

Injury and Illness in Camps

Barry Garst, Ph.D. American Camp Association
Linda Erceg, PHN Concordia Village Camps



Camp experiences enrich children's lives. Although camp experiences contribute to a variety of positive youth

developmental outcomes (Bialeschki, Henderson, & James, 2007), camp experiences also pose a risk for youth because of exposure to injuries and illnesses (Erceg, Garst, Powell, & Yard, 2006). Injury is a leading cause of the death of children (Centers for Disease Control and Prevention, 2012), and childhood illness has a range of negative health, social, and financial impacts (Peden, McGee, & Krug, 2002). Reducing the incidence of injuries and illness at camp is central to the provision of high-quality camp experiences (Association of Camp Nurses, 2013). Understanding when, where, and how injuries and illness occur in camps creates an opportunity for camp administrators and healthcare providers to improve camp safety by implementing effective practices to better manage risk.

Collecting accurate incidence data is the first step in preventing illness and injury (Association of Camp Nurses, 2013). In fact, the American Academy of Pediatrics (2012) recommends that camps use a health record system that documents camper and staff illnesses and injuries and that allows camp administrators to identify the camp's illness and injury profile. Many camps look to the American Camp Association's accreditation program for guidance regarding appropriate camp healthcare standards (2012), and one standard (HW.21) directs camps to maintain a recordkeeping system in which information about injuries and illnesses is permanently recorded. Although some camps have processes for regularly reviewing health record logs, the camp community has lacked effective benchmarks for injury and illness monitoring.

Research Says

- Regulations differ greatly between states and little quantifiable information is available on deaths, injuries, or illness (General Accounting Office, 1989).
- Asnes, Feldman, & Gersony (1974) analyzed 1,412 consecutive physician-camper encounters at a traditional camp during one summer. Upper-respiratory tract infections were the most frequent reason for seeking medical attention, followed by dermatologic, gastrointestinal, and skeletomuscular conditions. The researchers found that the limited availability of past medical information concerning campers, absence of routine laboratory facilities, isolation from specialty consultation, and an informal accessible infirmary were common characteristics of camp healthcare.
- In one of the few longitudinal studies on camp-related injuries and illnesses, Rauckhorst and Aroian (1998) examined illnesses and injuries at three summer camps over a 13-year period between 1977 and 1990 to understand the relationship between age, developmental level, and gender and campers' use of camp health facilities. Accidents and injuries, communicable diseases, discomfort-related problems, and allergies were the most frequent reasons for health center visits. Gender was found to have a significant effect on midseason and odd-time visits, visits for accidents/injuries, and constitutional symptoms.
- Trachtman, Woloski-Wruble, and Kilimnick (1994) studied treatment provided over a 4-week period at an overnight camp for children ages 9 to 16 years. Younger children and girls were more likely to seek medical help. The most

common presenting complaints involved physical injuries related to sports activities, followed by a wide range of upper respiratory difficulties, such as sore throat, conjunctivitis, and stuffed nose. Aside from increases in minor sports-related injuries, the study found that the health problems of children attending camp were not significantly different in type or severity from those they experience at home.

- Elliot, Elliott, and Bixby (2003) evaluated medical incidents at a canoe and backpacking camp during one summer. Canoe groups were no more at risk for injury than backpacking groups, and campers reported more incidents that staff regardless of sex or location of injury.
- Papageorgiou, Mavromatis, and Kosta (2006) studied summer camp injuries at camps in Greece and developed a typology of eight injury classifications including (1) cut/wound to the toe injuries, (2) thermal injuries, (3) fractures, (4) cut/wound to the knee injuries, (5) sprained shoulders, (6) being struck by a ball, (7) sprained ankle, and (8) bites. Data regarding the causes of injury were not collected.
- Erceg and Brodin (2012) used a three-week convenience sample of logged Health Center entries from three residential camps for their descriptive study that rank ordered the reasons campers and staff sought healthcare. Headache was most frequently mentioned followed by wounds, then general aches/stains, and respiratory problems. Unexpected findings included the need to address sleep issues and evaluate access by minors to their “as needed” (prn) medications. A post-summer audit of individual health documentation was suggested to gain deeper understanding of specific injury and illness events.
- The American Camp Association conducted a five-year benchmarking study of injuries and illnesses in a sample of U.S. day and resident camps from 2006-2010 (Garst, Erceg, & Walton, in press), which represented the largest

national study of camp-related injuries and illnesses. The study produced the following findings:

- Both day and resident camps reported very low rates of camper and staff injuries. Injuries most often involved the lower extremities and most injuries—classified as musculoskeletal—occurred during planned camp activities such as playing a sport/game. Sprains and strains topped the list of diagnoses most likely to take campers and staff away from camp for four or more hours.
- The likelihood of getting ill at camp was greater than the likelihood of injury at camp. Campers and staff in day camps tended to have lower rates of illness than campers and staff involved in resident camps. In some study years illnesses associated with the respiratory tract were most prevalent and in other study years illnesses associated with the gastrointestinal tract were most prevalent.
- Many injury and illness events are preventable if camp administrators and healthcare staff are aware of and address specific risk factors. The most common risk factors for camp injuries included: slips, trips, and falls; failure to use protective equipment; and improper supervision. The most common risk factors for illnesses included transmitting communicable illness from person to person and arriving at camp with an illness.

Bottom Line

Healthy communities and quality program providers alike rely on a strong evidence base for decision-making and planning (Erceg, 2011). Studies of injuries and illnesses in camps over the past two decades prove that injury and illness monitoring is a viable and effective strategy for both identifying

injury and illness events for campers and staff and also for identifying opportunities for intervention and prevention. Furthermore, the American Camp Association's Healthy Camp Study (2011) provided national benchmarks for camper and staff injuries and illnesses in day and resident camps, along with specific risk factors that could be targeted to reduce the likelihood of injuries and illnesses. Once camps address adverse events that are largely preventable, more resources can be devoted in response to incidents that are more difficult to control.

Resources

American Camp Association (2011). *Healthy camp study impact report: Promoting health and wellness among youth and staff through a systematic surveillance process in day and resident camps.*

www.acacamps.org/sites/default/files/images/education/HealthyCampStudyImpactReport.pdf. Accessed October 27, 2013.

American Camp Association. (2012). *Accreditation Process Guide*. Martinsville, In: American Camp Association.

Asnes, R.S., Feldman, B., & Gersony, W.M. (1974). The medical care of children at summer camps. An evaluation of 1,412 infirmary visits. *American Journal of Diseases of Children*, 128(1), 64-66.

Association of Camp Nurses. (2013). Hallmarks of a healthy camp community. *CompassPoint*, 23(2), 7-8.

American Academy of Pediatrics. (2011). *Policy Statement—Creating Healthy Camp Experiences.* <http://pediatrics.aappublications.org/content/early/2011/03/28/peds.2011-0267>. Accessed November 10, 2012.

Bialeschki, M.D., Henderson, K.A., & James, P.A. (2007). Camp experiences and developmental outcomes for youth. *Child and Adolescent Psychiatric Clinics of North America*, 16, 769-788.

Centers for Disease Control and Prevention. (2012). *Ten Leading Causes of Death and Injury.*

www.cdc.gov/injury/wisqars/LeadingCauses.html. Accessed November 10, 2012.

Elliot, T.B., Elliot, B.A., Bixby, M.R. (2003). Risk factors associated with camp accidents. *Wilderness and Environmental Medicine*, 14, 2-8.

Erceg L.E. (2011). Healthy camp people 2020. *CompassPoint*, 21(2): 3-7.

Erceg, L. E. & Brodin, R.J. (2012). Why campers and staff seek care from health center staff. *CompassPoint*, 22(3): 13-16.

Erceg, L.E., Garst, B.A., Powell, G., & Yard, E. (2009). An injury and illness surveillance program for children and staff: Improving the safety of youth settings. *Journal of Park and Recreation Administration*, 27(4), 121-132.

Garst, B., Erceg, L., & Walton, E. (in press). Injury and illness benchmarking and prevention for children and staff attending U.S. camps: Promising practices and policy implications. *Journal of Applied Research on Children*.

General Accounting Office. (1989). *Youth Camps: Nationwide and State Data on Health Lacking. Report to U.S. House of Representatives, Committee on Education and Labor (GAO/HRD-89-140).* www.gao.gov/cgi-bin/getrpt?GAO/HRD-89-140. Accessed September 1, 2008.

Papageorgiou, P., Mavromatis, G., & Kosta, G. (2006). Summer camp injuries: A tool for safety planning at the summer camp. *World Leisure*. 3, 54-61.

Peden, M., McGee, K., & Krug, E. (2002). *Injury: A Leading Cause of Global Burden of Disease*. Geneva: World Health Organization.

Rauckhorst, L. & Aroian, J.F. (1998). Children's use of summer camp health facilities: a longitudinal study. *Journal of Pediatric Nursing*, 13(4), 200-209.

Trachtman H, Woloski-Wruble AC, Kilimnick, N. (1994). Pediatric practice in a summer sleep-away camp. *Clinical Pediatrics*, 33(11), 649-653.

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