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Case Study:
Mangatepopo Drowning, New Zealand 2008

The rain had been falling all day, sometimes heavily. Ten teenagers and their teacher hiked up the steep-walled gorge, splashing through the stream, as part of a team-building experience at an outdoor activity centre in New Zealand.

New Zealand

Mangatepopo Gorge, NZ

Canyon hike

Before the hike a manager had checked the weather forecast, but not the weather map provided the MetService (the national weather service), which would have alerted staff in advance about heavy rain. Management did not check forecast updates or MetService's Severe Weather Warning email notifications.

MetService's weather report mistakenly omitted the word "thunderstorm," which could have alerted staff to heavy rains, and the agency did not follow up to address the error in its forecast.

The instructor leading the group had been at the centre just three months. The organization, which faced staffing issues, felt pressure to get new instructors into productive work mode as soon as possible. Although the instructor had not yet read and signed the Risk Analysis and Management System document describing Gorge risks and management strategies, as required, she was permitted to lead the Gorge trip. She had not been formally assigned a mentor who could provide safety guidance, as described in the centre's policies. A map of the gorge with emergency escapes was available, but was never given to the instructor.

As the group hiked up the the gorge, the water rose, and became swift and muddy. A student was almost swept away. The hikers turned back to head to safety (passing by a "high water escape" the instructor, due to inadequate training, was not aware of), but before reaching the mouth of the canyon, decided to wait out the flood on a small ledge.

The water, now a raging torrent, continued to rise, coming over the ledge. The instructor tried radioing for help—made more difficult because the radio was turned off, disassembled, and double-bagged. Her calls were blocked by the canyon wall, and there was no radio repeater that the canyon mouth.

The instructor, unsure if the water would continue rising, decided the group would try to swim to safety. Some students were not good swimmers—medical forms did not ask about swimming competence, and they had not been

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filled out completely, omitting the presence of cerebral palsy in one student. Participant swimming ability, required by Centre policy to be assessed, had not been checked.

The instructor jumped from the ledge and swam to safey. Students and the school teacher followed, but several were swept over a dam. Six students and their teacher drowned. Bodies of two students were recovered more than two kilometers downstream.

Although the New Zealand government did not ensure safety standards for outdoor adventure programs were met, for example by a licensing scheme, safety was important to the centre. However, the impact of financial concers led to pressure to accept bookings even if suitable staff were not available. Rescue drills practicing rescue of groups in the gorge had not been conducted. The organization had a history of blaming staff for accidents, rather than addressing underlying issues.

An external safety audit was being conducted on the day of the tragedy. Despite the death and the many issues leading to it, those issues were not addressed in the audit, and remarkably, the centre passed its safety audit.

Risk Management Analysis

Formal reviews found deficits in the following risk domains. List issues you found in the story above.

Culture

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Activities, Program Areas

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Staff

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Participants

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Equipment

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Business Administration

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Outdoor Industry

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Government

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Mangatepopo Gorge Tragedy
Risk Management Issues Noted By Investigators

Culture

1 The organization had a history of blaming staff for accidents, rather than addressing underlying issues.

Activities & Program Areas

1. Participant swimming ability, required by Centre policy to be assessed, was not checked, nor was there any routine system to do so.
2. Rescue drills practicing rescue of groups in the gorge had not been conducted.

Staff

1. Program management did not read the weather map supplied to the Centre by MetService (the national weather service), which would have alerted staff about heavy rain. Program management did not access freely available updated weather forecasts, or subscribe to MetService's free Severe Weather Warning email notification service.
2. The instructor was not formally assigned a mentor, who could provide safety guidance, as described in the Centre's policies
3. The instructor was permitted to lead the Gorge trip without having read and signed the Risk Analysis and Management System document describing Gorge risks and management strategies, as required.
4. A map of the gorge with emergency escapes was available, but was never given to the instructor.
5. The group passed by a "high water escape" shortly before sheltering on the ledge, but due to inadequate instructor training and experience, did not take advantage of it.

Participants

1 Medical forms were not filled out completely, omitting the presence of cerebral palsy in one student.

Equipment

1. The radio was turned off, disassembled, and double-bagged, making communications to or from the group more difficult.
2. A radio communications system to eliminate spots of no radio reception in the canyon was not in place.

Business Administration

1. Due to staffing issues, there was pressure to get new instructors into productive work mode as soon as possible.
2. The medical form did not ask about swimming competence.
3. The impact of financial pressure led to pressure to accept bookings even if suitable staff were not available.

Government

1. The weather report issued by MetService used by staff mistakenly omitted the word "thunderstorm," which could have alerted staff to heavy rains.
2. MetService did not follow up to address the error in its forecast.
3. The New Zealand government did not ensure safety standards for outdoor adventure programs were met, for example by a licensing scheme.

Outdoor Industry

1. An external safety audit was being conducted on the day of the tragedy. Despite the death and the many issues leading to it, those issues were not addressed in the audit.