



Most significant incidents are the result of a “perfect storm” of multiple administrative and site management errors. This drowning incident was no exception.

### *Administrative Errors*

1. Program administration did not take into account the potential consequences unseasonably warm temperatures and an early spring run-off.
2. Field staff were unfamiliar with the course area.
3. Field staff were not trained in Swiftwater rescue or high-water river crossing techniques. As a result they did not have the training or experience to correctly assess the hazard the swollen stream presented.
4. No emergency communication was provided/available. Had reliable emergency communication (cell or satellite phone) been available the instructors could have called for assistance.

### *Site Management Errors*

1. Poor trip planning in light of the high potential of an early spring run-off. The decision to attempt the stream crossing was influenced by a desire to get to the end-of-course pick-up. In this sense it was itinerary driven.
2. Poor hazard and risk assessment.
3. Poor personal (staff) assessment of their ability to plan and manage a safe stream crossing under the highwater conditions.
4. No training progression and skill assessment for students.

It is the program administration’s responsibility to ensure that the site management skills of their staff are balanced with the inherent risks present in the trip’s itinerary.



The failure of the program administration to recognize the hazard presented by the unseasonably warm temperatures and their failure to ensure that the trip staff were well trained in high-water stream crossings precipitated this incident. That said, had the field staff been able to accurately assess their own site management skills and elected to turn around or patiently wait until the water receded (or help arrived), the incident could easily have been averted.

### *First Aid*

Although luck played a large part in the rescue, once the student was safely on shore the staff responded correctly with immediate CPR. Upon successful recovery of their patient’s pulse, respirations, and consciousness, their problem list was: possible

moderate concussion (however unlikely, it cannot be ruled out because she had a loss of consciousness and amnesia) and drowning.

Drowning is a process with three possible outcomes: 1. Death, 2. survival with brain damage, and 3. survival without brain damage. Water in the lungs may cause an inflammatory response that leads to pulmonary edema (PE); the more particulates in suspension or chemicals in solution, the greater the likelihood of PE. In most cases, the S/Sx of PE will appear within 4-6 hours of rescue or resuscitation; decreased water quality increases the likelihood of pulmonary edema and subsequent respiratory infections.

As such: the patient's anticipated problems are a severe concussion and delayed respiratory distress secondary to pulmonary edema. While she does not currently present with respiratory distress, she may develop it. It is prudent to begin a Level 2 Evacuation to the nearest hospital for evaluation and observation. (If PE develops she may not survive without hospital intervention). Unfortunately, the group is still on the wrong side of the swollen stream. At this point they will need to decide whether to wait for the water to recede to a safe crossing level or help to arrive, to back track with the group to their original drop-off, or to find another potential pick-up spot.