

CALIFORNIA SKI RESORT SAFETY: THE CASE FOR TRANSPARENCY LEGISLATION

THE PROBLEM: A SAFETY INFORMATION GAP AND SIGNIFICANT UNDEFINED PERSONAL INJURY AND PUBLIC HEALTH RISK

There is a clear and significant but as of yet undefined personal injury and public safety risk at California's 26 ski resorts. More than 11,500 injured skiers and snowboarders are seen in California hospital emergency rooms and more than 600 are admitted to California hospitals every year. There is no regulation or independent oversight of safety on all resort slopes and trails. There is significant variability and inadequacy in the accident prevention and injury reduction practices employed by the resorts. They withhold nearly all information about accidents, injuries and safety practices from the public and the government. Appropriate and well-informed safety oversight and good public policy are impossible without access to the injury and safety information withheld by the resorts. Consumers are not fully informed of their overall safety risks and are unable to consider the risk of injury at specific resorts when selecting ski areas for themselves and their families.

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EXECUTIVE SUMMARY

Ski and snowboard injuries at California’s mountain resorts constitute a far more significant public health and safety risk than previously recognized, represented, or apparent to skiers, public health officials and policymakers.

Limited injury statistics now available from statewide hospital discharge and emergency room (ER) visit data expose the magnitude of a significant gap in available ski resort accident, injury and safety information. The adjusted data identifies a minimum annual five-year average of more than 11,500 ER visits and 630 hospital discharges for ski injuries incurred at California resorts. Fourteen percent or more of these injuries are “serious” (traumatic brain, spinal cord and vertebral column) as defined by the National Ski Areas Association (NSAA). This data strongly suggests the NSAA reported annual average of only 40 deaths and 50 “serious” injuries nationwide greatly understates the actual safety risk. California resorts suppress recognition of this “gap” by denying access to resort safety information.

A 2011 independent onsite survey of accident prevention and injury reduction practices employed at 25 California ski resorts documents considerable variability, inconsistency and inadequacy in these practices between and within resorts. These findings suggest significant differences in the injury risk from resort to resort. The Primary Assumption of Risk and Inherent Risk Doctrine in California case law as well as court enforcement of negligence liability waivers strongly insulate the resorts from liability.

Other than lift inspections by Cal/OSHA, there are no local, state or federal statutes, regulations or reporting requirements nor any industry standards for safety on the slopes and trails of all California resorts. Resort ski patrols are private emergency care responders and are not subject to state licensing, reporting or oversight. The claim by the California Ski Industry Association (CSIA) that the United States Forest Service (USFS) regulates and oversees resort safety is misleading. Only some of the resorts operate to some degree on USFS land under a Special Use Permit (Permit). The USFS is primarily a land use, not a public safety regulator. Safety related provisions in resort operating plans that are required by the Permits are limited, incomplete and vary from resort to resort. The USFS oversight of these provisions is also quite limited. The USFS does not track, review or know the number, severity or causes of the accidents and injuries that occur at any or all Permitted resorts.

The full magnitude and scope of the public health and safety risk at California ski resorts is clearly significant yet remains unknown to government and resort patrons. Public health officials and policymakers have inadequate information to evaluate and monitor public safety at ski resorts. Resort patrons, the vast majority of whom are occasional recreational skiers, do not have the information necessary to consider safety in their selection and use of resorts. Nevertheless, they are required by the resorts to agree to negligence liability waivers without being fully informed of the risks.

Experience in the automotive, health care and other industries clearly has demonstrated significant improvements in accident prevention and injury reduction resulting from public transparency of accident, injury and safety management information. In light of strong ski industry resistance, legislation requiring public disclosure or government reporting is needed to establish and assure vitally needed safety transparency at California ski resorts. Transparency will not alter resort liability protections. It will not in any way interfere with mountain operations. Contrary to concern expressed by the resorts, the

growing public interest in injury prevention in sports and recreation should make safety transparency a competitive advantage for individual resorts and the industry statewide.

THE CASE FOR TRANSPARENCY LEGISLATION

Industry Overview

For the 2012/2013 season, NSAA reported 477 resorts across the country with 57 to 60 million annual skier days (one skier for all or part of one day). The resorts generated an estimated (\$100 per patron per day) total revenue of \$5 to \$6 billion. California is reported to have 26 resorts with 5 to 6 million estimated annual skier days (NSAA source data are reported on a regional, not state-specific, basis.) and an estimated total revenue of more than half a billion dollars.

According to Ski Area Management Magazine, nationwide there are 8 million patrons who ski less than 9 days a season, totaling 24 million skier days. Only 500,000 patrons ski 20 days or more for a total of 18 million skier days. Clearly, most patrons are relatively infrequent visitors to the resorts. Many, if not most, patrons are quite inexperienced and believe laws, regulations and standards exist for safety on resort slopes and trails.

In recent years, California resorts have increasingly promoted themselves as family recreational facilities, inviting patrons of all ages and abilities, regardless of prior training or experience. Resorts have become recreational venues where beginners and advanced experts share many of the same slopes and trails. Expanded lift capacity has increased congestion on the trails. Snowmaking machines and slope grooming technologies have led to a significant increase in skier and snowboarder speeds as well as collisions on the slopes. So-called “terrain parks,” with manmade jumps and other features for performing aerial acrobatics encouraging untrained children to test their *courage and skills*, are included at nearly all ski areas. These manmade jumps and features are generally not engineered and do not meet any standard design criteria.

Magnitude and Scope of the Public Health and Safety Risk

Currently the full magnitude and scope of the public health and safety risk at California mountain resorts can only be approximated from limited, publicly accessible injury data. The Injury Surveillance and Epidemiology Section within the Safe and Active Communities (SAC) Branch of the California Department of Public Health (CDPH) has established a multi-year, statewide, online injury database (EpiCenter) using ICD-9 coded, hospital patient discharge and ER visit information (for California residents only) from the Office of Statewide Health Planning and Development (OSHPD). The EpiCenter database supports customized, injury-specific reports; however, only some of the applicable injury codes (unintentional falls from skis and snowboards) are exclusively specific to ski and snowboard injuries (See Appendix I). Many additional ski and snowboard injuries, such as those resulting from collisions, are reported in more broadly inclusive (all sports) injury codes and currently cannot be more specifically identified or quantified.

These data show that for the last five years the yearly injury averages for ski and snowboard falls alone are quite staggering at 8,050 ER visits and 441 hospital admissions. Adjusting these numbers to include conservative estimates of nonresident resort patrons and injuries included in the nonspecific ICD-9 codes increases the total to more than 11,500 ER visits and 630 hospital discharges per ski season in California. (See Appendix II.) EpiCenter reports include the anatomical location of injuries and indicate, based on these numbers, that no fewer than 1,680 (approximately 14 percent) of those injuries are traumatic brain, spinal and vertebral column. Significantly, even these numbers are underestimated. They do not include the unknown number of additional injuries where care was provided at mountain resort clinics, private doctors’ offices, urgent care facilities and ambulatory surgical centers. Additionally, they do not include data from the major trauma center in Reno, Nevada that serves the Lake Tahoe area resorts.

Comparative information from Canada’s more complete, single payer health care system utilizing specific ICD-10 coding exclusive to skier and snowboarder injuries (See Appendix III.), if applied to California skier day volumes,

suggests that the magnitude of ER visits and annual hospitalizations in California may well be as high as 20,000 and 750 respectively.

EpiCenter data also enables fatality reports from the CDPH Death Statistical Masterfile using ICD-10 codes that include but are not specific to ski and snowboard accidents. The most recent 10-year average of annual deaths reported for all applicable codes is 29. This number is consistent with the approximately 8 to 12 annual skiing and snowboarding deaths informally identified by media tracking. At 8 to 12 per year for 5 to 6 million skier days, the California fatality rate appears to be two to three or more times higher than the annual fatality rate reported by NSAA, an average of only 40 per 57 to 60 million skier days per year nationwide (See Appendix IV).

These California injury and fatality numbers paint a vastly different picture than the annual NSAA reported 50 “serious” injuries, 40 deaths and 2.5 total injuries per 1,000 skier days for the entire United States. (See Appendix IV). NSAA does not maintain a complete and verifiable national accident and injury database. Its statistics are extrapolated from voluntary resort surveys, incomplete insurance company reports and studies done at a single Vermont resort by in-house and industry-sponsored researchers

In light of resort and media promotion of snowboarding to children, adolescents, and young adults, these injury statistics are particularly alarming. The EpiCenter ER visit data (See Appendix I.) documents three times as many visits for falls from snowboards versus skis. In contrast to NSAA assertions that skiing and snowboarding are safe relative to other outdoor recreational activities, a 2008 Centers for Disease Control and Prevention study (“National Estimates of Outdoor Recreational Injuries Treated in Emergency Departments, United States, 2004–2005,” *Wilderness & Environmental Medicine*, Vol. 19, Issue 2, pages 91-98) reported **snowboarding injuries as the leading cause of ER visits nationally for all outdoor recreational activities across all states.**

The adjusted EpiCenter data includes at least 80 traumatic brain, spinal cord and vertebral column injuries severe enough to require hospital admission and 1600 or more seen in ERs during a 20-week ski season in California. However, these figures do not reflect the full scope of the problem. The severity, direct and indirect financial costs and short- and long-term disabilities resulting from many of these injuries are clearly substantial. EpiCenter hospital-payer reports for the two ski and snowboard specific injury codes indicate more than 22 percent of the associated medical care claims are born directly or indirectly by government (Medi-Cal, Medicare, other) and the public at large (uninsured). Of course, the private payer costs also are born more broadly by the general population through private insurance premiums. The life-altering impact of some of these injuries is clearly devastating. (See Appendix V.)

Absence of Resort Safety Statutes, Regulation or Oversight

Other than lift inspections by Cal/OSHA, there are no federal, state or local statutes, regulations or reporting requirements nor industry standards for safety on the slopes and trails of all California’s 26 mountain resorts.

Some California resorts operate to some extent on federal land and must obtain an annually renewable Special Use Permit (Permit) from the local U.S. Forest Service (USFS) District. As evidenced by the Permit application (See Appendix VIII.), the USFS is primarily a land use, not a public safety regulator. Its mission is “*to sustain the health, diversity and productivity of the national forest and grasslands to meet the needs of present and future generations*”. The USFS has no particular expertise in public or snow sport safety. **The USFS Permits only apply to the portions of resort operations on Federal land and the only authority or oversight responsibility that the USFS District acknowledges is for resort compliance with the Permit.** The USFS staffing is quite limited and staff often openly refer to permitted resorts as “partners,” reflecting more of a joint tenancy rather than landlord and tenant relationship. Compliance monitoring is most often done after the adverse consequences of a violation have occurred rather than before.

The USFS Permits do require permitted resorts to submit an annually updated operating plan that includes **only a very limited number of broadly categorized safety related operating provisions** (e.g. lift inspections, avalanche control, border management, ski patrol and first aid, search and rescue, general safety and sanitation) with no established

standards (except for lift machinery) or specifications. The Permit requirements and the safety related provisions of resort operating plans are far from U.S. casualty insurance industry recommendations for safety programs (see Appendix IX). For example, there are no management requirements such as: a documented and communicated leadership commitment to industry best safety practices; an identified Chief Safety Officer (vs Risk (liability) Manager); compliance monitoring, performance measurement and reporting; accident reviews and remediation; and patron safety related personnel policies (e.g. language proficiency requirements and drug testing for lift operators, whistle blower protections etc.). Other than the limited broad categories, the Permit requires no slope and trail accident prevention and injury reduction policies, procedures, practices, methods and materials such as: staff and patron helmet use; child lift use supervision; standardized signage (shape, size, color, symbols and placement); standard terrain difficulty rating criteria; fixed obstacle impact padding and protective barriers; breakaway sign posts and fencing; hazard warning and marking; moving equipment signals and barriers; trail intersection design and traffic merger controls; inadvertent hazardous terrain and terrain park entry or boundary exit barriers; and terrain park acrobatic feature engineering; etc.

The resorts are generally only required to notify the USFS of deaths or emergency helicopter evacuations from USFS land. The USFS does not track, review or know the number, severity and causes of accidents and injuries that occur at Permitted resorts. Approval of the content of resort operating plan submissions is left almost entirely to the judgment of the individual USFS District Forrester Manager. Review of a small number of resort operating plans obtained by a Freedom of Information Act (FOIA) request from the USFS reveals a great deal of variability from resort to resort in the inclusiveness and specificity of any safety related provisions.

In a recent NBC Bay Area television interview, the California Ski Industry Association President stated that California's ski resorts have "voluminous and detailed safety plans" that they make available to the public on request. After numerous written and verbal requests over several years, including recently videotaped requests by NBC Bay Area investigative reporters, no resort has produced a safety plan or any documentation of consistently employed accident prevention and injury reduction management and mountain operation policies, procedures and practices. The resorts also refuse to make available their USFS required operating plans, suggesting use of the FOIA to obtain them from the USFS.

Inadequacy, Variability and Inconsistency in Resort Safety Practices

In the absence of public safety oversight or publicly accessible safety statistics and information, skiers and public safety officials must rely on the individual ski area to employ the accident prevention and injury reduction policies, procedures, practices, methods and materials they choose. A 2011 independent onsite spot survey of 25 of California's 26 resorts, conducted by the SnowSport Safety Foundation, documented significant inadequacies, variability and inconsistency within and between resorts in their use of known best practice accident prevention and injury reduction methods and materials. (See Appendix VI.) The survey revealed numerous apparent safety deficits, including documentation that just three of the 25 California resorts have safety bars on all of their lifts and **all** ski area operators use insufficient protective padding on lift towers and other manmade obstacles located directly in the paths of skiers and snowboarders – padding that appears to be substantial, but which only cushions impacts up to five to seven miles per hour. The average intermediate skier routinely travels at speeds exceeding 25 miles per hour. ¹

The resorts strongly promote a "Skier Responsibility Code" and consistently attribute almost all accidents and injuries to irresponsible skier behavior or deficiencies in skier preparation, knowledge, skills, judgment or equipment. Certainly, these are important contributors to many accidents; however, the failure to employ known and proven slope and trail accident prevention and injury reduction best practices is known to be a substantial contributor to many serious injuries.²

¹ J.E. Shealy, C.F. Ettliger, and R.J. Johnson, "How Fast Do Winter Sports Participants Travel on Alpine Slopes"; *Skiing Trauma and Safety*, 15th Volume (ASTM stock number STP 14610; Robert Johnson, Jasper E. Shealy, and M.Georg Ahlbaumer, ed.

² Penniman, D., "The Custom and Practice for Identification and Mitigation of Common Hazards at U.S. Ski Areas – An Opportunity for Standards," *Skiing Trauma and Safety: Ninth International Symposium, ASTM STP 1182*, Robert J. Johnson, C.D. Mote, Jr., and John Zelcer, Eds., American Society for Testing and Materials 1993, pp. 215-228.

^{3 4} The resorts do not have a “Ski Area Responsibility Code”. They make no mention of or any commitment to resort accident prevention, injury reduction and hazard management planning or practices. **Patron safety should be a responsibility shared by patrons and the resorts.**

The Doctrine of Primary Assumption Risk and Inherent Risk in California case law as well as court enforcement of the negligence liability waivers patrons must agree to when purchasing a ticket or a season pass, strongly insulate the resorts from legal liability. Resorts have a very limited Duty of Care. As an example, resorts have no legal obligation to warn or protect patrons from known natural hazards within a resort, even after the severe injury or death of a patron who has encountered the hazard.

No Ski Patrol Certification Requirements or Oversight

Resort ski patrols are private emergency medical responders who are not subject to minimum qualification or certification requirements by the Emergency Medical Services Authority (EMSA). Most patrollers voluntarily seek more advanced training; however, at ski resorts on USFS land, the sole requirement for patrollers is to have basic Red Cross advanced first-aid cards. On private land, there are no emergency responder requirements. Patrollers routinely complete incident reports (See Appendix VII.) that document accident details (such as the mechanism of injury) and the emergency responder care provided. Those reports are not made part of the EMSA database and are withheld from government agency oversight.

Growing Public Interest and Government Focus on Injury Prevention

In recent years, there has been growing public interest in accident and injury prevention in outdoor sports and recreation, particularly for children. The overall relative frequency of ski injuries for children is reported to be 50 percent or more than it is for adults. ⁵ The delayed emergence of long-term permanent disabilities from concussions and other injuries is receiving increasing public attention. As a result, public and government focus on preventing sports and outdoor recreational injuries is increasing. The CDPH has established the Safe and Active Communities (SAC) Branch that is charged with identifying injury prevention opportunities and supporting community-based responses. Effective prevention cannot be undertaken without accurate accident and injury data as well as the related information to identify remediable causes. Only the ski resorts have access to the requisite data and information for skiing and snowboarding.

Data Transparency Should Improve Resort Safety and Marketability without Significant Cost or Any Interference with Resort Operations

California’s ski and snow sport industry is indisputably a cornerstone of the state’s winter tourism economy. By instituting public safety oversight at resorts, the marketability of California’s winter sports industry as a family attraction would likely improve. As happened as a result of safety transparency in the automobile manufacturing industry, effective safety design and management could become a competitive advantage for California’s ski resorts.

Even small, incremental accident prevention improvements have been demonstrated to yield measurable reductions in the number and severity of injuries for high-volume activities with significant risk of injury. Transparency of injury and

³ Penniman, D., “Standard Methods and Materials for Mitigating Injuries from Impact with Fixed Obstacles at U.S. Ski Areas,” *Skiing Trauma and Safety: Tenth Volume, ASTM STP 1266*, C.D. Mote, Jr., Robert J. Johnson, Wolfhart Hauser, and Peter S. Schaff, Eds., American Society for Testing and Materials 1996, pp. 380-387.

⁴ Penniman, D., “Customs and Practices at U.S. Ski Areas for Mitigating Common Hazards through Trail Configuration and Maintenance,” *Skiing Trauma and Safety: Twelfth Volume, ASTM STP 1345*, Robert J. Johnson, Ed., American Society for Testing and Materials, West Conshohocken, PA 1999, 35-44.

⁵ *Journal of Injury Prevention*, 1996 Volume 2:286-289

fatality data is the norm in most other industries and public sector services with significant injury risk, including hospital services and vehicular transportation. The subsequent reduction in automobile accident deaths and injuries is well documented and widely acknowledged. Subsequent to health outcome transparency, health care organizations also have made and acknowledged significant reductions in accidents and improvements in outcomes.

There is a critical need for transparent and credible information on ski resort accidents and injuries as well as accident prevention and injury reduction policies, procedures, methods and materials. Similar to the initial resistance in other industries, some ski resort operators contend that skiing is subject to too many uncontrollable variables, particularly the irresponsible or risk-seeking behavior of their patrons, for safety to be significantly improved by the consistent employment of best practice accident prevention and injury reduction practices on their slopes and trails. In addition to numerous anecdotal examples of preventable accidents, there is at least one unpublished experiment that also suggest otherwise.⁶ However, given the professed importance resorts give to patron safety, they should be conducting controlled studies using transparent credible data to validate or disprove the benefit of best practice accident prevention and injury reduction practices on their slopes and trails.

Public access to resort specific accident and injury information as well as resort disclosure of the safety policies, procedures, methods and materials they employ will: (1) enable consumers to consider safety when selecting resorts for themselves and their families; (2) enable public health officials and policymakers to assess and monitor the public health and safety risks at ski resorts; (3) encourage resorts to try to make safety improvements; and (4) provide data for public and private accident prevention and injury reduction research.

Safety transparency will not change current resort legal liability protections. It would not, in any way, alter the California case law Primary Assumption of Risk and Inherent Risk Doctrine or the California courts' enforcement of resort required negligence liability waivers. In fact, complete disclosure of safety risks should strengthen the enforceability of the waivers. **Safety transparency will not, in any way, interfere with resort operations.**

Legislation Is Needed to Initiate and Maintain Public Access to Ski Safety Information

During the past several years, there have been several legislative attempts to study ski resort safety, institute state government agency reporting or require public disclosure of resort injury and safety information. In November 2008, the California Assembly Health Committee held a hearing on mountain resort safety at which accident victims with severe injuries, parents, safety experts and resort representatives testified. In early 2009, Assembly Bill 990 was introduced to address some of the safety concerns raised at that hearing. There are numerous anecdotal reports of preventable injuries and many observations of unaddressed hazards on the slopes. However, until now, the withholding of information by resorts has perpetuated a lack of data and information to substantiate the need for safety transparency legislation.

Statewide ER visit and hospital discharge data specific to ski injuries and a survey of resort slope and trail accident prevention and injury reduction practices point to far more significant public health and safety risks than were previously apparent to skiers, public health officials and policymakers. Resort specific accident information, as well as accident prevention and injury reduction plans and programs, must be made publicly accessible to reveal the full magnitude and scope of the public safety and personal injury risk as well as opportunities to reduce the number of deaths and injuries. Given the ski industry's resistance, there is a clear need for legislation requiring: (1) public health agency reporting or public disclosure of verifiable resort accident and injury statistics and related information; (2) public health agency reporting or public disclosure of the specific accident prevention and injury reduction plans, policies, practices, methods and materials employed at each resort; and (3) government oversight of ski patroller qualifications and performance. These requirements would not mandate or in any way interfere with how resorts run their businesses or their mountain operations. It would only require they provide safety information to which the public is entitled and government needs to provide appropriate oversight. Ski resort **safety transparency is a public health issue.** Such legislation would have little, if any, incremental cost for state government. Public injury surveillance

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Communication with Dick Penniman regarding White Pines Resort

and control is already the Department of Public Health's responsibility and funded activity. The EMSA already coordinates and provides oversight of emergency medical services statewide. Any incremental costs to the state would be more than offset by reduction in costs of state government medical care program funded ER visits, hospitalizations and the long-term care of victims with severe injuries. The legislation would create little, if any, cost for the resorts and would not in any way interfere with their operations or legal liability protections.

Conclusion

Given ski industry resistance, there is a clear need for legislation requiring: (1) ski resort public health agency reporting or public disclosure of verifiable resort accident and injury statistics and related information; (2) ski resort public health agency reporting or public disclosure of the specific accident prevention and injury reduction plans, programs, policies, practices, methods and materials employed at each resort; (3) government oversight of ski patrol qualifications and the emergency medical care provided to resort patrons. With the passage of such legislation, **California consumers will gain access to relevant, reliable information critical to informed choices and decision-making about their personal and family safety. Public health officials and policymakers will have the requisite information to provide oversight and monitor public safety at ski resorts. Public and private researchers will have the necessary data for accident-prevention and injury-reduction research.**

Note: All references to ski and skiing include snowboarding and other upright downhill snow sports.

APPENDICES

Appendix I:	EpiCenter "Raw" Data
Appendix II:	EpiCenter "Adjusted" Data
Appendix III:	Comparative Canadian Data
Appendix IV:	NSAA Facts and Statistics
Appendix V:	Matt Calvert Story
Appendix VI:	California Mountain Resort Safety Report Executive Summary and Summary Score Sheet
Appendix VII:	Sample Resort Incident Report
Appendix VIII:	U.S. Department of Agriculture Forest Service, Ski Area term Special Use Permit
Appendix IX:	The Hartford Loss Control Department - Outline of a Model Safety Program