EXPEDITION RISK MANAGEMENT AT NOLS

BACKGROUND

NOLS was founded in 1965. From its start as a summer outdoor program located in Lander, Wyoming, NOLS is now a year-round wilderness and leadership school that operates globally. We have expedition operations in Alaska, Arizona, Idaho, New York, Utah, Washington, and Wyoming; as well as outside the U.S. in Canada, Chile, India, Mexico, New Zealand, and Tanzania. On average, close to 4,000 students enroll each year on extended wilderness expedition courses, totaling over 100,000 annual field program days.

The NOLS mission is to be the leading source and teacher of wilderness skills and leadership that serve people and the environment. Since our inception the NOLS educational goals have been to learn and practice judgment, leadership, and wilderness skills.

In addition to offering expedition courses, NOLS offers wilderness medicine training and certification around the globe. This document describes risk management for expedition courses.

NOLS RISK MANAGEMENT MISSION STATEMENT

NOLS promotes the health and well-being of students and staff as one of our highest priorities and strives to be the leading source and teacher of risk management practices in wilderness education.

RISK MANAGEMENT GOALS

1. To prevent fatalities, disabling or disfiguring injuries and serious illness.
2. To reduce all injuries and illnesses.
3. To anticipate emergency response and crisis management needs and design suitable protocols and plans.
4. To identify the accepted NOLS field practices for managing life threatening risks and the expectations for their consistent use.
5. To be a leader and resource of wilderness risk management practices.

Risk is a component of wilderness travel and risk management is a core element of a NOLS education, our curriculum, and how we conduct our courses. This emphasis on risk management gives our education relevancy and practicality. Risk management at NOLS is based on the philosophy of our founder, Paul Petzoldt, that risk is inherent in the remote locations through which we travel and our approach to risk is one of respect gained through knowledge, skill, experience, and expertise. We value critical thinking, reflection on experiences, transparency, and resiliency in difficult times. We have a strong commitment to our students, and we continually seek to enhance our systems of risk management.

The Risk Management program at NOLS is organized into the following categories.

1. Risk Management Oversight
2. NOLS Core Curriculum
3. Instructor Training
4. Administrative Processes
5. Field Support Services

RISK MANAGEMENT DEFINITION

a. Risk Management at NOLS supports educational experiences by integrating all aspects of the organization to promote the health and well-being of students and staff.

b. NOLS expedition risk management is the process of understanding and anticipating the risks of leading groups in remote wilderness environments and applying appropriate responses to reduce the likelihood of an injury, illness, fatality, or close call (aka near miss).

RISK MANAGEMENT OVERSIGHT

THE NOLS RISK MANAGEMENT COMMITTEE

The NOLS risk management committee is comprised of representatives from the NOLS board of trustees, special advisors, and the risk management director. The committee monitors the NOLS risk management program and performance and assists in formulating risk management goals and strategies. The committee meets three times per year.

PRESIDENT AND EXECUTIVE TEAM

The president of NOLS is an ex-officio member of the risk management committee. The president consults regularly with the risk management director. The president and the executive team establishes risk management as an institutional priority.

RISK MANAGEMENT DIRECTOR

The risk management director provides oversight and guidance of field risk management at the school-wide level. The risk management director monitors and investigates injury, illness and near miss incidents, manages the NOLS risk management incident database, establishes risk management policy and crisis response protocols, maintains the NOLS Accepted Field Practices, collaborates with each campus, the education and operations departments, and reviews marketing materials for accurate description and disclosure of risks inherent to NOLS courses. The risk management director consults with loss control experts, physicians, attorneys, other outdoor education professionals, and NOLS field instructors for insight into ways to improve risk management for all NOLS operations.

FIELD STAFFING OFFICE

This department selects and hires individuals to fill field instructor positions. Personnel in the field staffing office monitor field instructor performance, compliance with required certifications, and career and skill development. Field instructors are selected for positions based on experience, qualifications, competency, and interest.

CAMPUS PROGRAM TEAMS

Each NOLS campus has a program team consisting of the campus director, program manager (in some cases), and program supervisors who work with the risk management director. This team is responsible for risk management at the field level at their campus. The program team addresses risk management topics with field instructors during pre-course briefings and post course debriefings. The program team formulates specific risk management emphasis for courses and seasons. The program team inputs field risk incidents into the database, manages field report paperwork, monitors risk management concerns from field instructors, designs and implements emergency procedures specific to the campus, and provides input and review to the NOLS Accepted Field Practices. The program teams are critical to the evaluation process of instructor performance and make recommendations for promotion.

FIELD INSTRUCTORS

COURSE LEADER POSITION

Course leaders are experienced field instructors that have supervisory responsibility for a course while it is in the field. Staff are promoted to this position in an orderly advancement, having demonstrated requisite levels of skill, judgment, risk management knowledge, program expertise, and NOLS experience.

PATROL LEADER AND INSTRUCTOR POSITIONS

Field instructors in these positions directly influence the health and welfare of students in the field through their training, leadership, expertise, and experience.

STUDENTS

Students have important responsibilities for risk management in the field.

- Students are expected to read the information on the NOLS website about the course they are interested in and the expedition policies page of the NOLS website to determine if they meet the general requirements of a NOLS course and understand the rigors, risks, and remoteness of the particular course.
- Students and/or parents or guardians read and sign the NOLS Student Agreement that describes the inherent and other risks of participating on a NOLS course.

- Students, and in some cases their health care providers, complete the health history form and honestly describe their physical and psychological health.

Prior to the course departing for the field, instructors conduct an orientation with students that addresses various aspects of the course including travel conditions, living conditions, course environment, student and instructor responsibilities, NOLS policies and the course goals and learning objectives. There is particular emphasis on students' responsibilities for risk management for themselves and the group.

This entire process is intended to alert and inform the student that risks do exist and that risk management is a priority on a NOLS course.

Once in the field, the student has responsibility for managing risk within their abilities and is expected, under the direct and indirect supervision of the instructors, to learn and practice leadership, judgment, decision-making, and use the risk management practices taught on the course.

NOLS LEARNING OBJECTIVES

These objectives define the core curriculum taught on every NOLS expedition course. Each course provides fundamental knowledge, skills, and experience essential for successful wilderness travel and enjoyment of a wilderness environment.

- **Risk Management**: NOLS teaches risk management by applying leadership and wilderness skills and facilitating experiences to develop judgment. Students learn hazard identification, risk assessment, practice decision-making, develop situational awareness, learn injury and illness prevention, first aid/wilderness medicine, and emergency procedures.
- **Leadership**: NOLS teaches leadership as "situationally appropriate action that directs or guides your group to set and achieve goals." Leadership is learned and practiced by using independent student group travel, designated leader opportunities, and having students serve their team as a self-leader, peer leader, and active follower to create a collaborative team atmosphere, what we call positive expedition behavior.
- **Wilderness Skills**: NOLS teaches the expedition skills necessary to live and travel in the wilderness. This includes, campsite selection, shelter and stove use, fire-building, sanitation and waste disposal, cooking, nutrition, equipment care, keeping warm and dry, route-finding/navigation, and the skills of the particular course such as backpacking, kayaking, horse packing, sailing, fishing, skiing, snowboarding, caving, or climbing.
- **Environmental Studies**: NOLS connects students to wild places. Students learn Leave No Trace camping, wilderness ethics, about ecosystems, flora and fauna identification, geology, weather, astronomy, land management strategies, cultural issues, and public service.

FIELD INSTRUCTOR TRAINING AND DEVELOPMENT

THE NOLS INSTRUCTOR COURSE

The NOLS Instructor Course, with curricula for mountain, river, sea kayak, horse packing, and sailing programs, is required for all field instructors. There is a rigorous application and review process to be selected for the instructor course. The curriculum of the instructor course covers the NOLS core curriculum, and students are observed and evaluated on their teaching and leadership abilities, their wilderness living and travel skills, and their hazard identification and risk assessment skills.

NOLS FIELD INSTRUCTOR SKILLS

These skills are listed in the Field Instructor Skills documents that describe NOLS' expectations and lists specific skills and qualifications for field instructors to work specific course types and to advance in their positions. Supervisors of field instructors refer to these documents when recommending promotion or advancement.

INSTRUCTOR TRAINING AND DEVELOPMENT

NOLS believes a key component to risk management is the continued development of a professional, experienced, and skilled instructor body. To this end NOLS offers and financially supports a variety of opportunities to further instructor development.

- **Field Instructor Levels of Responsibility:** There are three levels of field instructors; instructor, patrol leader and course leader. The instructor position is considered entry level. After demonstrating competence in skills, judgment, and risk management in their position (under the supervision of a course leader) the instructor can be promoted to the next level. Course leader is the highest level.

- **Technical Skill Development Seminars:** NOLS has extensive in-house training programs in wilderness skills such as avalanche awareness and forecasting, winter camping and travel, wilderness first responder, rock climbing, mountaineering, glacier travel, natural history, horse packing, canyoneering, sailing, rafting, canoeing, and sea and whitewater kayaking.

- **Leadership Skill Development Seminars:** NOLS provides in-house training in leadership, communication, group/expedition dynamics, educational techniques, ethical and legal issues, positive learning environments, and inclusion skills.

- **Instructor Development Funds:** NOLS offers funding to field instructors for personal expeditions or to attend external seminars and conferences. Through this funding it is expected that faculty will gain additional knowledge and experience in wilderness travel settings and technical situations, further develop judgment, gain greater experience and decision-making skills, and challenge personal abilities.

WILDERNESS MEDICINE REQUIREMENTS

Each NOLS field instructor must hold, at a minimum, a wilderness first responder (WFR) certification and current CPR certification.

The NOLS Wilderness Medicine department provides training for field instructors and the general public. The books, *NOLS Wilderness Medicine* and *The NOLS Wilderness Medicine Field Guide* written by former NOLS Wilderness Medicine Education Director Tod Schimelpfenig are used as field texts and first aid resources on NOLS courses.

NOLS maintains wilderness medical protocols that are co-authored by the NOLS medical advisor, NOLS Wilderness Medicine Education Director, and NOLS Risk Management Director. These protocols provide medical direction for field instructors if they face specific medical emergencies while in the wilderness.

ADMINISTRATIVE PROCESSES

ADMISSIONS

The expedition admissions department is often a student's first experience with the NOLS risk management program. Our pre-course information strives to accurately describe the format, curriculum, and risks associated with our courses. Admissions staff answer questions and help prospective students select courses that best fit their desires.

HEALTH REVIEW

The admission staff review the applicant's registration forms including the health history form. The purpose of health form and its review is to gather information for use in the event of an emergency, to help NOLS support students' health while on a course, and to identify potential concerns about an applicant's physical or mental capacity to participate on a remote wilderness expedition course. It is a student's responsibility to determine whether the course is appropriate, but NOLS reserves the right to deny admission. The NOLS health review specialist may seek additional information from students with pre-existing conditions and consult with the applicant's health care provider, the risk management director, or the NOLS medical advisor.

RISK MANAGEMENT AUDITS

NOLS audits its risk management performance on a regular basis through post-course debriefings, written evaluations by students and instructors, the risk management incident reporting process, and internal audits of risk management systems at each campus conducted by school leadership. NOLS also periodically enlists outside expertise to perform risk management audits on specific field programs.

ACCREDITATION

NOLS is accredited by the Association for Experiential Education, AdventureMark New Zealand, and the Gap Year

Association. The process for accreditation requires NOLS to periodically perform an extensive self-assessment and external review of systems, policies, and procedures that are measured against standards set for adventure programming. These accreditations are renewed on an established schedule.

RISK MANAGEMENT INCIDENT REVIEW PROCESS

The risk management incident database and incident review process are used to analyze and understand field injuries, illnesses, and near miss incidents to learn from these experiences and to inform and, if necessary, revise our field risk management practices.

EVALUATIONS

Evaluations examining all aspects of each course are routine at NOLS. We constantly work on improving this process. Performance evaluations of field instructors and students include the areas of risk management and leadership. Students complete a Course Quality Survey and each instructor team evaluates their course and the operational support systems. The risk management director writes an annual risk management report.

COURSE PAPERWORK

The instructors on each course are required to keep a course log that includes daily weather conditions, activities, names of student leaders, and any student challenges along with action taken. A class checklist is used to record the date a particular class was taught and by whom it was taught. Camp location information is recorded. Field injury, illness, and near miss reports and evacuation reports are used to record risk management incidents.

FIELD SUPPORT SERVICES

Robust field support services—equipment, rations, transportation, and emergency management systems—are essential to support our mission, manage risk, and achieve our educational goals.

EQUIPMENT

NOLS maintains a complete inventory of course equipment, and each student goes into the field well equipped. NOLS equipment is selected and/or designed to hold up under rugged conditions, setting a standard for functional expedition equipment. Students may bring their own equipment; however, it must meet NOLS standards.

RATIONS

Eating well is necessary to function at an optimal level in a wilderness setting and in the variety of conditions encountered on a course; adequate nutrition allows one to stay warm, be comfortable, and stay healthy. NOLS provides appropriate amounts and varieties of nutritious, high-energy foods and teaches students in the skill and science of maintaining nutrition on extended expeditions.

TRANSPORTATION

NOLS operates its own fleet of vans, pick-up trucks, busses and utility trailers to transport students and equipment to and from course areas. Vehicles are selected for their durability and are maintained regularly either by trained NOLS staff or reputable service centers. NOLS has a comprehensive transportation policy, which includes licensing requirements, vehicle maintenance procedures, and operating policies. All staff members who drive vehicles with NOLS students must have completed a defensive driving course and have been be familiar with the particular vehicle they drive.

EMERGENCY SUPPORT AND MANAGEMENT

Should a student become injured or sick during a course NOLS has developed an efficient and well-organized emergency response system to provide first aid and, if necessary, evacuate the student to medical care. However, the remoteness of our course areas can complicate emergency response. It is not uncommon to be 24 hours or more from advanced medical care. Weather and other variables can also hinder evacuation response resulting in delays in reaching medical care. Each course carries one or more communication devices for emergency notification. The most common devices are satellite phones and personal locator beacons (PLBs). Some courses also carry two-way radios and/or cell phones. These devices work well, but are subject to limitations due to the topography, atmospheric conditions, and technical limitations so they are not 100% reliable. Rapid evacuation from remote locations cannot be guaranteed.

- Field instructors prepare a written field evacuation report to detail their evacuation plan including contingencies and back-up plans.

- There are NOLS staff on duty 24 hours a day and are ready to receive emergency calls at all NOLS locations. NOLS has access to extensive evacuation resources both internally and through other agencies and can arrange evacuations.
- NOLS can respond to the student's needs once they are out of the field including phone calls to parents/guardians/family members and supporting access to medical care.

LEADERSHIP IN RISK MANAGEMENT

A risk management goal is to be a leader and resource of wilderness risk management practices.

NOLS offers risk management training courses for program administrators and offers consulting and specialized training for education, study abroad, adventure travel, scientific, guiding, and camp organizations, among others.

In 1994, in collaboration with other outdoor education organizations, NOLS was instrumental in creating the annual Wilderness Risk Management Conference (WRMC) to promote a collaborative exchange of risk management practices and ideas among wilderness, adventure, and outdoor education professionals. NOLS is the lead sponsor of the conference, which attracts 300 to 500+ attendees each year.

NOLS staff frequently speak at other conferences on risk management and wilderness medicine.

Data from the NOLS risk management incident database is periodically analyzed and published in peer reviewed journals to contribute to the fields of wilderness medicine and wilderness risk management.

NOLS RISK MANAGEMENT STATISTICS

The NOLS risk management incident database was started in September 1984 and contains records of injuries, illnesses and other related incidents that occur on courses. This database provides a valuable tool for analyzing the effectiveness of our risk management systems and procedures. The following table and graph is a summary of our recent risk management data.

NOLS INJURY AND ILLNESS STATISTICS

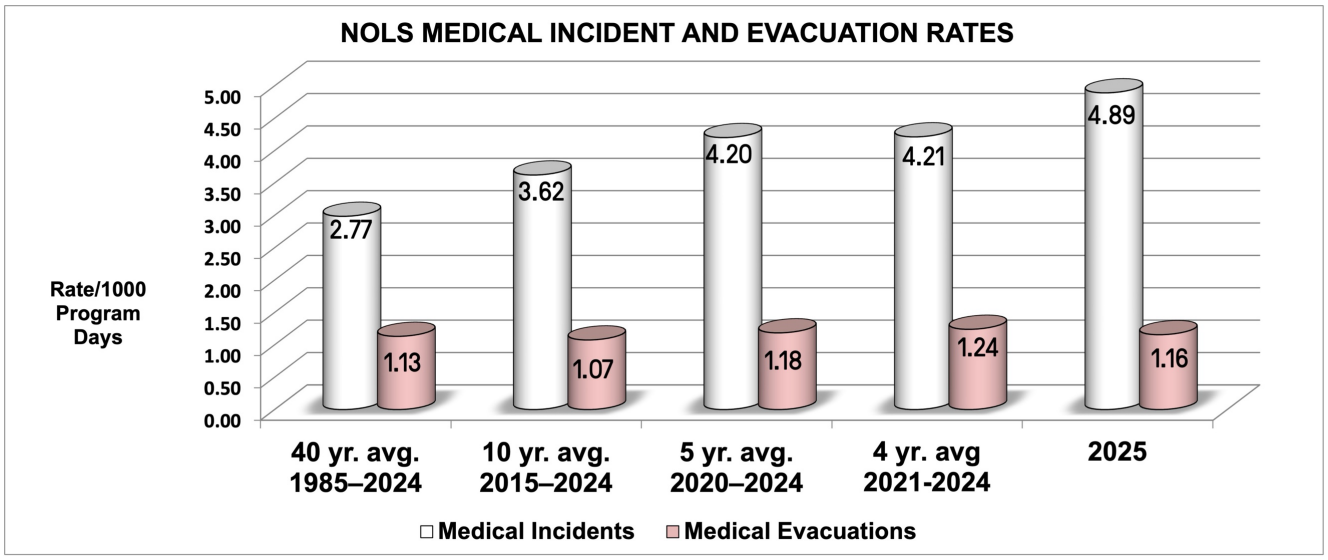
For period of fiscal years 2020–2025

INJURIES:	ILLNESSES:
• 4% of students are injured	• 8% of students become ill
• 36% of injured students are evacuated	• 25% of ill students are evacuated
• 34% of field medical incidents are injuries	• 66% of field medical incidents are illnesses
• 42% of injuries are sprains, strains, and tendon injuries	• 47% of illnesses are communicable, e.g., flu
• 41% of injuries are soft tissue injuries	
• 4% of injuries are fractures and dislocations	

We average 157 reportable injuries and 300 reportable illnesses per year. Most injuries are minor and include sprains and strains of knees and ankles and minor wounds and contusions. Most illnesses are gastrointestinal illnesses or minor allergies. It is rare for an injury or illness to be serious enough to require a night in the hospital.

On average 96% of students complete their course.

Less than one third of people with injuries or illnesses are evacuated from the field. We track these evacuations and other events as one measure of our risk management performance and to gain insight as to where we may need to focus our attention. The following chart displays our average evacuation rates.



FATALITIES AT NOLS

Since NOLS was founded in 1965, thirteen people have died on courses. No fatality is acceptable, but NOLS courses involve the pursuit of adventurous activities in rugged terrain in which there are real dangers. Wilderness adventure involves risk, which can become dangerous and potentially life-threatening due to the unpredictable forces of nature or an error in judgment.

NOLS FATALITY STATISTICS:

- Since 1985 there have been six fatalities, 139,989 students, and 5,509,014 program days[1].
- Fatality rate over 40 years per 1000 program days = 0.001
- Forty-year odds of a student dying on a NOLS course: 1:23,424.
- NOLS has had one fatal incident abroad.

For context the following statistics are from other sources.

Turner (2011)[2] American Public Health Association

- 254 deaths among 1,361,304 college students aged 18–24 at 4-year institutions.
- Odds of a student dying at college: 1:5,359
- 22.4 deaths per 100,000 college students on U.S. campuses.

The Forum on Education Abroad[3]

- 17.6 deaths per 100,000 college students studying abroad.

National Ski Area Association[4]

- Fatality rate winter 2020/2021 per 1000 skier/snowboarder days = 0.001
- There were 48 skier/snowboarder fatalities in the U.S. during the 2020/2021 season

LIST OF FATAL INCIDENTS AT NOLS:

1.	July 1966:	A student died in a mountaineering fall in the Wind River Mountains, Wyoming.
2.	June 1971:	A student died in an unroped crevasse fall on Denali, Alaska.
3.	June 1972:	A student drowned in a canoe incident on the Green River, Wyoming.
4-6.	January 1974:	One instructor and two students were killed in an avalanche in the Teton Range, Wyoming.

[1] Program day is 1 person on a course for 1 day, e.g. 10 students and 2 instructors on a 30-day course is 360 program days

[2] Turner, J. (2011) Leading Causes of Mortality Among American College Students at 4-Year Institutions. American Public Health Association, Annual Meeting, November 2011, Washington, D.C.

[3] Comparing College Student Mortality Rates in the U.S. With Mortality Rates While Abroad, (2018). The Forum on Education Abroad, Carlisle, PA.

[4] National Ski Areas Association Fact Sheet: Facts About Skiing/Snowboarding Safety, (2018), http://www.nsaa.org/media/348423/Fatality_Fact_Sheet_2018.pdf viewed January 4, 2019

7.	July 1979:	A student was killed in an unroped fall in the North Cascade Mountains, Washington.
8.	July 1989:	A student was killed by rock fall in the Wind River Mountains, Wyoming.
9.	December 1992:	A student was killed by an avalanche in the Absaroka Mountains, Wyoming.
10.	June 1996:	A student was killed from a head injury during a river crossing in the Absaroka Mountains, Wyoming.
11.	July 1999:	A student presumably fell into a moulin and died on the Matanuska Glacier, Alaska.
12.	September 2011:	A student slipped and fell down a steep slope while backpacking in India.
13.	August 2022:	A student died from a lightning strike in the Absaroka Mountains, Wyoming.

The following published papers co-authored by NOLS staff are available on request.

Wilderness Medical Society Clinical Practice Guidelines on Anaphylaxis, F. Gaudi, Johnson, D, DiLorenzo, K, Anderson, A, Musi, M., Schimelpfenig, T, Leemon, D, Blair-Smith, C., Lemery, J., (2022) *Wilderness and Environmental Medicine* 33(1): 75–91

Trends in Skin and Soft Tissue-related Injuries in NOLS Wilderness Expeditions from 1984-2012, Stanford, K., Phillips, L., Chang, Y., Leemon, D., Schimelpfenig, T., Harris, S., (2017) *Wilderness and Environmental Medicine*, 28, 307-312.

Injuries Related to Hiking with a Pack During National Outdoor Leadership School Courses: A Risk Factor Analysis, Hamonko, M., McIntosh, S., Schimelpfenig, T., Leemon, D., (2011), *Wilderness and Environmental Medicine*, 22, 2-6

Ultraviolet Keratitis Among Mountaineers and Outdoor Recreationalists, McIntosh, S., Guercio, B., Tabin, G., Leemon, D., Schimelpfenig, T., (2011) *Wilderness and Environmental Medicine*, 22, 144-147

Medical Incident and Evacuations on Wilderness Expeditions, McIntosh, S., Leemon, D., Visitacion, J., Schimelpfenig, T., Fosnocht, D., (2007) *Wilderness and Environmental Medicine*, 18, 298-304.

CONCLUSION

There is a risk management consciousness that pervades NOLS and guides every step of the school's operations. Risk management has always been, and will continue to be, a priority at NOLS. Nevertheless, no matter how many systems an organization employs, and no matter how stringently those systems are followed, incidents will happen. We cannot—nor can anyone—reduce that possibility to zero. We accept risk as an integral part of the learning process and of the environments through which we travel, but we do not seek risk for the sake of risk. Our wilderness classrooms have no handrails, emergency situations can be complex and take time to resolve, and students on our courses must accept the fact that risk of injury or death exists during wilderness travel and recreation in remote areas.