instructor, Program Director, Safety Officer, and CEO.

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