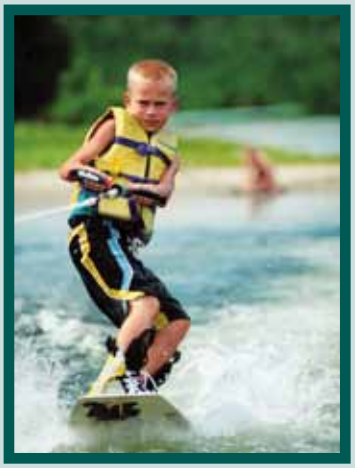



The Healthy Camp Study

Impact Report 2006-2010

Promoting Health and Wellness among Youth and Staff through a Systematic Surveillance Process in Day and Resident Camps







american CAMP association®

SPONSOR ACKNOWLEDGEMENT

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The Healthy Camp Study was funded by the Markel Insurance Company — an ACA Mission Partner. Since 1977, Markel has been a prominent business member of the American Camp Association. Over the past 33 years, Markel has made a commitment to help make camp a better and safer place for all. ACA proudly recognizes Markel's commitment to the health and wellness of youth and staff as demonstrated through their support of initiatives like the Healthy Camp Study.

SPECIAL THANKS TO PARTICIPATING CAMPS

From 2006 to 2010, hundreds of day and resident camps were engaged in the Healthy Camp Study, contributing to the success of the project. Although each camp's name is not listed to protect the confidentiality of the study, the American Camp Association expresses special thanks to all of the health care staff and directors who were committed to this project for one or more years. Without their involvement, the Healthy Camp Study would not have been possible.

ADVISORY COMMITTEE

The Healthy Camp Study Advisory Committee was comprised of a team of health care professionals and camp professionals who volunteered to guide the Healthy Camp Study during the five years of the project. ACA sincerely thanks Advisory Committee members for their dedication to the project and their contributions of time, energy, and expertise.

Susan Baird, RN, MPH (Chair)
R. Dawn Comstock, Ph.D.
Linda Erceg, RN, MS, PHN
Barry A. Garst, Ph.D.
DD Gass
Mary Marugg, RN
Natalie McIllvain
Marge Scanlin, Ed.D.
Sandra (Sam) Thompson, CPRP
Edward (Skip) Walton, MD, FACEP, FAAP
Ellen Yard, Ph.D.

ACA extends a special thank you to Ian Garner, Markel Liaison, for his continued support of the Advisory Committee and this project.

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EXECUTIVE SUMMARY

Beginning in 2006, and continuing through the summer of 2010, the American Camp Association undertook a five-year surveillance study of injuries and illnesses in day and resident camps. This project, called the Healthy Camp Study, is to date the only example of a long-term illness and injury surveillance study conducted with a representative sample of U.S. summer camps. The primary goal of this descriptive epidemiological study was to develop a national benchmark of the rates of injuries and illnesses among youth and staff in day and resident camps, against which individual camps could compare their own rates of injuries and illnesses. The secondary goal of the Healthy Camp Study was to identify opportunities for prevention and intervention, and to reduce the prevalence of injuries and illnesses in camps.

A convenience sample of U.S. day and resident camps was selected from the total population of U.S. camps for each year of the study, ranging from a low of 186 camps to a high of 295 camps. Health care staff at each participating camp entered weekly health data about camper and staff injuries and illnesses (i.e., an adverse event) using an online data entry system called CAMP RIO™ (Reporting Information Online). A reportable adverse event for campers was defined as an illness or injury that occurred during a camper's participation in the camp program (e.g., canoeing), and that removed and/or restricted the camper from their normal camp routine for ≥4 hours for resident camps and ≥1 hour for day camp. A reportable adverse event for staff was defined as an illness or injury that occurred during a staff member's contracted dates, and that removed and/or restricted the staff member from their normal camp responsibilities for ≥4 hours for resident camps and ≥1 hour for day camp. Adverse events were measured using rates, an approach common in epidemiological studies. A "rate" referred to the number of camper and staff adverse events that occur during a specified period of time which, for this study, was 1,000 camp days.

Both day and resident camps had a very low rate of injuries to campers and staff. The aggregate injury rates for the five study years were .47 injuries per 1,000 camp days for resident camps, and .42 injuries per 1,000 camp days for day camps. (In other words, there was less than one injury in every 2,000 days a camper or staff spent at camp.) These rates did not vary significantly across the study period. Injuries occurred at similar rates in campers and staff, with overall rates being lower in day campers and day camp staff. There was a trend toward campers being injured more frequently than staff, as would be expected given that campers were a younger, very active population. Data related to the who, what, when, where, and why of an injury are explored. Although the camp experience has lower risk than many other youth activities, the injury data indicate that many camp injuries can be prevented.

The aggregate illness rates for the five study years were 1.23 illnesses per 1,000 camp days for resident camps, and .83 illnesses per 1,000 camp days for day camps. An analysis of illness rates for campers and staff in day and resident camps indicated the following: (a) Campers and staff in both day and resident camps tended to have twice as many illness events than injury events; (b) Day camps tended to have fewer illness events than resident camps; (c) Resident campers had more illness events than resident camp staff, and this illness pattern was not replicated among day campers and their staff; (d) There was a notable increase in the illness rate for all categories except for resident staff in 2009, an increase attributed to the national H1N1 outbreak; and (e) There appears to be an increasing trend in the illness rate over time within both the camper and staff populations.

Four online courses were developed to reduce the prevalence of injuries and illnesses in participating camps, based on points of intervention identified after the first two years of the study. These courses targeted prevention strategies including: coughing and sneezing into an arm or sleeve to reduce the transmission of communicable illness, use of appropriate footwear to reduce slips/trips/falls, use of proper knife handling and storing techniques to reduce cuts from knives and other sharp objects, and appropriate use of protective equipment during camp activities. Approximately 11,300 directors, staff, and volunteers completed the online courses as a part of either pre-service or in-service training from 2008 to 2010. A set of promising practices for injury and illness prevention was developed based on the results of the study, and on feedback from participating camps regarding improved health care procedures and policies that resulted from study participation.

INTRODUCTION AND PROJECT OVERVIEW

Providing safe, high-quality experiences for children, adolescents, and adults is of paramount importance to the camp community. In an era of accountability and high expectations from program participants, parents, and the public, the challenge seems to be identifying the most effective strategies for program safety and quality. Over the past 25 years, childhood injury and illness in the United States has been substantially reduced through the concerted effort of professionals in the areas of health surveillance, intervention, and evaluation (Grossman, 2000). Camps can benefit from what has been learned from surveillance programs that have monitored the injuries and illnesses that occur in youth and adult programs. The systematic exploration of when, where, and how creates an opportunity for administrators to improve safety by understanding the trends within their own program, and by taking proactive approaches to better manage risk (Erceg, Garst, Powell, & Yard, 2009).

The American Camp Association® (ACA) provides an accreditation program for camps, with more than 300 standards related to health, safety, and programming. One of these standards requires that camps maintain appropriate record keeping (i.e., health record logs) of injuries and illnesses (American Camp Association, 2007). The ACA accreditation process has been a driver for injury and illness surveillance, as some camps have implemented processes for regularly reviewing health record logs. As a whole, however, camps have lacked a reliable surveillance methodology (Erceg, Garst, Powell, & Yard, 2009).

In 2006, the American Camp Association undertook a five-year surveillance study of injuries and illnesses in day and resident camps. The epidemiological use of the term "surveillance" referred to the collection of data on who, when, where, and how people became diseased or injured (Robertson, 2007). The Healthy Camp Study is, to date, the only implementation of a long-term illness and injury surveillance study in a representative sample of U.S. summer camps. By using a successful methodology, similar to that used in other national injury surveillance projects such as the National Collegiate Athletic Association Injury Surveillance System (NCAA ISS), the Healthy Camp Study sought to monitor illnesses and injuries sustained by summer camp campers and staff, while identifying risk factors associated with such illnesses and injuries. Thus, the purpose of the program was to monitor illness and injury rates among campers and staff at U.S. summer camps, understand risk factors associated with such adverse events, and identify prevention strategies to reduce the incidence of camp injuries and illness. It was also believed that better information about injury and illness adverse events and prevention strategies would help camps improve the overall camper experience, improve staff effectiveness, and lower camp healthcare costs.

The Healthy Camp Study was conducted in cooperation with faculty and research assistants from the Center for Research and Policy at Nationwide Children's Hospital and The Ohio State University (OSU), including: R. Dawn Comstock, Ph.D., Associate Professor; Ellen E. Yard, Ph.D., Research Associate; Christy Collins, MA, Research Associate; and Natalie McIllvain, Research Assistant. The study was supported by the Healthy Camp Advisory Committee, a team of health care professionals and camp directors who guided the Healthy Camp Study during the five years of the project (see inside front cover.

Sample and Response Rates

All U.S. summer camps were eligible to participate in the Healthy Camp Study. A convenience sample of day and resident camps was collected each year of the study. Attempts were made to collect a representative sample through targeted recruitment, and partners including the Association of Camp Nurses and the National Recreation and Park Association were instrumental in the recruitment process. Markel Insurance Company also sent a notice to all of their camps with an invitation to participate in the study.

Day and resident camps were recruited across all five years of the project. It was important to involve both types of camps in the project because of several important differences between day and resident camps with regard to the injury/illness experiences of youth and staff participating in day camps versus the injury/illness experience of youth and staff participating in resident camps. First, day camps typically last roughly 6-8 hours in any given day, while resident camps operate 24/7 during a camp session. Secondly, activities offered during day and resident camps may differ, with greater numbers of higher risk activities offered by resident camps. And finally, because people live at resident camp, they are placed in closer and more prolonged contact with one another than is typical of the day camp experience.

The sample size for each year of the study reflects the number of camps who enrolled in the study (Table 1). Sample sizes ranged from 186 camps (low) to 295 camps (high). Camps could choose to participate in as many years of the study as desired. Each year some camps chose not to participate. Reasons cited for not participating included changes in camp administration or healthcare staff, over-burdened healthcare staff, and closing camp due to the economic downturn. The number of camps who submitted usable data for each of the applicable camp sessions (i.e., the response rate) ranged from 140 camps (low) to 180 camps (high)(Table 1). Because it is common for national injury surveillance studies to collect data from a sample of 100 sites, the sample sizes for each year of the Healthy Camp Study were considered robust

Table 1: Sample Size and Total Number of Camps Submitting Data for Each Year of the Healthy Camp Study (2006-2010)

Study Year	Sample Size (Day and Resident Camps Combined)	Response Rate (Number of Camps Submitting Data for Each Camp Session)
2006	186	140 (51 day; 89 resident)
2007	295	160 (50 day; 110 resident)
2008	236	179 (40 day; 139 resident)
2009	228	180 (42 day; 138 resident)
2010	200	163 (41 day; 122 resident)

Figure 1: CAMP RIO Online Reporting System

Session length for camps participating in the Healthy Camp Study was defined as short-term (less than 14 days) and long-term (15 or more days). Using these definitions, 50 percent of camps self-identified as short-term, 46 percent as long-term, and 4 percent did not respond. Data regarding a camp's geographic region was collected: 25 percent of participating camps were in the Mid-Atlantic Region, 24 percent were in the Mid-America Region, 17 percent were in the Southern Region, 16 percent were in the Northeast Region, and 15 percent were in the Western Region. International camps were excluded from the samples analyzed for this report.

Data Collection

An online reporting tool called CAMP RIO (Reporting Information Online) was used to perform surveillance of illness and injuries sustained by campers and staff over a ten-week period each summer from 2006 through (and including) 2010 (Figure 1). The epidemiological use of the term "surveillance" referred to the collection of data on who, when, where, and how people become ill or injured (Robertson, 2007) (Table 2).

Camps that expressed an interest in participating in the study were first asked to complete a camp demographics survey and to designate a "reporter." Reporters were most often nurses or other health care staff with first aid or wilderness first aid certification. After completing the demographics survey, camps were enrolled in the study and assigned a unique study ID. Beginning in 2007, camps that had participated in a prior year of the study were automatically re-enrolled for the next year unless they formally withdrew. Research staff from OSU emailed training packets and CAMP RIO user guides to all enrolled camps, and reporters at these camps were asked to contact the researchers if they had any questions. In return for participating, camps that reported data were informed that they would receive a copy of a national summary report, along with a camp-specific report that they could use to compare patterns of adverse events at their camp to patterns occurring nationally.

Every Monday throughout the ten-week study period (approximately early June through late August), reporters received an e-mail reminding them to log into CAMP RIO to complete a weekly exposure report and any applicable illness or injury reports. If a camp was not in session during any of the ten weeks, then the camp was asked to log in and report that they were not in session. Every time a reporter logged into CAMP RIO, they were able to access a screen where they could provide updated contact information.

A reportable **adverse event** for campers was defined as an illness or injury that occurred during a camper's participation in the camp program (e.g., canoeing), and that removed and/or restricted the camper from their normal camp routine for ≥4 hours for resident camps and ≥1 hour for day camp. A reportable adverse event for staff was defined as an illness or injury that occurred during a staff member's contracted dates, and that removed and/or restricted the staff member from their normal camp responsibilities for ≥4 hours for resident camps and ≥1 hour for day camp.

Health care staff from each participating camp entered the Web-based CAMP RIO system and entered weekly data about camp injuries and illness that met specific definitions for an "adverse event" (Table 2). A reportable adverse event for campers was defined as an illness or injury that occurred during a camper's participation in the camp program (e.g., canoeing), AND that removed and/or restricted the camper from their normal camp routine for ≥4 hours for resident camps and ≥1 hour for day camp. A reportable adverse event for staff was defined as an illness or injury that occurred during a staff member's contracted dates, AND that removed and/or restricted the staff member from their normal camp responsibilities for ≥4 hours for resident camps and ≥1 hour for day camp.

Additionally, for each adverse event reported, reporters completed an illness or injury report form that collected information about the affected individual (e.g., age, gender, etc.), information about the illness (e.g., signs, symptoms, etc.) or the injury (e.g., site, type, etc.), and information about the circumstances associated with the illness or injury (e.g., date and time of onset, use of protective equipment, etc.) (Table 2). RIO provided camps with the ability to view all data they had reported throughout the study, as well as the option to update reports with information that was not available at the time the initial report was submitted.

Data Analysis

The Healthy Camp Study was primarily a descriptive epidemiological study with results reported as rates. Two concepts important for understanding the results of this study include exposure and rate.

Exposure refers to the length of time a person was at camp (i.e., how long they were at risk for injury or illness). Children spending one week at camp had less exposure than children staying four or more weeks. The same held true for staff; the number of days a

Table 2: Types of Data Collected from Participating Camps in the Healthy Camp Study (2006–2010)

WHO (Data about the **person**)	• Age and sex • Role at camp • Pre-existing chronic health condition • Length of time at camp (this season)
WHEN/ WHERE (Data about the **incident**)	• Where the incident happened (included out-of-camp option) • Name of the activity in which the person was engaged when incident occurred • Time of day the incident occurred and during what week of camp • Mechanism(s) or object(s) influencing the incident, especially use/non-use of protective equipment • How long it took before the person returned to their camp routine • Relationship of the incident to an existing chronic health condition
WHAT/WHY (Data about the **injury/illness** and **context**)	• Diagnosis • Part(s) of body involved • Description of primary symptoms experienced • Presence of secondary injuries or illnesses as a result of this incident • Communicability assessment (for illness) • Credential of professional who treated the injury/illness • Experience of the data reporter (Had this person been trained to report data?) • Weather influences (e.g., rain, high humidity, extreme temperatures, altitude) • Participation in formal safety training preceding incident

staff member worked determined how long that person was exposed to risk of injury or illness. Exposure data for each injury or illness was based on the concept of a "camp day," defined as one camper or staff member at camp for one day. Camp days were expressed for both campers and staff. The number of camper camp days equaled the sum of the number of campers at camp each day during the past week. For example, if there were fifty campers on-site five days of the week, twenty campers on-site on the sixth day and no campers on-site the seventh day, then the camper exposure was 270 camper camp days. The number of staff camp days equaled the sum of the number of staff at camp each day during the past week. For example, if there were fifty staff present all seven days of the week, then the staff exposure was 350 staff camp days. Exposure data were reported using "per 1,000 camp days."

Rate refers to the number of adverse events that occurred during a specified period of time. Although many research studies report percent change, this study discusses changes in rates so it is sensitive to both the number of people at camp and the length of time each person was there. Using rates instead of percentages is common in epidemiological studies. To better understand this concept, imagine 1,000 campers and staff standing in front of you. Now imagine that your camp injury/illness rate per 1,000 camp days was 1.5. This means that given those 1,000 people, 1.5 of them would get so injured or ill on this day that it pulled them from their camp routine, thus meeting the definition for inclusion in this study.

Although many research studies report percent change, this study discusses changes in rates so it is sensitive to both the number of people at camp and the length of time each person was there. Using rates instead of percentages is common in epidemiological studies.

Reliability and Validity

Reliability and validity are two important concepts when considering the value of an injury/illness surveillance system like the Healthy Camp Study. Reliability (sometimes called precision) refers to the repeatability of a measurement (Robertson, 2007). Validity (sometimes called accuracy) refers to whether the concept or dimension that one is attempting to measure is actually being measured. To better understand reliability and validity, let's consider the example of a dart board. If an injury/illness surveillance system is reliable (i.e., precise) then the dart hits the same target every time. If it is not reliable, then the darts end up scattered all over the board, or even over several boards. If the system is valid (i.e., accurate), then the darts are all aiming for the bulls eye. If it is not valid, then the darts are aiming for the wrong point.

Let's expand this thinking to consider the example of the rate of injury in summer camps. A valid surveillance system will be set up properly and will correctly calculate the rate of injury. The Healthy Camp Study maximized validity by utilizing accepted definitions of injury and exposure, by having a large variety of camps from throughout the United States who participate, and by using a communication system of automated alerts that let participating camps know if they may have entered incorrect information.

Still on the topic of the rate of injury in summer camps, let's consider reliability. A reliable surveillance system will reproduce a fairly consistent rate of injury that does not vary wildly from week-to-week or year-to-year. The Healthy Camp Study maximized reliability by having large numbers of participating camps that provided for consistent averages. Also, the use of various incentives kept camps involved and reporting for an entire season. Thus, as expected, the Healthy Camp Study has been very reliable, and has reported a consistent rate of injury every year.

The Healthy Camp Study also benefitted from the use of an established methodology and survey instrument, since CAMP RIO was developed based on HS RIO (High School RIO), which has been in use for several years as a tool for monitoring injuries in high school sports. In addition, the CAMP RIO survey instrument and methodology were tested in a 2005 pilot study published in *Pediatrics* (Yard, Scanlin, Erceg, Powell, Wilkins, Knox, & Comstock, 2006). The pilot study allowed any problematic questions to be dropped from the survey, and any methodological issues to be addressed prior to the start of the Healthy Camp Study. Interobserver variation was minimized by providing training to the people collecting and inputting data, as well as by providing them with a contact phone number to use should questions arise.

Because the exact number of U.S. camps is unknown, data was not collected from a truly random or entirely representative sample of U.S. camps. That being said, the Healthy Camp data set is the largest data set of its kind collected to date, including data representing 5,114,775 camper-days. Large samples increase the reliability of the data in injury/illness monitoring studies. In epidemiological research, consistency can provide evidence of a valid methodology. The consistencies of the data set across the five years of the study are encouraging in this regard.

Overall Rates of Illness in Day and Resident Camps

Illness reduces the amount of time campers and staff have to participate in camp activities. It was theorized that a better understanding of camp illnesses would enable the camp community to minimize this problem and, thus, increase the amount of time campers and staff remained engaged with the camp experience. Consequently, a portion of the Healthy Camp Study sought to describe what illnesses occurred, the context in which illnesses happened, and to then identify points of intervention. The study also acknowledged that, because campers and staff are human, some illness would occur in spite of best intentions. However, if the reality of illness could be tempered with knowledge about factors that influenced camp illnesses, camps would be in a better position to make the camp experience as illness-free as possible.

The overall illness rates for campers and staff at both day and resident camps were calculated (see Figures 2, 3, 4 and 5, specifically the red "Illness Rate" line). When looking at these Figures, note that the range on the vertical Y axis — the Rate per 1,000 Camp Days — varies from graph to graph. This is important when interpreting the data. With this in mind, note the following:

- Campers and staff in both day and resident camps tended to have twice as many illness events than injury events.
- Day camps tended to have better illness rates than resident camps.
- Both day and resident campers had higher illness rates than their corresponding staff group.
- In 2009, a notable increase in the illness rate was found for all categories except resident staff, which was associated with the H1N1 Influenza outbreak.
- An increasing trend was identified in the illness rate over time within both campers and staff.

***Figure 2:** Rates of Camper Injuries and Illness in Day Camps (2006–2010)**

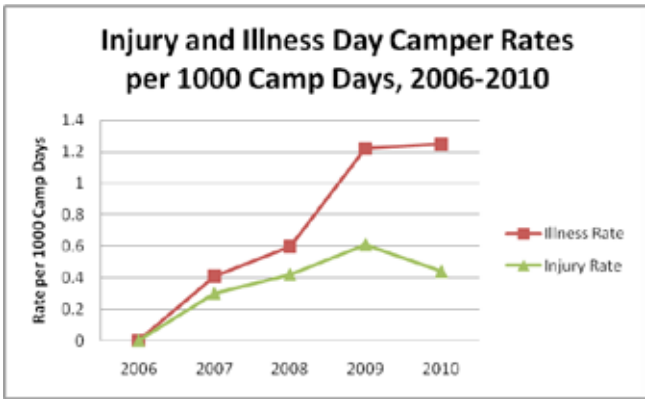


***Figure 3:** Rates of Staff Injuries and Illness in Day Camps (2006–2010)**

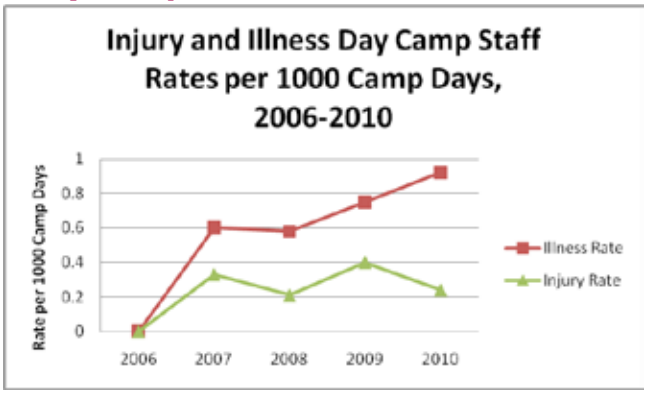


***Figure 4:** Rates of Camper Injuries and Illness in Resident Camps (2006–2010)*

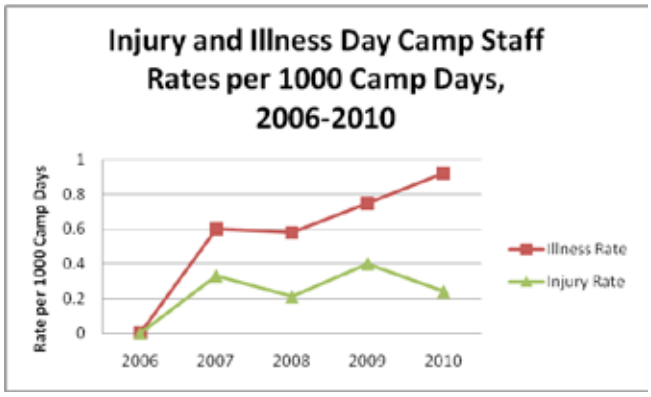
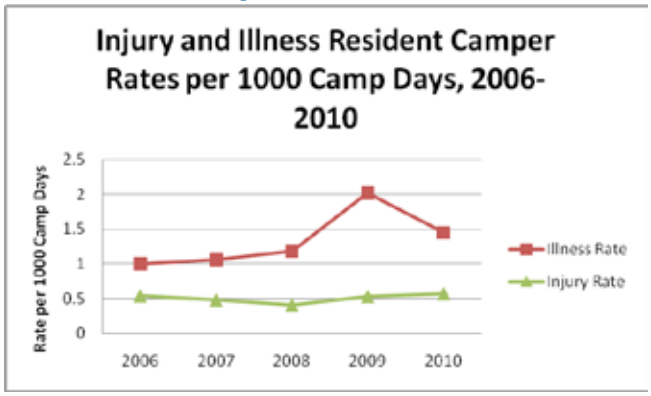


***Figure 5:** Rates of Staff Injuries and Illness in Resident Camps (2006–2010)*



**After 2006 data was collected, the definition of an "adverse event" for day camps was changed from an injury or illness that takes a camper or staff member out of the camp experience for "4 hours or more" to "1 hour or more" for 2007–2010. Thus, the 2006 data for day camps is not available for comparison with subsequent years.*

***Table 3:** Illness/Injury and Camper/Staff Rates per 1000 Camp Days for Day Camp*

	Injury Rate	Illness Rate	Camper Illness	Staff Illness	Camper Injury	Staff Injury
2006*	-	-	-	-	-	-
2007	0.31	0.45	0.41	0.60	0.30	0.33
2008	0.39	0.62	0.6	0.58	0.42	0.21
2009	0.58	1.13	1.22	0.75	0.61	0.4
2010	0.40	1.19	1.25	0.92	0.44	0.24
Overall	**0.42**	**0.83**	**0.85**	**0.71**	**0.44**	**0.30**

*****After 2006 data was collected, the definition of an "adverse event" for day camps was changed from an injury or illness that takes a camper or staff member out of the camp experience for "4 hours or more" to "1 hour or more" for 2007–2010. Thus, the 2006 data for day camps is not available for comparison with subsequent years.*

***Table 4:** Illness/Injury and Camper/Staff Rates per 1000 Camp Days for Resident Camp*

	Injury Rate	Illness Rate	Camper Illness	Staff Illness	Camper Injury	Staff Injury
2006	0.50	0.98	1.00	0.93	0.54	0.40
2007	0.46	1.00	1.06	0.83	0.48	0.41
2008	0.40	1.10	1.18	0.86	0.41	0.34
2009	0.46	1.57	2.02	0.91	0.53	0.34
2010	0.54	1.34	1.45	1.12	0.57	0.49
Overall	**0.47**	**1.23**	**1.38**	**0.93**	**0.50**	**0.39**

Illness rates became particularly interesting when it was noted that campers and staff were more likely to have an adverse illness event while at camp than they were to have an injury event. That likelihood was, in fact, almost double — and, as a result, quite notable (Figures 2–5).

The gradual increase in the illness rate, coupled with the fact that illness was twice more likely to occur than injury in both day and resident camps, prompted an examination of the kinds of illness that occurred. The data set indicated that upper respiratory ailments (e.g., common cold, allergy reactions, and sore throat), flu, and gastroenteritis were most commonly reported (e.g., met the definition for "adverse event"). It should also be noted that some camps reported improved data reporting as they became more familiar with the study's parameters (see Figure 7). This may have contributed to more discrete reporting in the various illness categories.

There was no discernable distinction in illness reported by males and females, nor was there a particular time of day when illness tended to be reported. There was, however, a tendency among day camp staff to report more illness on Mondays, whereas resident camp staff tended to report more illness on Mondays, Tuesdays, and Wednesdays than other days of the week.

Campers and staff were more likely to have an adverse illness event while at camp than they were to have an injury event.

Communicable Illness in Camps

Knowing that illnesses such as the common cold, sore throat, and flu were the most frequently reported raised questions about how illness was passed from person to person (i.e., communicability). Based on reported data, there was a 50/50 split between illnesses that were communicable, as opposed to those that were not (Table 5). The prevalence of communicable illness in camp means that camps must continue to pay diligent attention to communicable disease control strategies. Some of these strategies are embedded in "opening day" screening processes and expectations surrounding personal health behaviors (e.g., effective hand washing, covering coughs/sneezes); however,

Table 5: Illness Communicability among Campers and Staff in Day and Resident Camps (2006–2010)

Communicability of Illnesses	2006	2007	2008	2009	2010
Non-communicable illness	57%	58%	48%	41%	51%
Communicable illness but not seen in others	18%	19%	16%	14%	16%
Communicable illness seen in others	25%	23%	36%	46%	33%

these strategies can be ignored by individuals and/or haphazardly implemented by camps. This impact was aptly demonstrated during the summer of 2009 when the H1N1 Influenza outbreak triggered an increase in communicable illness, and saw that illness spread to others — with abandons!

In an effort to staunch the spread of influenza-like illness — especially during 2009's H1N1 Influenza outbreak — the online course, "No Outbreaks Here: Simple Strategies for Reducing the Spread of Communicable Diseases at Camp" was developed. In addition, infectious disease control strategies were promoted via online postings to participating camps, published articles (Appendix E), and key messages delivered at conferences. Efforts to institutionalize those behaviors are ongoing as of the publishing of this report.

According to Table 5 (above), there appears to be a slight upward trend in communicable illnesses that are seen in others. This would indicate that directors in both day and resident camps should place more effort in strategies that influence reduce communicability — strategies such as personal protective behaviors that include staying well rested, effective "opening day" screening, and increased social distance between people (see sidebar, Strategies That Decrease Potential for Communicable Illnesses at Camp).

Illness Related to Pre-Existing Chronic Conditions

Along with communicability, it was noted that about 20 percent of reported illness was experienced by campers and staff whose illness was related to a pre-existing chronic medical condition. This suggests one of two potentials: (a) That the chronic condition stressed the individual's health, thus making them more susceptible to illness; and/or (b) That the chronic condition made it more likely that the person would get an illness associated with the nature of the chronic condition (e.g. camper with allergies are more likely to develop a common cold or sinusitis). Knowing this predisposition indicates the need for camp staff to make sure this susceptible population remains well rested, hydrated, and fed. It may also indicate a need to acknowledge that people with chronic health conditions are less adept at handling health stressors — such as lack of sleep — than their generally healthy peers.

Strategies That Decrease Potential for Communicable Illnesses in Camp

- Maintain personal resistance — stay well rested, hydrated, and nourished.
- "Sneeze in your sleeve" — effectively cover coughs and sneezes.
- Effectively wash hands and keep them away from one's face.
- Stay an arm's length away from one another (maintain social distances).
- Sleep with the greatest distance between heads, including in tents.
- Disperse airborne pathogens by taking advantage of moving air (natural or via fans).
- Screen people upon arrival for signs/symptoms of illness; isolate potential cases.
- Tell parents to keep sick/ill children at home; provide an alternate start date in these situations.
- Add a policy that states the camp retains the right to refuse admission to someone who poses a communicable disease threat.

Data about communicable disease in camps suggests that directors in both day and resident camps should place more effort in strategies that influence communicability — strategies such as personal protective behaviors that include staying well rested, effective opening day screening, and increased social distance between people.

Onset of Illness

The study also asked about onset of illness. In both day and resident camps, the symptoms of most illness (over 50 percent in each year of the data set) started when the camper or staff member was at camp. However, at least 3 percent — and one year as high as 20 percent (day camps, 2006) — of illness started before the camper or staff member came to camp. Based on data, directors can typically expect that 5–7 percent of the illness that occurs in camp will have started before the camper or staff member arrives. This information impacts screening practices and agreements with parents about keeping ill children at home rather than sending them to camp.

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Influence of Fatigue on Illness at Camps

With the start of the 2009 data collection summer, a question about fatigue was added to the data collection tool. Specifically, the tool asked the reporter if fatigue was a contributing factor to the illness. Recognizing that a reporter's opinion about the impact of fatigue on illness was not a totally reliable factor, that data was not included in this report. Discussion, however, about the impact of fatigue continued to surface and gave rise to the content presented in the sidebar, "When Get-Up-and-Go Has Got-Up-and-Went."

Categories of Illness in Camps

Illnesses associated with the respiratory tract were most prevalent; these were consistently just over 20 percent of the reported illnesses in each year of the data set. The next most prevalent category, illnesses associated with the gastro-intestinal tract, ranked a close second and included both infectious and non-infectious gastro-intestinal illnesses. All other illness categories were consistently less than 5 percent of the total reports in each year; these included allergic reactions, heat-related illnesses, asthma flares, genital-urinary conditions, and illness associated with ticks.

Comparing Illness Among Campers and Staff

When examining camp illness experiences, the study intentionally separated the experience of staff from that of campers. These two groups have different developmental needs and interact with the camp program in different ways. From an illness perspective, however, these differences had less impact on illness than was anticipated. For example, most campers and staff are moving through significant physical growth and development. This places demands on their bodies to continually replenish reserves associated with hydration, nutrition, and sleep (rest). A situation that depletes those reserves increases the person's susceptibility to illness regardless of being a staff member or camper. Adults typically tolerate assaults to reserves better than children, thus tipping illness susceptibility associated with developmental stage toward children (campers).

What makes a difference to the staff experience of illness may lie more within the camp culture. Functioning in loco parentis and maintaining client satisfaction drives the care given to campers. However, camps take care of staff in a different way and often simply rely on self-care because staff are needed to do their job. While a camper with a common cold may be allowed to take it easy, a staff member with that same cold is often expected to continue doing their job. However, if continued job performance isn't balanced with energy-saving strategies, the staff member is likely to deplete coping reserves more quickly, thus making the staff member more susceptible to complications of the common cold (e.g., bronchitis, sinusitis).

When Get-Up-and-Go Has Got-Up-and-Went: Fatigue at Camp

It's rare that one can say fatigue actually causes injury or illness. Rather, fatigue is more typically an element that contributes to injury and illness. It shares this fame with attributes such as a person's hydration and nutritional status. In combination, this triad — the absence of fatigue plus good hydration and nutrition statuses — can make a difference in both a person's resistance to, as well as recovery from, injury and illness events.

Interestingly, both adequate nutrition and hydration have enjoyed attention in the camp community. We take pride in nutritious meals and the ubiquitous water bottle appears everywhere — to the point where there's more concern with being over-hydrated than being adequately hydrated these days.

But fatigue has remained elusive. Camp professionals anecdotally speak of tired staff and campers, yet there's been little that has strategically addressed this challenge. It's time to change that.

If one subscribes to the classically held belief that being tired makes it more likely for injury or illness to occur, than one would expect that, as the day wears on and a person tires, injury and illness would tend to happen. Data from the Healthy Camp Study indicated that injuries in the resident camp population tended to occur in the afternoon, early evening, and on over-night trips. But injuries in the day camp sample indicated a greater incidence during morning hours.

Looking at the impact of fatigue on illness was trickier. Recall that the Healthy Camp data only counts an illness when it is significant enough to keep a person from their normal camp routine for a given amount of time. With that in mind, more illness was reported in the resident camp sample as any given week progressed. Data was not discrete enough to determine the relationship between long-term resident camper stays and the onset of illness. Such was not the case for day camps, where the percent of illness was greater in the earlier part of the week.

Interestingly, fatigue tends to show up in a given person's demeanor quicker than in any injury or illness event. Campers and staff become short-tempered and we speak of someone being "more of a beast than a beauty." Perhaps if we attend to these early signals and appropriately intervene when they occur, we could change the impact of fatigue, much the same as we've improved nutrition and hydration states.

When thinking about injuries, data of the type collected during the Healthy Camp Study can be incredibly powerful in identifying areas of risk within camp. When compared to illnesses, for which a small number of consistently applied interventions can help in prevention, injuries can happen in any place, at any time. It's also important to note that the camp experience is not risk free. Participation in camp includes certain inherent risks because of the active nature of the participants, terrain, weather, and other characteristics. The key to injury prevention is constant observation and reporting of incidents, and an ongoing evaluation of the "who, what, when, where, and why" (Table 2) of each incident. Pattern recognition is crucial. Over the five years of data collection, the Healthy Camp Study revealed some significant and consistent trends in injuries. It was the critical evaluation of these trends which led the creation of the specific interventions which are discussed later in this report.

The key to injury prevention is constant observation and reporting of incidents, and an ongoing evaluation of the "who, what, when, where, and why" of each incident. Pattern recognition is key.

Table 6: Injury Rates for Youth Participating in Day and Resident Camps Compared with Injury Rates for Youth Participating in Common Youth Sports (2006–2010)*

Youth Activity	Injury Rates**
Resident Camp	0.50
Day Camp	0.44
Boys' Football	4.09
Boys' Wrestling	2.35
Girls' Soccer	2.31
Boys' Soccer	1.98
Girls' Basketball	1.80
Boys' Basketball	1.58
Girls' Volleyball	1.24
Girls' Softball	1.15
Boys' Baseball	1.03

** Rate for camps = chance of 1 child in 1,000 becoming injured during one 24-hour period at camp; Rate for sports = chance of 1 child in 1,000 becoming injured during a practice or a game.*

*** Morbidity and Mortality Weekly Report, DHHS, Centers for Disease Control, September 29, 2006*

Overall Rates of Injury in Day and Resident Camps

The good news is that both day and resident camps have very low rates of camper and staff injuries. Table 4 and Table 5 reveal the overall rates of injuries for campers and staff at day and resident camps. The aggregate injury rates for the five study years were .47 injuries per 1,000 camp days for resident camps and .42 injuries per 1,000 camp days for day camps. To put this data in another way, there was less than one injury in every 2,000 days a camper or staff spent at camp. The lower rates for day camps likely reflect the shorter time (i.e., exposure) any camper or staff member is present onsite. There is simply less time to become injured. These rates did not vary significantly across the study period. This lack of variation adds weight to any conclusions drawn from combining the five years of collected data.

The camp community knows intuitively that the safety of campers and staff members must be the primary concern. It is also clear that parents and other caregivers are constantly assessing the risk profile of the activities in which their children participate and make decisions about their child's participation based on their conclusions. Reassuringly, rates of injury during the camp experience are significantly lower than most organized sports (Table 6). Consider the difference in the "exposure" between camp experiences and sports. As a camp day may be 24 hours long, and most sports practices and games are only 2–3 hours long, this comparison is even more powerful. The conclusion: In terms of overall risk of injury, camp is as safe or safer than many activities that parents choose for their children.

In terms of overall risk of injury, camp is as safe or safer than many activities that parents choose for their children.

Who, What, When, Where, and Why of Camp Injuries

As noted previously, it is important to assess the who, what, when, where, and why of an injury in order to think about ways the injury could have been prevented. Although it is reassuring to note that the camp experience has a lower risk than many other youth activities, many camp injuries can be prevented. Camps need to be constantly working to reduce risk even further. Risk reduction strategies can be ranked from least to most powerful. Least powerful are suggestions to be more careful. Staff training is imperative. However, any educational intervention depends on the individual to not only internalize the information and but also put it into practice. Having the staff use checklists or standard protocols for an activity, in addition to educational sessions, decreases risk even further. The staff can be engaged to help determine which activities would be amenable to checklist or protocol creation.

When it comes to illnesses, in general, any healthy population of children and adults in close proximity to each other would have a similar risk of catching an infection. Injuries are different from illnesses in that campers and staff differ in their intellectual and motor skills, their understanding of risk, and the activities in which they may be participating. It is for these reasons that injuries in campers and staff must be evaluated separately. Interventions which might be appropriate for campers might not be appropriate for staff; the converse is also true.

Who was injured: As noted previously, injuries occurred at similar rates in campers and staff, with overall rates being lower in day campers or day camp staff. There was a trend toward campers being injured more frequently than staff, as would be expected given this younger, very active population. At resident camps, equal numbers of male and female campers were injured, while at day camps a higher percentage of females than males (55 percent v. 45 percent) were injured. At both resident and day camps, female staff were more likely than male staff to be injured. The underlying cause of this trend is unclear.

What was injured: Figures 6 and 7 show the most likely parts of the body to be injured. As would be expected given the young and active camp population, upper and lower extremities were the most common sites of injury. Consistent with this finding, sprains and strains were the most common type of injury reported (Figures 10 and 11). Falling, slipping, or tripping was by far the most likely mechanism of injury (Figures 12 and 13). The recognition of lower extremity injuries as the most commonly injured body site, with slip, trip, or fall as the most common mechanism, led to conclusion that frequently, campers and staff members may not be wearing appropriate footwear for the activities they participate in. As a result, the "Footloose: Minimizing Slips and Falls at Camp" online course was developed as an intervention. The goal was to motivate camps to address this common injury issue in camps.

Severe, multi-system trauma was rare. Only 9 percent of injured campers or staff suffered more than one injury during any single incident.

Overall, while most campers or staff who were injured were able to return to camp activities, there were some concerning trends. Some injuries have greater potential for long-term disability than others. One item of significant concern was the proportion of injuries to the head and face, most noticeably among day campers. One third (32.8 percent) of all day camper injuries involved the head, face, or neck. As day campers tend to be younger, this may have to do with the larger head size in proportion to their body, which is present in younger children. Lacerations, bumps and bruises, and broken bones can heal, but head injuries can lead to lifelong disability, so their prevention is critical.

The study also revealed that staff were more likely than campers to sustain a wound, and that frequently these wounds involved the use of knives during camp activities and food preparation. Occupational health and safety experts know that knife-related injuries can be prevented with standardization of practice. Again, this was seen as an opportunity for staff education and training, and the online course "Knife Safety: Reducing Sharp Object Injuries at Camp" was developed as an intervention.

> The recognition of lower extremity injuries as the most commonly injured body site, with slip, trip, and fall as the most common mechanism, suggests that campers and staff members were frequently not wearing appropriate footwear.

(continued)

Figure 6: Body Region of Camper and Staff Injuries at Resident Camp, 2006–2010

Campers (n=1,774) Staff (n=739)

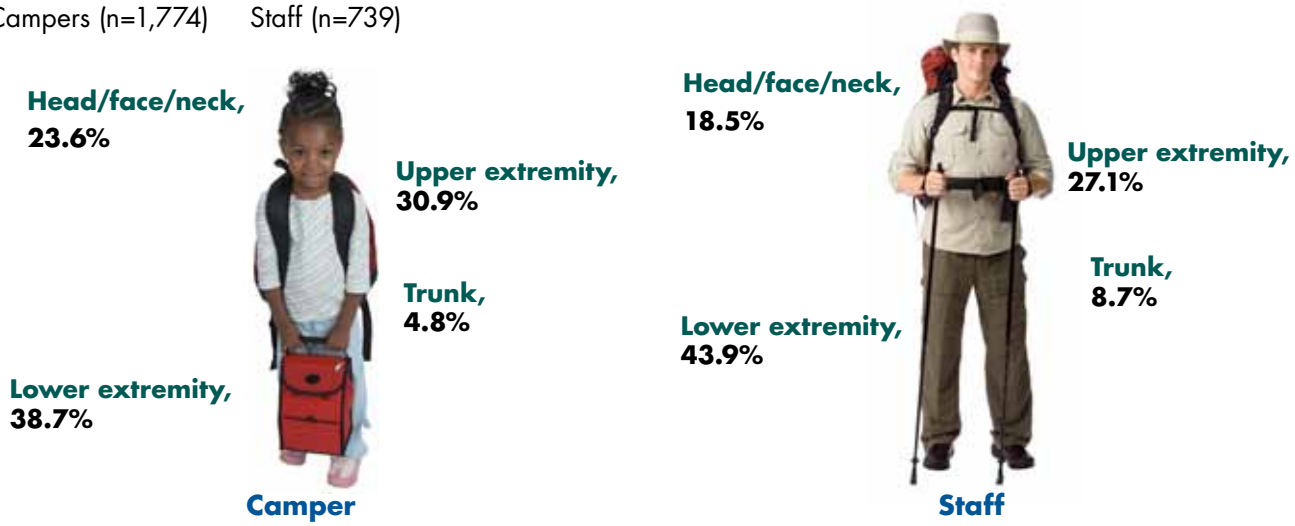


Figure 7: Body Region of Camper and Staff Injuries at Day Camp, 2006–2010

Campers (n=502) Staff (n=85)

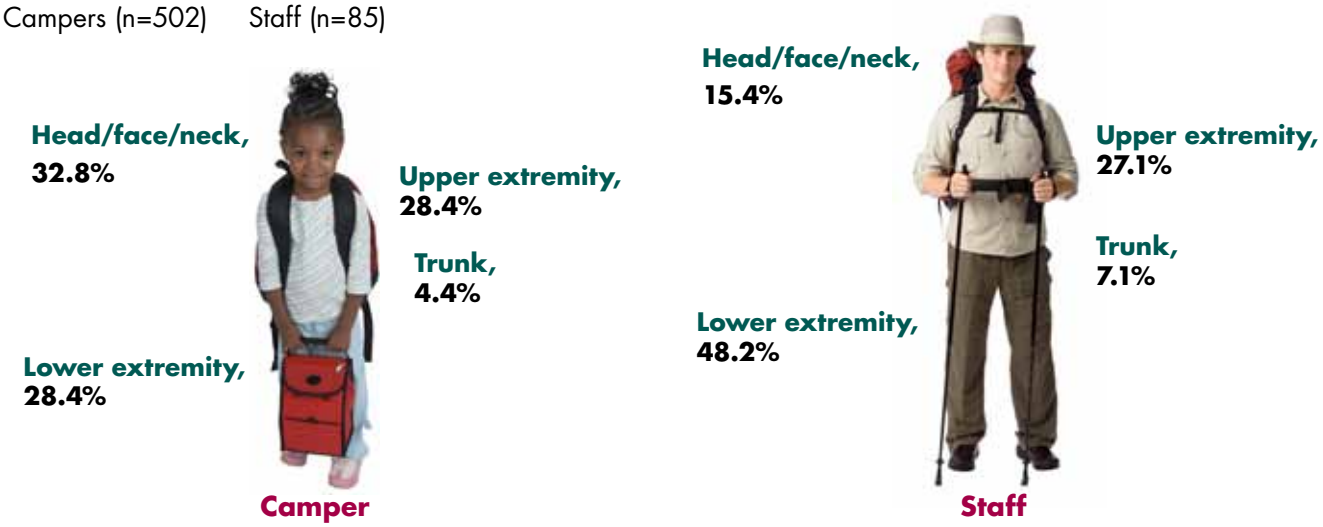
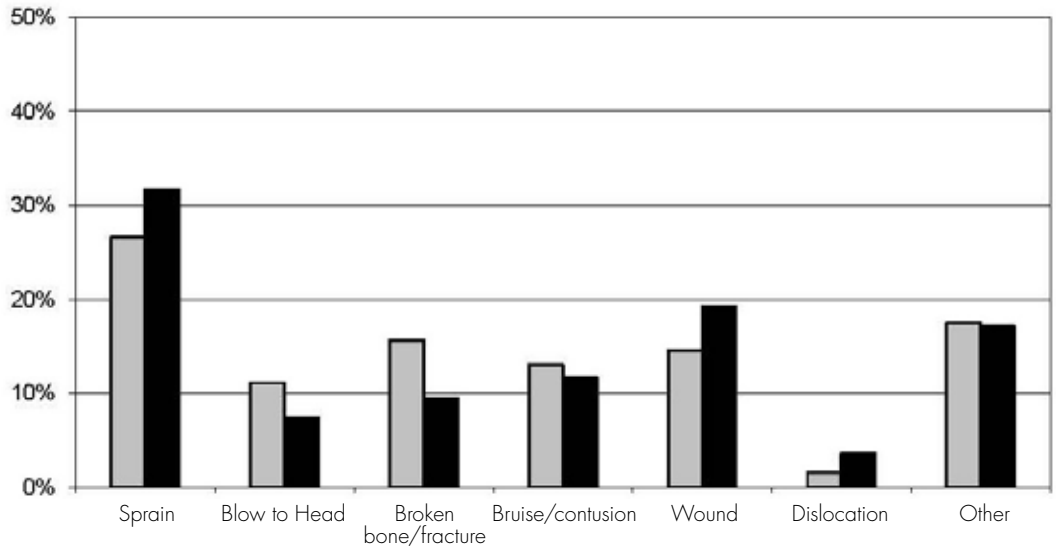
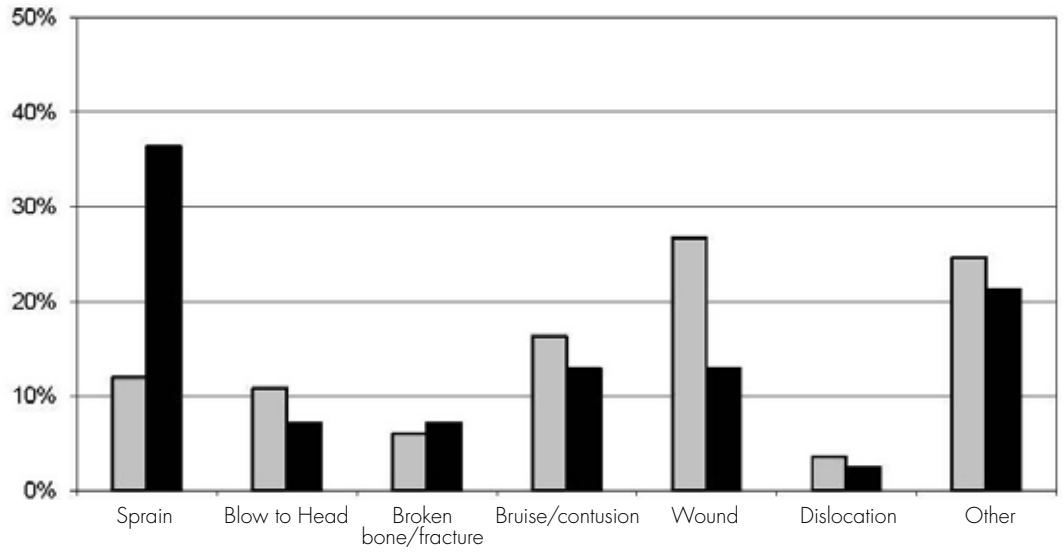


Figure 8: Distribution of Camper and Staff Injuries at Resident Camp, 2006–2010*



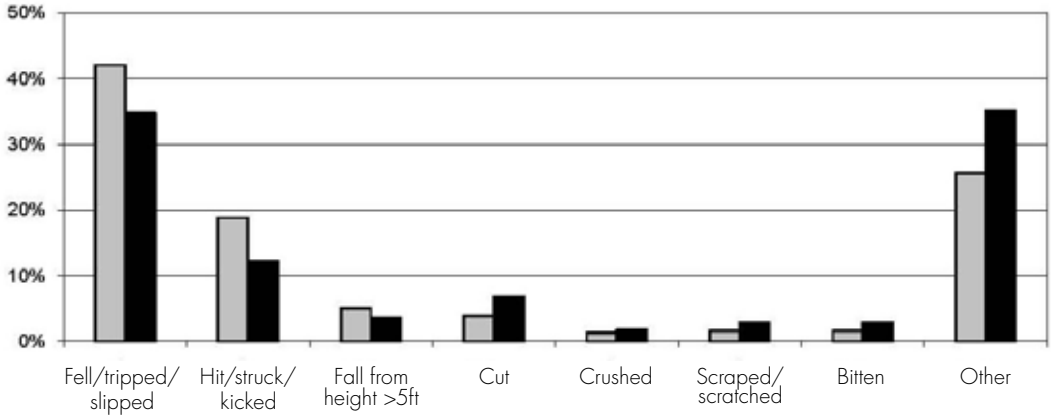
** "Other" category, which was less than 2 percent of all injuries, consisted of splinters, foreign objects in body, burn/chemical burn, broken or damaged teeth, blow to abdomen, blister, animal bite, chest injury, unknown, undetermined, and non-response.*

Figure 9: Distribution of Camper and Staff Injuries Day Camp,* 2007–2010



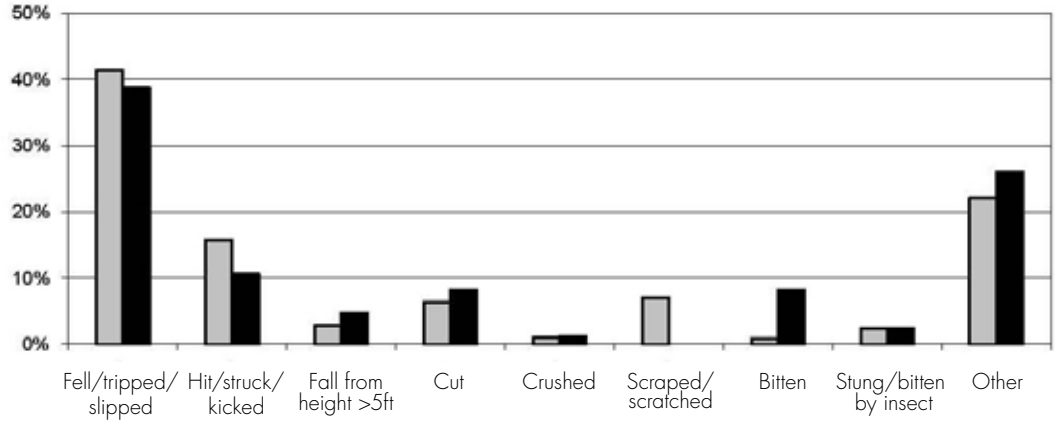
** "Other" category, which was less than 2 percent of all injuries, consisted of splinters, foreign objects in body, burn/chemical burn, broken or damaged teeth, blow to abdomen, blister, animal bite, chest injury, unknown, undetermined, and non-response*

Figure 10: Primary Mechanisms of Camper and Staff Injuries at Resident Camp,* 2006–2010



** "Other" category, of which injuries consisted of less than 2 percent, were being pinched, sunburns, near drowning, stung/insect bite, vehicular accident, jammed fingers, lifting injuries, and increased activity levels leading to soreness*

Figure 11: Primary Mechanisms of Camper and Staff Injuries at Day Camp,* 2007–2010



** "Other" category, of which injuries consisted of less than 2 percent, were being pinched, sunburns, near drowning, vehicular accident, jammed fingers, lifting injuries, and increased activity levels leading to soreness.*

When did it happen: Resident campers sustained three-quarters (77.8 percent) of their injuries during their first week at camp. These findings suggest that unfamiliarity with the camp environment may lead to an increased risk of injuries, so staff must have increased vigilance when new campers arrive. Interestingly, resident campers sustained almost half of their injuries from noon to 6:00 p.m. This may be related to a time of concentrated activities in the afternoon, and perhaps campers suffering from increasing fatigue as the day progresses.

Resident campers sustained ¾ of their injuries during the first week of camp.

In aggregate, most injuries to campers and staff occurred during planned camp activities (Figures 12 and 13). While this finding may at first glance appear discouraging, planned activities are the part of the camp day around which most staff training revolves and planned activities comprise the greatest amount of time during which campers are engaged. As a result, it may be possible to reshape the emphasis during staff training to more strategically address risk reduction strategies such as warming up, correct use of protective equipment, and providing appropriate rest breaks. In addition, reviewing incidents that do occur with staff enables them to identify actions that may reduce future potentials.

***Figure 12:* Portion of the Day of Illness and Injury Onset among Campers and Staff at Resident Camp, 2006–2010** *Camper n=1,824 Staff n=770*

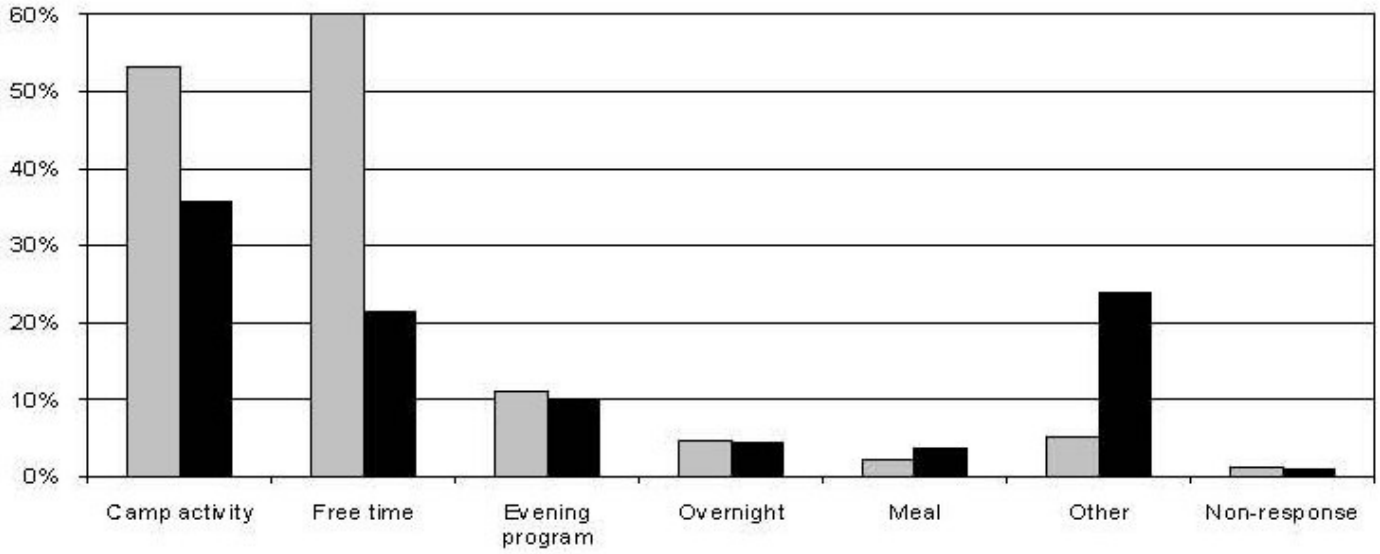
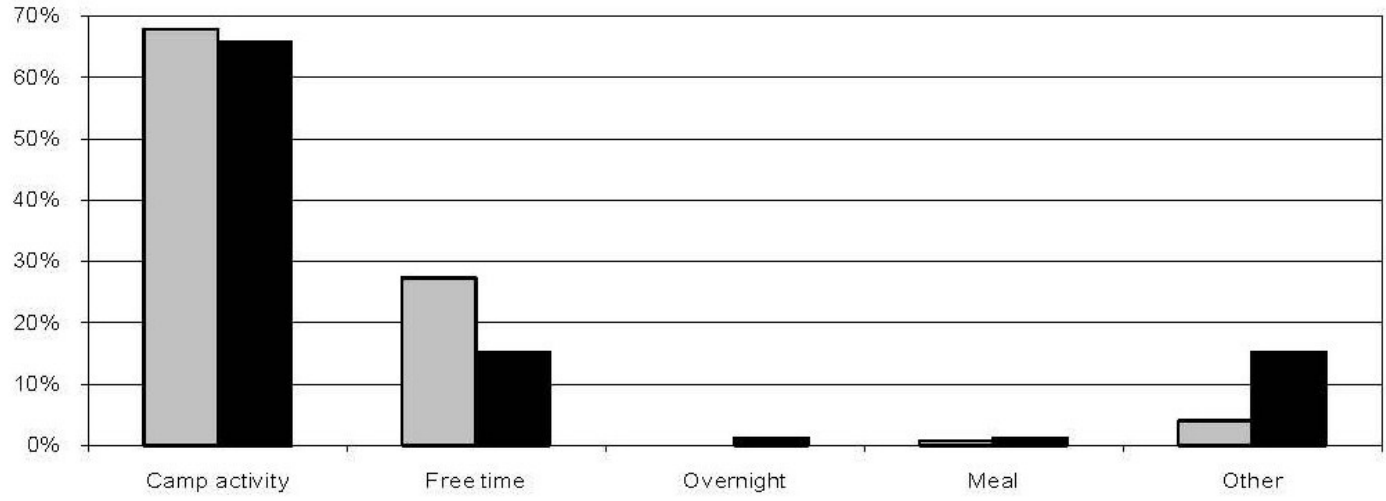


***Figure 13:* Portion of the Day of Illness and Injury Onset among Campers and Staff at Day Camp, 2006–2010** *Camper n=502 Staff n=85*



Of significant concern is the fact that 60 percent of resident camper injuries occurred during free time. This finding has significant implications for staff supervision when campers are not involved in planned activities. Camp directors need to be as aware of what is happening during unscheduled time as they are during planned camp activities

Where did it happen: In most camps, the majority of injuries happened on a playing field or court (Table 7). High velocity activities are the norm in these areas, so this finding is not surprising. Activities around the waterfront were also a common location where injuries occurred. Again, adequate supervision is a must, especially given the risks associated with some waterfront activities. Discovering a pattern related to the physical location on the camp site where injuries occur is easier for those camps actively tracking their incidents. This could be as simple as marking each injury on a map of the camp site. Activities might also need to be modified based on weather conditions, terrain, or other characteristics of the playing surface.

Why did it happen: Determining why an injury occurred is a difficult question to answer. Every camp must assess where risk is present and create a culture where the only acceptable practice is a safe practice. Every incident should be examined fully to determine the root cause. Also, a culture of "shame and blame" should be avoided. Campers and staff should feel free to come forward and report near misses or unsafe practices before an incident occurs. Staff training is critical; standards, checklists, and protocols should be used; and creating high expectations of care for every child should be the norm.

TABLE 7: Top 10 Activities Associated with Injury in Day and Resident Camps (2006–2010)

CAMPERS		STAFF	
Playing a sport/game	21%	Playing a sport/game	17%
Other non-sport activity	14%	Walking	12%
Sedentary (sleeping, sitting)	10%	Sedentary (sleeping, sitting)	11%
Walking	10%	Routine action (hygiene, standing, etc.)	11%
Routine action (hygiene, standing, etc.)	9%	Horse-related	7%
Water-related (non-swimming)	9%	Water-related (non-swimming)	6%
Running/jogging	8%	Instructing/supervising	5%
Horse-related	4%	Other	5%
Biking	4%	Camp chore/task	5%
Prohibited activity/horseplay	4%	Using a knife	3%

"MAKING IT BETTER":
INTERVENTIONS FOR REDUCING INJURIES AND ILLNESSES IN CAMP

Online Courses for Injury and Illness Prevention

The Healthy Camp Study was implemented to describe the prevalence and context of the injuries and illnesses that occur at day and resident camps during the summer months. Prior to this collected data set, the scope of injury-illness incidents within the camp community was unknown, thus making it difficult to determine what intervention(s), if any, would improve rates.

This changed after 2007- the second year of data collection. Consistency in the data sets of 2006 and 2007 led the Healthy Camp Study Advisory Committee to postulate that collected information was, indeed, reflecting the camp experience. With that assumption, the committee looked more closely at the data in an effort to determine potential points of intervention. The following was observed:

• Of all reported illness, just under half of the illness was communicable. Of the communicable illnesses, approximately half were seen in others. Was it possible to describe a set of behaviors that would decrease the likelihood of communicable disease spread among campers and staff, thus increasing the potential for people to enjoy the camp experience rather than getting sick?

• Of the various reported wounds, several resulted from the use of knives, especially among staff. These wounds, severe enough that they took the person from their camp experience for a given time, had potential to impact worker compensation modification rates, as well as limit the ability of people to perform. Might a knife/sharp objects safety program be initiated in an effort to decrease impactful wounds?

• A large number of injuries were the result of trips and falls for both campers and staff. Since data was collected during summer months, the use of sandals, flip-flops, and other less protective footwear came under scrutiny. More discrete questions were added in 2008 to explore the types of footwear being worn in camps. Table 8 shows the additional information that was collected for campers and staff. How might one raise awareness within the camp community of how proper footwear choices can reduce injuries associated with slips, trips, and falls?

• Not using protective equipment (when it was applicable to a given camp activity) was another element of many injuries. Protective equipment was available but some campers and staff members were not using it, thus increasing the likelihood that their injuries were significant enough to meet the definition of adverse event. How does a camp professional motivate campers and staff to consistently use protective equipment?

These questions triggered a series of interventions to target specific risk areas. The first intervention was a series of online courses designed to educate camp professionals (Figure 14). These courses were offered through ACA's e-Institute online learning center at www.ACAcamps.org/einstitute/healthycamp. Camps participating in the Healthy Camp Study received free access to these courses.

• No Outbreaks Here: Simple Strategies for Reducing the Spread of Communicable Diseases at Camp
• Footloose: Minimizing Trips and Falls at Camp
• Knife Safety: Reducing Sharp Object Injuries at Camp
• OUCH: Protective Equipment, What All Staff Should Know

Figure 14: American Camp Association's Injury and Illness Prevention Online Courses

TABLE 8: Footwear Worn by Campers and Staff During Slips, Trips, and Falls in 2009

	Resident Camps		Day Camps	
	Campers	Staff	Campers	Staff
Shoes with closed heel and closed toe	75.3%	69.5%	81.5%	60%
Shoes with open heel and/or open toe	10.2%	15.3%	9.3%	10.0%
Individual was not wearing shoes	10.2%	13.6%	7.4%	20.0%
Other	4.2%	1.7%	1.9%	10.0%
Total	**100%**	**100%**	**100%**	**100%**

Approximately 11,300 professionals, staff, and volunteers have been trained on injury and illness prevention using online interventions through ACA's e-Institute.

Comments from camp professionals about practices changed as a result of using the online courses for staff and camper training.

"We changed the rules last year to no flip-flops . . . and we had only three or four injuries to ankles/feet in the last two YEARS! It's amazing . . . ."

"All [of the trainings] were incorporated into risk initiatives. They became part of personnel evaluations."

"We sneeze every day at the end of singing 'On Top of Spaghetti' — but now we do it in our sleeves . . . ."

"There were comments made throughout the summer when a situation arose that related to the training."

"On visiting day, we asked the campers to teach their parents how to cough and sneeze the right way. . . ."

". . . lots of hand washing. It was hard to keep soap dispensers full!"

From 2008, when the online courses were first created, to 2010, approximately 11,300 directors, staff, and volunteers accessed the courses. The communicable disease course elicited most comment because (a) The "sneeze in your sleeve" message was delivered in a humorous way, and (b) Influenza-like illness (H1N1) during summer 2009 threatened the camp experience, thus providing impetus to be as protective as possible. However, self-reported anecdotal comments (see sidebar) provided evidence that all courses "hit home," resulting in observable behaviors — people used protective equipment, appropriate shoes were worn, hand washing increased, and there were changes in camp policies (e.g., performance appraisal forms assessed these behaviors, flip-flops were "outlawed," the courses became part of staff orientation).

Dissemination of Promising Practices for Injury and Illness Prevention

Another intervention focused on publication and presentation of the study results along with recommended strategies for injury and illness prevention . Starting with ACA's 2007 national conference, at least one session focused on delivering the Healthy Camp message at national and regional events for both ACA and the Association of Camp Nurses (ACN). Articles appeared in Camping Magazine, The CampLine, and ACN's CompassPoint. In addition, the Healthy Camp Update newsletter became an insert for both ACA and ACN. The study was also discussed in articles published in peer-reviewed journals including the Journal of Park and Recreation Administration (Erceg, Garst, Powell, & Yard, 2009) and Injury Prevention (Appendix D).

The study's five-year span allowed the Healthy Camp Study Advisory Committee to shape a national curiosity about camp injury/illness data and the changes that were possible once one knew and understood the nature of injury/illness events. This was largely possible because, in addition to previously mentioned interventions, each camp that contributed data received a custom summary report specific to their camp along with the national report. This made it possible for camps to do point-to-point comparisons and to identify both their strengths and weaknesses over time. The custom report also reinforced study affiliation over the five-year timeframe.

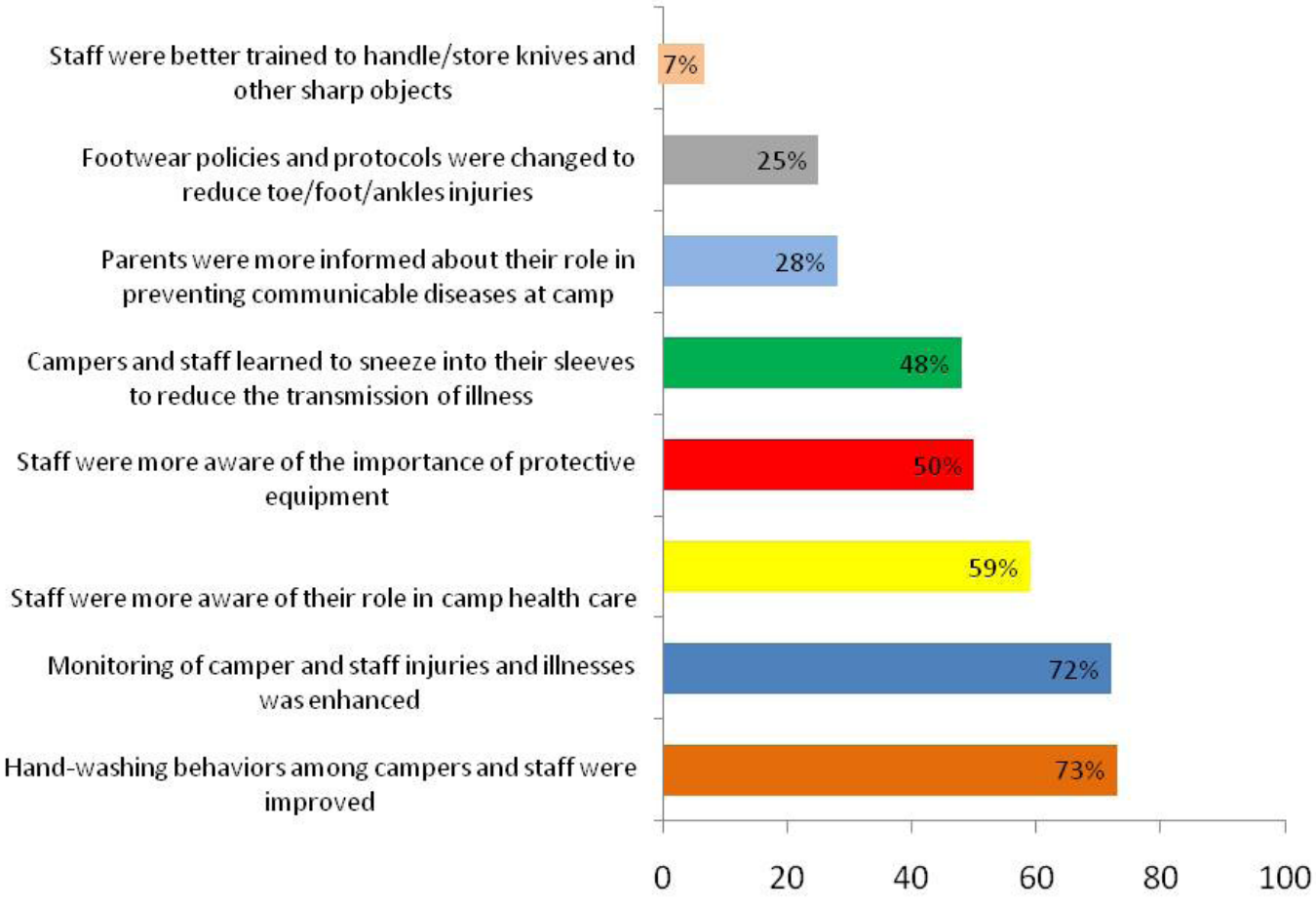
One of the goals for the intervention plan was to get both campers and staff to actually practice risk reduction behaviors. Camp leaders are well vested in risk assessment, management, and reduction but rare are the opportunities to shape behaviors of staff and campers. The online courses largely delivered this message. Coupled with changes in policy, behaviors arose that should serve camps well into the future as long as those behaviors become institutionalized.

Measuring the Impact of Interventions for Injury and Illness Prevention

A measure of the interventions' influence was achieved via self-report by participating camps. At the end of the five-year project, all enrolled camps received a request to complete an online survey (via SurveyMonkey) about their experience in the Healthy Camp Study and lessons learned from participation. A total of 140 camps completed the post-study survey, representing a 30 percent response rate. As indicated by Figure 15, a number of health care practices were learned through participation in the Healthy Camp Study. The most common responses included:

- Importance of washing hands to control communicable disease (73.4 percent).
- How to monitor injury/illness experience to recognize and respond to camper and staff health needs (71.8 percent).
- How to teach staff about their role in camp health care (58.9 percent).
- Reminding staff of the importance of protective equipment (50.0 percent).

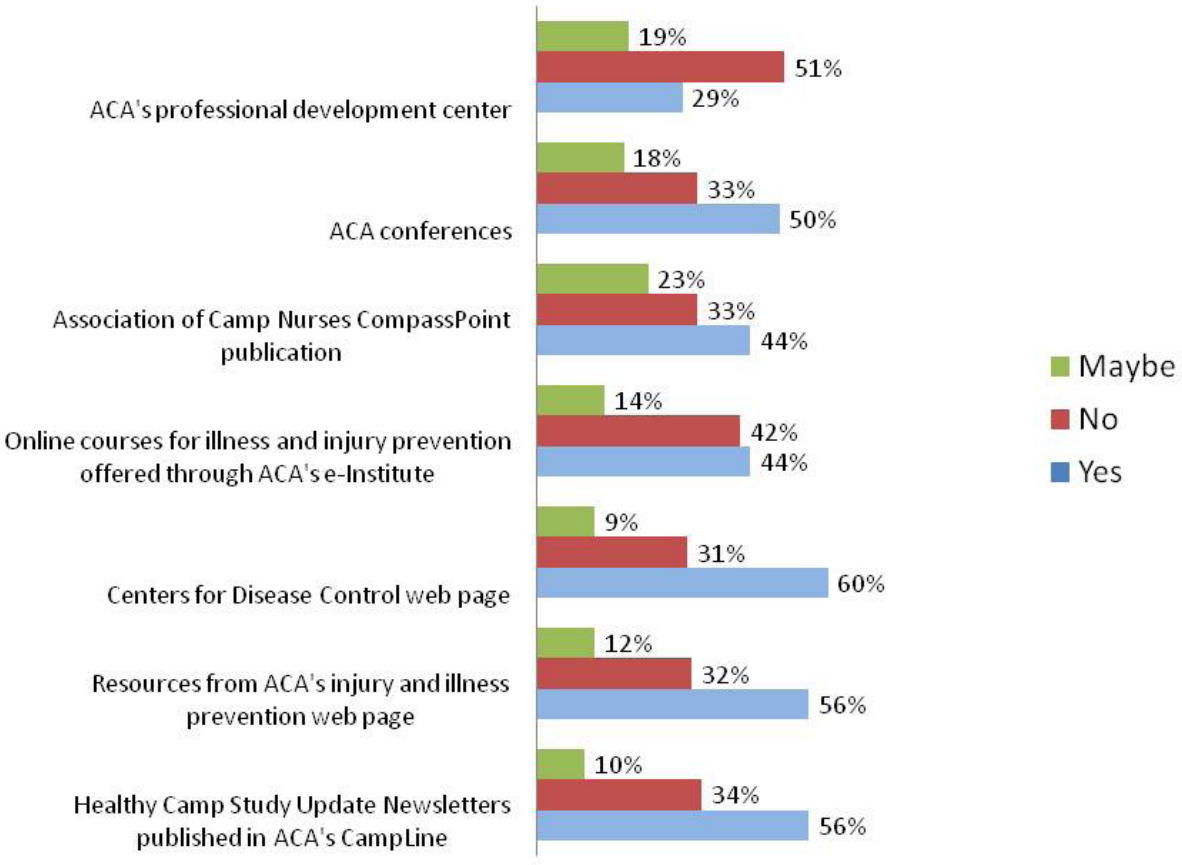
Figure 15: Changes in Practice Identified by Camps Participating in the Healthy Camp Study (n=134)



Resources for Educating Campers, Parents, and Staff about Injury/Illness Prevention

When asked what resources camp leadership planned to continue to use to educate their campers, parents, and staff, 59.8 percent intended to utilize information from the Centers for Disease Control (CDC) Web site (Figure 16). This was closely followed by the Healthy Camp Update (newsletter) (55.9 percent), and resources from ACA's injury and illness prevention Web page (57.1 percent). Figure 16 provides additional information about resource use.

Figure 16: Injury/Illness Prevention Resources That Camps Planned to Continue to Use to Educate Campers, Parents, and Staff (n=134)



PROMISING PRACTICES FOR INJURY AND ILLNESS PREVENTION

Increasingly, camps have been updating their health and safety protocols and practices for the management of communicable diseases and the reduction of injuries. By accessing and incorporating information from the Centers for Disease Control, ACA, ACN, and other related sources, camps are improving their health practices by incorporating new knowledge into their day-to-day health center operations.

Camps don't have to wait for an outbreak to occur to update their camp health practices. An important key to developing a sound knowledge base about health and safety conditions is careful monitoring of the factors that cause significant injury and illness events in camps. New information about promising practices of a healthy camp is now available and camps can take advantage of what the camp community has learned to implement proactive health care strategies.

Here are eleven practices you can incorporate into your camp operations to improve the well-being of campers and staff involved in your program.

Promising Practice #1: *Camp professionals should promote the relative safety of the camp experience to parents, caregivers, and the public.*

Research on injury rates from camps and youth sports shows that children are less likely to be injured in day and resident camps than in the organized sports in which youth are involved, suggesting that camp staff are trained in safety procedures specific to various activities. By sharing this information, camp staff can reassure parents and other caregivers that staff are trained to conduct activities as safely as possible.

Promising Practice #2: *Camp professionals should educate parents/caregivers about their role in injury/illness prevention at camp. A parent flyer is available with key messages for parents (Appendix A).*

Research indicates that 5-7% of illness actually starts before the child even gets to camp. Consider a parent policy that directs parents to contact the camp office to arrange for a delayed start to the child's camp session or a switch to another session should this occurs. To emphasize parent impact on prevention, consider placing an asterisk next to items on the camp packing list that have a role in injury -illness reduction. This might include items such as appropriate shoes, rain gear, insect repellent and sun screen.

Promising Practice #3: *Camp professionals should conduct consistent, thorough screening procedures to minimize the potential that ill campers will impact the camp community. Screening starts at home when parents decide if their children are well enough to attend camp. Parents should be aware of a camp or program's criteria for inclusion based on a child's health profile.*

Systems should be in place to document screenings, which should include pre-camp conversations regarding health concerns. On-site screenings should be conducted according to a policy, so screenings are consistent.

Camp professionals said . . .

"[We] instituted more stringent assessments on arrival days. Prior to this year, no temperatures were checked on incoming campers. This year, three were sent home with temperatures greater than 100."

"Screenings for campers and staff were improved, additional hand sanitizers were available, and more signage was placed around camp regarding how to stop the spread of germs."

"Parents are given the 'A Healthy Camp Starts at Home' flyer with registration. [Parents] are keeping the campers home when sick more often now."

Camp professionals said . . .

"We asked the campers to teach their parents how to cough and sneeze the right way. I saw campers reprimand their parents for coughing into their hands on visiting day."

Promising Practice #4: *Camp professionals should regularly evaluate and update their health care practices and procedures. As outbreaks such as H1N1 Influenza, Norovirus, Lice, etc. occur, camps can access a range of reliable resources to effectively manage these situations. Available resources include existing emergency plans, ACA's crisis response toolkit, and ACA/ACN/CDC H1N1 response recommendations.*

Controlling infectious disease is the most important thing you can do to provide a healthier camp environment. Some simple techniques include:

- Actively promote good hygiene
- Teach proper hand washing
- Teach campers and staff the correct way to sneeze
- Require campers and staff to wash their hands before meals
- Provide hand washing stations at the entrances of eating facilities
- Don't require sick staff to prepare or serve food

Since the types of illness found in camps predominantly impacted the respiratory and gastro-intestinal (GI) systems, health center staff have solid assessment and care skills associated with these body systems.

Camp professionals said . . .

"We've seen a significant increase in the number of folks using the appropriate technique of coughing and sneezing into their arm or sleeve."

"Campers are more aware of communicable diseases and how to keep germs from spreading."

"Staff monitored pre-meal hand washing much more closely than in previous years."

"We had a camper come to camp with H1N1 exposure — and thus sent home. So we showed the ENTIRE camp the cough safe video for preventive measures."

"I noticed campers reprimanding each other for not washing hands. That would not have occurred a couple of years ago"

Promising Practice #5: *Don't forget the basics! Remember, the camp experience comes with some unique inherent risks such as slips and falls on uneven surfaces and unfamiliar terrain. These are often very different than what children experience in a typical day at home. Camp professionals should make closed-toed shoes and protective equipment mandatory for all applicable activities. No exceptions! Camp professionals should also continue to evaluate slip/trip/fall hazards.*

- Before arrival at camp campers and staff should have clear explanations of appropriate footwear for camp
- Staff training should include what footwear is appropriate for what activities
- Systems should be in place to ensure that protective equipment is located near where it is to be used
- Systems should be in place to ensure that protective equipment is clean, maintained, and in good repair
- Staff should be trained in how to correctly use protective equipment

Camp professionals said . . .

"We updated our official policy on allowable footwear at camp."

"We changed the rules last year to no flip-flops during games and absolutely NO bare feet — and we have had only three or four injuries to ankles/feet in the last two YEARS. It's amazing."

"[We had] a 100 percent reduction in ankle/foot injuries by implementing shoes only during game time."

Promising Practice #6: *Camp professionals should train both paid and volunteer staff (and campers, if applicable for specific camp activities) how to appropriately handle and store knives. Require staff to attend knife safety training and demonstrate mastery of the safe use of a knife.*

Camp professionals said . . .

"We introduced a knife safety session into pre-camp staff training with actual practice."

"Kitchen rules and procedures were clarified."

Promising Practice #7: *Camp professionals should clearly define for staff the behaviors that reflect appropriate supervision during less structured time. It is sometimes helpful in planning the camp day to focus some attention on what you see as the goal of free time, what it can accommodate, what lessons there are to be learned in free time, and then structuring it a little so that those goals you have identified can happen. Many camps identify free time as some of the best time spent at camp. Whether that holds true at your camp can depend on both planning and execution.*

- Communicate your free time goals to staff.
- Define for staff the behaviors associated with appropriate supervision.
- Remind staff that being alert and proactive can stop incidents before they escalate. It is much easier to prevent things then to try to clean it up later.
- Role playing situations during training helps prepare your staff. Being "present" but not intrusive is a talent that requires practice.
- Staff may have an "It can't happen to me" outlook. This can lead to them taking risks during free time that are not appropriate. Remind staff that their time off still affects the job if they get hurt.
- Supervisors need to continue to monitor staff behavior throughout the summer. Don't forget to reward the good things staff do.

See the "Discussion" section of this report for additional comments about supervision in camps.

Camp professionals said . . .

"The best a-ha [moment] I saw was when a counselor staff "got it" — injuries can be prevented, and some happen in a predictable pattern, and they already knew the contributing reasons, and could be on the lookout for them."

Promising Practice #8: *Camp professionals should develop staff policies that reinforce how important it is that staff take proper care of themselves, including getting sufficient amounts of rest. For example, in 2010 in resident camps, more than 17 percent of staff injuries occurred during days 5–7 of a one-week shift, indicating a potential role of fatigue and/or relaxed safety practices as staff become accustomed to routine. Fatigue is also a known contributor to illness.*

Fatigue tends to show up in a person's demeanor quicker than in any other injury or illness event. Campers and staff become short-tempered and weepy. Camp professionals may be able to reduce the impact of fatigue by attending to these early signals and intervening when they occur. (See Appendix B.)

- Require campers and staff to get appropriate amounts of rest, proper nutrition, adequate breaks, and plenty of fluids.
- Develop staff policies that reinforce how important it is that they take proper care of themselves. Consider how your policies can be reinforced by language in your staff contracts or list of performance expectations. For example, insert the expectation, "Staff members are required to manage their personal life so that they remains capable of performing their job."

Camp professionals said . . .

"Before I was in the study, I read the article about fatigue in CampLine. I used it as a way to insist my staff take sleeping and showering breaks after our overnights. We only have one overnight per camp per year and staff and campers both try to stay up all night and bond. This made me nervous the next day at the beach. Now I bring in some fresh 'subs' that provide lifeguarding the next day at the beach."

Promising Practice #9: *As you plan camp activities, think carefully about the protective equipment that can help reduce the likelihood and severity of injury (particularly a head injury) during a slip, trip, or fall.*

Think about the surfaces on which camp activities will be played. Take special precautions anywhere potential hazards are identified. Make "planning for the worst" a guiding principle for planning camp activities. Consider this fact: During some study years, protective equipment was not being worn in 50 percent of applicable injury events. Although you might not think that the use of protective equipment is a problem in your camp, be vigilant in your efforts to ensure that it is being used by campers and staff when needed.

Camp professionals said . . .

"Our adventure staff had more information for their participants about helmets."

"[We reminded] staff to use protective equipment, and to remain diligent with explaining the rules of the activity as well as monitoring the activity."

Camp professionals said . . .

"Having the Healthy Camp Study data as a foundation reinforced trainings. Had the trainings been presented without that data, I don't think they would have paid as much attention."

Camp professionals said . . .

"I learned that it takes buy-in from the camp director and staff to have the message of injury prevention actually acted upon."

"Paying attention to our data has resulted in campers spending less time in the health center, staff having healthier summers, and less out-of-pocket expenses for healthcare supplies and medical bills.

Promising Practice #10: *Camp professionals should identify ways for closely monitoring injuries and illnesses among campers and staff, and regularly evaluate and update their health care practices and procedures, integrating new and emerging resources.*

Maintaining a health record log for visits to your camp's health center is a good first step, and it's supported by ACA standards, but there are other ideas you may want to consider. Many resources are available to inform improved practices and procedures. These include ACA's annual summary of Hot Line calls with suggested practices, conducting a risk audit with the camp's insurance company, and accessing informing from organizations such as the Association of Camp Nurses (www.ACN.org). "Collecting and Processing Camp Injury/Illness Information: How Do I Get Started?" (Appendix C) describes another option.

You Can Do It! Using a site specific injury and illness monitoring approach (such as ACA's Healthy Camp Study) can give you a powerful foundation for evidence-based decision making in the areas of health, wellness, and risk management. Here are several steps to consider:

- Complete a health record log to record injuries and illnesses (as required by ACA Standards).
- Annually review your health center logs to identify where adverse events occur. Identify the patterns of injury related to specific activities and locations. Develop specific safety procedures for each camp activity and location where injuries are common.
- Collect additional injury and illness information based on questions asked in the Healthy Camp Study (Table 2).
- Participate in a national data-collection when available.
- Take advantage of a site-specific reporting tool to more closely monitor injuries and illnesses when available.

Promising Practice #11: *Recognize that both administration and frontline staff have responsibility and ownership in your "healthy camp." Use available health data from previous years to inform the current and upcoming year. Camp stops being fun when someone gets hurt. ANYONE and EVERYONE can help prevent injuries and illnesses*

DISCUSSION

Benefits of Surveillance in Camps

The Healthy Camp Study proved that ongoing surveillance of injuries and illnesses is not only possible in day and resident camps, but also fruitful. The study provided national data which allowed the camp community to benchmark actual rates of camper and staff injuries and illnesses as a comparison for camp-specific adverse events. Given the data provided in this report, any individual camp professional could, using the questions provided in Table 2 and the definitions of adverse events provided for campers and staff, monitor injury or illness rates in his/her camp. The Healthy Camp Study provided a simple and effective methodology, but other approaches are likely viable. Any camp professional that collects camp-specific data on camper and staff illnesses and injuries can use their data to develop interventions that improve health and safety. Interventions appropriate for one camp may be different than interventions needed at another camp.

The study provided compelling evidence about the relative safety of the camp experience, as evidenced by the very low rates of camper and staff injuries in both day and resident camps. This is an important marketing message for camps to use to attract parents concerned about the safety of youth settings, and the risks associated with sending one's child away from home for one or more weeks to attend camp. The finding that camp is safer than other youth settings is not entirely surprising. Although data regarding whether or not a camp was ACA-accredited was not analyzed for this study, it seems probable that the high number of participating camps were ACA-accredited, given the recruiting methods that were used. These camps might be more aware of health, safety, and risk management procedures, and may not be representative of the larger population of camps that may not have access to the same health and safety information through ACA.

Prevention is a key message of the Healthy Camp Study, as several opportunities for prevention are highlighted by the results and the promising practices shared by participating camps. By engaging parents in the health screening process before camp and by involving them in the camp's overall health promotion efforts, camps can reduce the spread of communicable illness in camps. By requiring close-toed shoes during appropriate camp activities, and enforcing expectations for the use of protective equipment by campers and staff during applicable camp activities, camps can reduce the likelihood of both foot/toe/ankle injuries and head injuries. By developing an injury/illness monitoring program in camp and engaging administrators and frontline staff in the process, camps can increase their capacity for identifying problem areas (for example, an activity which results in more camper injuries compared with other activities, or a time of week in which staff reports of illness seem to rise). Based on the Healthy Camp Study, these three specific areas of prevention can substantially reduce a camp's experience with injuries and illnesses. Once a camp has addressed those adverse events which are largely preventable, more resources can be devoted in response to incidents that are more difficult to control.

Challenges to Monitoring Illness in Camps

In an attempt to decrease the rates of illness at camp, it's important to remember that illness can be fickle. It doesn't necessarily have an obvious causative agent like an injury. For example, if someone injures an ankle from tripping over a root, removing the root decreases the potential for that injury to reoccur. If, however, that same person complains of a debilitating headache, being sure of causation may not be so easy. Perhaps the person's hydration status is low — or too high. Maybe there's been extended exposure to sun glare or some other eye strain. Maybe the headache is actually a symptom of a greater underlying problem. Because of this, health center staff need to become super sleuths in an effort to figure out the "why?" behind illness, and communicate this information to other camp leaders. Only then can one begin to impact illness rates.

In addition, this study only examined those cases that met the definition of adverse event (took the person away from their regular camp activity for one [day camps] or four [resident camps] hours). What might be discovered if one examined the illness complaints that did not meet the study criteria? Seeking care for minor illness (e.g., slight headache, some joint aches, and a bit of a sore throat) might allow for therapeutic intervention before the minor problem blows up into a bigger issue. As a result, perhaps the rates of impactful illness would decrease over time, thus increasing the likelihood that campers and staff continued to be engaged in the camp program.

Program Improvement in Camp Policies and Practices

The primary purpose of the Healthy Camp Study was descriptive — to describe injuries and illnesses that were occurring within the camp community. However, the study provided an opportunity to design and implement interventions within participating camps, and to use the surveillance methodology to test those interventions.

As previously discussed, the rates of adverse events remained relatively constant across the five years of the study, with the exception of resident camp illness, which spiked in 2009 due to the H1N1 Influenza outbreak. Even though multiple interventions were developed (i.e., the online courses) and administered to participating camps, these interventions did not cause a reduction in the rates of injuries and illness in the areas applicable to the interventions. So how do we assess the impact of the interventions on camp practices? The qualitative data collected at the end of each summer via the end-of-summer survey and the end-of-project survey provide evidence of the specific lessons learned, changes in practice, and "a-ha moments" experienced by camps that participated in the Healthy Camp Study. So, although the results do not indicate, for example, a decrease in the overall rates of slips, trips, and falls because of the "Footloose: Minimizing Trips and Falls at Camp " online course, which taught staff about proper footwear choices, we did read anecdotes and stories from camp directors and health care staff who implemented more stringent footwear policies and practices and experienced positive outcomes as a result. Other data support that camps were implementing changes in practice. Footwear data collected in response to foot/toe/ankle injuries also indicated that more campers and staff were wearing appropriate footwear as the study progressed.

Footwear data collected in response to foot/toe/ankle injuries indicated that more campers and staff were wearing appropriate footwear as the study progressed.

Another factor that may be influencing the reported rates of injuries and illnesses as the study progressed was reporter familiarity with the weekly reporting tool and the overall process of injury/illness monitoring. As they become more aware of injuries and illnesses, and as they became more comfortable using the CAMP RIO online reporting tool, reporters may have entered greater numbers of adverse events than they did in previous years of the study. In fact, on the end-of-project survey, camps reported improved data reporting as they became more familiar with the study's parameters. This may have contributed to more discrete reporting in the various illness and injury categories, thus influencing no reduction in rates.

Finally, the rates of injuries and illnesses are so low that seeing changes in the national data set may be difficult. Individual camps might see a more significant change.

Effective Supervision During Unstructured Time

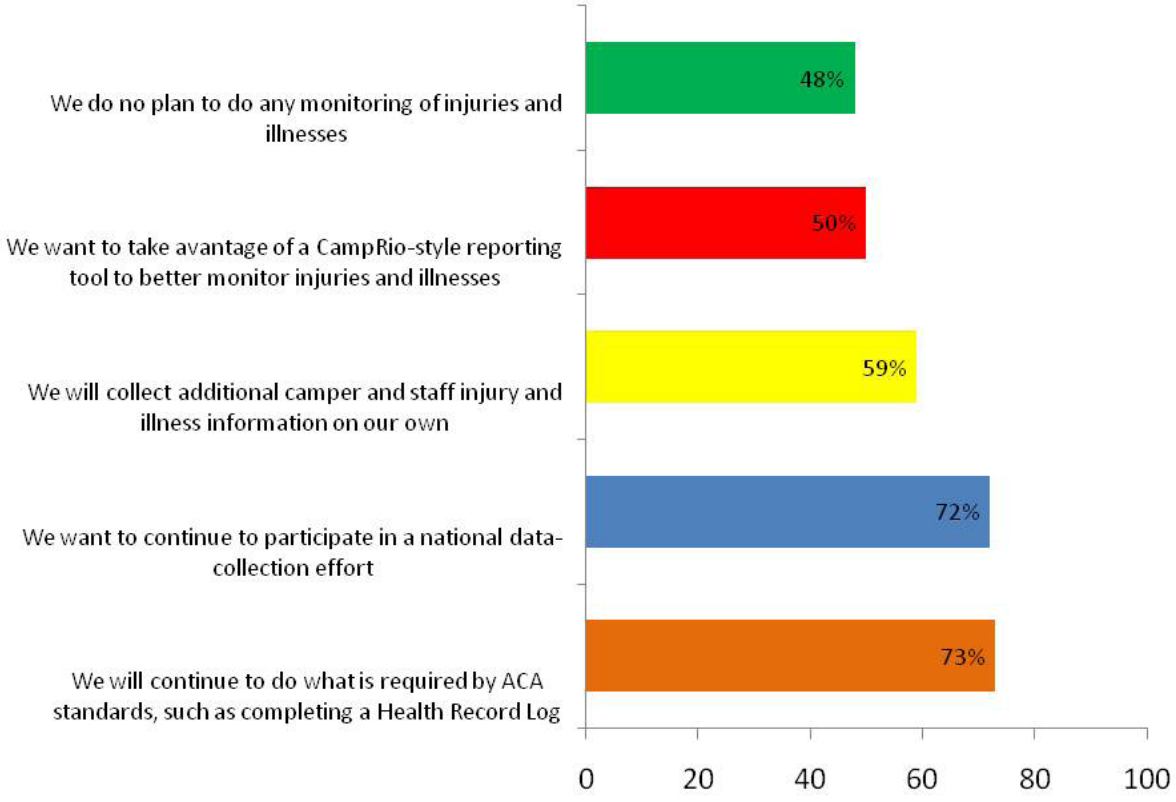
The results of this study around injuries indicated that free time was an area during which injuries were common. Additional research is needed to understand the issue of supervision. All too often, camp staff are told to "supervise the campers," but rarely does someone describe the behaviors that constitute effective supervision. In addition, there's an assumption that effective supervision can reduce or eliminate incidents, especially incidents that result in personal injury. The discrepancy between the desire for effective supervision and a description of what constitutes effective supervision played into discussions surrounding the Healthy Camp Study. The research team wanted to know if supervision, or lack thereof, contributed to injury/illness events. However, the inability to operationally define supervision was a problem. Simply asking "Was the activity supervised?" would not have elicited reliable data; we needed to know the behaviors that constituted supervision.

The Healthy Camp Study challenges camp professionals to consider the times and places at which staff are expected to "supervise" youth and then explicitly describe the behaviors that constitute effective supervision during those times and at those places.

Consequently, there's a need for future research into supervision, specifically the behaviors that contribute to the effectiveness of supervision. For example, if a staff member is directed "to supervise the campers during rest hour," does that simply mean the staff member is present in the cabin? May that staff person fall asleep? What if the cabin is a series of rooms — must the counselor move among rooms? If so, how frequently? And what camper behavior should be noted — conversations? A camper being out-of-bunk, walking around? What does the counselor do when such behavior is noted? What behaviors might be used to describe effective supervision of an area during free time? Is it sufficient that the staff member simply be in the area? May the person read or should their eyes be constantly roving? Does the counselor stay in one area or move around? At what point should the staff member intercede in risky camper behaviors? What are those risky behaviors?!?

One of the better models for supervision behaviors for staff is found in lifeguarding protocols. Aquatic personnel are trained to be on duty in a manner that describes their attire, the equipment they carry, the place(s) they are to be, the way they use their eyes, the behaviors that indicate a swimmer in trouble, specific actions to take in response to an incident, their interface with people around them, and the physical space they are responsible for covering. The Healthy Camp Study challenges

Figure 17: Interest in Future Monitoring of Camper and Staff Injuries and Illnesses Identified by Camps Participating in the Healthy Camp Study (n=134)



camp professionals to consider the times and places at which staff are expected to "supervise" youth and then explicitly describe the behaviors that constitute effective supervision during those times and at those places.

Future of Injury and Illness Monitoring in Camps

As we look to the future of injury and illness monitoring in camps, a desired outcome of the Healthy Camp Study would be to empower camps to increase their capacity for injury and illness surveillance. Camps need the capability to access software tools (such as CAMP RIO) for more effective and efficient tracking of camper and staff adverse events. In the Healthy Camp Study, participating camps received their summary reports once per year (in December). In the future, we envision the need for camps to be able to run camp-specific reports at various times throughout the year for more effective risk management and healthcare planning. A camp-specific tool that allows camps to add their own health-related questions would be desirable.

On the end-of-project survey, camps were asked how they planned to continue to monitor camper and staff injuries and illnesses (Figure 17). Camps overwhelming indicated (79.8 percent) that they would continue to meet the requirements of ACA Standards. Approximately half of the responding camps (48.8 percent) expressed a desire to continue to participate in a national data collection project related to injuries and illnesses and an interest in collecting their own injury/illness information in their own way (46.5 percent). About one-third of the camps (33.3 percent) shared that they would take advantage of a CAMP RIO-style reporting tool if one was available.

The American Camp Association recognizes that there is much more to be learned about injuries and illnesses in camp, but we believe that the Healthy Camp Study has provided a strong foundation and evidence base for what is actually happening in day and resident camps when it comes to the injury and illness experiences of youth and staff. Such an evidence base allows us to make better decisions as a camp community. Our prevention efforts can be targeted. Our intervention strategies can be intentional. Our camps can be safer. Our youth and staff can be healthier. And we can provide even higher quality camp experiences for all those we serve.

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APPENDIX A
Parent Flyer: "A Healthy Camp Starts at Home"

Industry-Relevant Research for Camp Professionals from ACA

2010

Healthy Camp Update

A Healthy Camp Starts at Home!

A healthy camp really does start at home. Here are some things you can do to assure your child has a great summer camp experience.

1. When children show signs of illness, keep them home. This greatly reduces the spread of illness at camp. Be aware of your camp's criteria for inclusion in camp.
2. Teach your child to sneeze in his/her sleeve, and to wash his/her hands often at camp.
3. Closed-toed shoes are a requirement for activities such as sports and hiking. This will help avoid slips, trips, and falls, which could cause injuries. Stress to your child the importance of wearing closed-toed shoes to prevent a toe, foot, and/or ankle injury.
4. Send enough clothes so your child can wear layers. Mornings can be chilly and by afternoon it will be hot. This enables your child to peel his/her layers off as the weather warms.
5. Fatigue plays a part in injuries. If children are going to day camp, ensure they get enough rest at night. If children are going to resident camp, explain that camp is not like a sleepover. Explain to your child that he/she should not try to stay up all night!
6. Don't forget to send sunscreen, and instruct your child how to use sunscreen.
7. Please send a reusable water bottle. Your child can refill it frequently during their camp stay. Staying hydrated is very important in the summer.
8. The American Camp Association's® parent-dedicated Web site, www.CampParents.org, provides a wide range of educational resources to help parents make good health-related decisions for children.

Building a partnership between you and the camp staff is essential for your child to have the best camp experience possible this summer!

APPENDIX B
Staff Health Does Not Equal Camper Health

Originally published in CompassPoint (2008), vol 18 no 4, 1-4.

Linda Ebner Erceg, RN, MS, PHN

Twenty-year-old Patsy was diagnosed with mononucleosis during her final month at college last May. Her recovery was uncomplicated. Her physician approved her work at camp and the camp director concurred; it was possible to manage Patsy's work assignment to support her continued recovery. But she tripped yesterday and slammed belly-down onto a hard surface, hard enough to rupture her still enlarged spleen. It was a small tear but enough for the physician to keep her overnight in the hospital for observation. She's back at camp today and taking it easy. Her parents called the nurse at the camp's Health Center this evening. They wanted to know, "How's she really doing? Tell us about her ruptured spleen."

Seventeen-year-old Jon worked in the camp kitchen. As you might suspect, his duties included washing dishes. As he was working at the scrub sink after lunch one day, he inadvertently mishandled the blade from the slicer; it slipped from his hands, leaving a very long and deep gash across the palm of his right hand. He got stitches, quite a few of them. He used his cell phone to call his parents on the way to the doctor. Now his mom is on the phone with the camp nurse; she wants to know how he's doing and what's going to happen now.

These situations probably sound familiar to seasoned camp professionals. When a staff member gets ill or injured, the impact of that injury or illness has repercussions that are different from those of an ill or injured camper. Part of that impact has to do with balancing return-to-work with recovery. Another impact relates to communication: Who needs to know what about the incident, to what extent can that information can be shared, and what are the boundaries to those discussions? The question is also colored by the age of the staff member; those of legal age are adults and, consequently, vested with the privileges of being an adult. One such privilege is the right to confidentiality about one's health status.

So what's a camp director and the camp nurse to do?

Acknowledge Differences between Adult and Minor Status

People of legal age and deemed competent are capable of self-determination in ways society labels "adult." Those who are under-age, the minor, are overseen by parents/guardians — but not in all things. Minors, for example, often have specific rights — like the age they may marry or have access to birth management processes — that are granted by state law. In addition, state law typically specifies at what age minors may give assent (as opposed to consent) for things such as participating in research, having a procedure done by a healthcare provider, and applying for emancipation. Regardless of age, both adults and minors have an expectation that their personal health information will be held in confidence. And from the Occupational Health and Safety Administration's (OSHA) point of view, OSHA ". . . regulations apply to all employees regardless of age" (U.S. Department of Labor, 1999).

As a result, a growing number of camps are making a distinction in their health center policies for staff, specifically between staff who are adults and those who are minors. The overarching distinction is that staff with adult status can self-determine and are responsible for making their own healthcare decisions. In addition, adults expect that their interaction with the camp's healthcare provider — both regarding care received and issues discussed — will remain confidential, specifically between the camp's healthcare provider and the adult staff member.

For minor staff, however, care policies often change. Because parents are still in a custodial relationship with the child, parents are typically informed and/or consulted when the minor staff member gets ill or injured, especially when out-of-camp care is needed. In addition, input from parents may be sought in the care planning process and information about the minor's recovery is shared. Finally, depending on the relationship fostered between camp administration and minor staff members, an expectation of more "care taking" often comes into play.

Camp Health Practices

Recent revisions in staff health history forms have recommended taking an occupational health perspective (Erceg, 2004), reminding staff — whether adult or minor — that they have been hired to do a job and are responsible for managing their health to remain capable of doing that job. In addition, job descriptions include essential function statements. For the adult worker, this means that a work supervisor would not have carte blanche access to their camp health history or health record. However, there may be exceptions to this general practice, exceptions that are based on defensible rationale. If so, the camp's personnel policies make this known to staff in writing and prior to hire.

However, look at the wording of those policies. If the staff member's work supervisor has access to the staff member's health form, does it say that in the policy? Perhaps more importantly, does it explain why? For the adult staff member, such statements are critically important because their default assumption will be that their health form and record are available only to the camp's healthcare providers. If others have access, adult staff members must be told. If the camp has different practices for minor staff members — including the camp's intent to keep parents informed — those distinctions should also be clearly stated in the policies.
Also make sure the camp nurse and other camp healthcare providers are briefed about the camp's policy. This is especially important because most nurses come to camp with assumptions about healthcare that are shaped by their previous experiences. They will assume that an individual's health information is privileged — all of it — and rightly so. Consequently, the nurse won't even think about sharing personal health information with others. The nurse needs to know, maybe even shown, the camp's written practices, including the distinction between adult and minor staff practices.

Remember the two situations at the beginning of this article? Both of them included parental requests for information. Because camps work closely with parents, it's easy to forget that a parent's request for information is not, necessarily, justification for providing it. Twenty-year-old Patsy's parents are a great example; so is the mom of seventeen-year-old Jon. These parents are asking about their child's health for all the right reasons. While Jon's minor status makes sharing that information possible, Patsy must grant that permission.

Tactfully saying this to Patsy's parents, especially when they may be emotionally stressed over the situation, is tough. In addition, some parents are so into their parenting practices that they forget to consider the impact of their child's adult status upon their (the parents') access to information about that child (even the adult ones). Growing up parents is tough! Couple this with a camp administration that's into "taking care of our staff" and it's understandable why critical messages get set at crossed purposes.

On the other hand, many camps provide a unique bridging experience for young adults. There's an ebb and flow to the transition from being cared for (dependent child) to self-care. Working at camp often facilitates that transition. But that facilitation — especially with regard to personal health information — should be subject to boundary-setting practices that are made known from the get-go via written staff policies. One enterprising camp recognized that parents of staff can be fickle. So the camp's administrative team wrote a letter to the parents that straightforwardly discussed matters such as their inability to discuss health issues.

Recommendations from the Society of Adolescent Medicine

In 1997, the Society for Adolescent Medicine (SAM) published a position statement that, in this writer's opinion, set forth guidelines for healthcare professionals that vary from those many camps have in place for minor staff. As cited by Ford, English, and Sigman (2004), the SAM position included the following statements with respect to confidentiality of adolescent healthcare, positions that may be at odds with the general operating processes of a given camp:

That confidentiality protection is an essential component of adolescent healthcare. It's developmentally appropriate to both the maturity level and autonomy of today's adolescent.

Without confidentiality assurances, some adolescents will not seek healthcare. Healthcare professionals and the entity for which they work should educate adolescents and their parents about the meaning and importance of confidentiality, and the scope of confidentiality protection provided by the entity (this includes any limits). In so doing, the entity would also support communication between adolescents and parents insofar as the entity's policies allow.

The entity informs parents that it will follow laws that allow minors to give their own consent/assent to procedures that are defined by law.

Keeping in mind that minor staff and their parents — as well as many camp health professionals — come from the greater U.S. culture to the camp setting, some come with the assumptions of that society in place; they expect that practices such as those described above are also in place at camp. What they often discover, however, is a camp's rather paternalistic "Let us take care of you" attitude. This value is evidenced in some interesting artifacts of the camp world: Staff relinquish the responsibility for taking their medications to someone who sees that they get it on time, someone monitors their night curfew instead of the individual retaining responsibility for getting enough sleep, and instead of being expected to manage their own recovery process, someone else does it. While practices such as these may be explainable from a camp perspective, they are probably unanticipated to non-camp people and, as a result, cause a rub. All one needs do is explain the distinctions and the reason for them.

On the other hand, perhaps it's time for the camp community to re-examine some of its practices surrounding healthcare of adolescents. Starting with minor staff members makes good sense since the employee relationship doesn't have the care-taking connotation of the client (camper) relationship. Most minor staff members have a certain level of maturity and they evidence autonomy in their employee status. Might something be gained by treating them more like adults in the health center? It's an interesting question to chew on.

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Linda Erceg, RN, MS, PHN, is Executive Director of the Association of Camp Nurses and Associate Director of Health and Risk Management at Concordia Language Villages, a year-round program in northern Minnesota.

APPENDIX C
Collecting and Processing Camp Injury/Illness Information:

How Do I Get Started?

Linda E. Erceg, RN, MS, PHN

You've decided that you want to take a look at your camp's injury/illness data and determine what it tells you about your camp's operations, the people who attend, the staff who work, and the policies you may — or may not — have. Maybe you also want to manage health-associated costs more effectively — things like the amount you spend on supplies for your health center or how to modify your worker compensation insurance. Perhaps you simply want a benchmark for your camp's risk management program. Whatever the reason, collecting and analyzing your camp injury/illness data is important.

. . . But where does one start?

Part 1: Organize the Process

1. Appoint someone to oversee the process. This individual doesn't necessarily have to be the person who collects the data, but it should be someone who can oversee the project and coach other participants.

2. Determine where you'll put collected data. If possible, use a computer spreadsheet program. This can ease the data sorting process but it's also possible to use plain old paper and pencil.

3. Determine who will collect the raw data. This individual should have ready access to the data; consequently, it's often the camp nurse. But a busy health center may mean the nurse doesn't have time to enter information. If that's the case in your camp, consider having an assistant help out, or a staff member who works year-round for camp.

4. Determine your "case definition." In other words, what criteria must an injury or illness event meet in order to get entered into your data set? Some people look at all injuries and illnesses, from minor skinned knees and splinters to hospitalizations. Others start by looking at "significant" data, only those injury/illness events that were so significant that the person had to be seen by a physician. And still others might take only the injuries and illnesses for which people sought care from your health center staff. The point is to select a criteria point that will result in an informative data set for your purposes.

5. Then determine what information about each individual injury/illness incident you want to collect. This is REALLY important since the data set will determine the richness of your data. At minimum, begin by collecting the following information. You can always add more categories as you learn more about your camp's injury/illness profile.

a. Information for both campers and staff. Consider using a lead column to indicate "C" for camper and "S" for staff. This will allow effective sorting without having to run two spreadsheets, which is also an option.
b. Name of person: Take care since associating individual names with data has implications. However, you will want to identify "frequent fliers" and/or staff with recurring incidents. If using a computer spreadsheet, one can always hide the name column if need arises.
c. Sex of the individual (male or female).
d. Age of the individual.
e. Date of injury or illness.
f. Time injury or illness was reported.
g. Diagnosis.
h. Amount of time before person went back to their normal camp routine.
i. Cost of care.
j. During what activity the incident occurred.
k. Where (geographic location) the incident occurred.

6. The data set about individual incidents should be accompanied by another data set about the camp population. This information will be needed to run simple statistics later on. Collect this information about the camp population:

a. Total number of campers and total number of days those campers were at camp.
b. Total number of staff at camp and total number of days those staff members were at camp.
c. If, during the data collection period, there was a significant change in the camp's health behaviors, note that change. You may see data reflect the impact of the change.

7. Decide the source of information for your data set:

a. From the health center log and individual health records?

b. From first aid kit records/notes?
c. From insurance claim forms (including worker compensation)?
d. From people at the time of the injury/illness?
e. From incident reports?

8. Determine when you'll collect the information: at the time of the incident? Later on, from records of the incident?

9. Now that you know what's going to be collected, design the data collection tool. Create a simple spreadsheet into which information can be added.

Part 2: Collect the Data

This is the easy part. Have the assigned person collect your data as planned in Part 1. Just do it!

Part 3: Process Your Raw Data

Now it's time to make sense of your data. To do that, take time to understand these terms:

- Population: This refers to the total number of people in the group being studied. Groups commonly examined in the camp setting are campers and staff.
- Incidence: Simply the number of new cases of an injury or illness.
- Rate: A measure that expresses the risk in your population over a given period of time and in such a way that comparisons between like groups can be made. The constant used to calculate injury/illness rates in the camp population is 1000 camp days.
- Trend: A sense of direction in which data is moving. Injury/illness trends can be observed after three or more years of data collection and processing.
- Calculator: Device which, given correct input, provides reliable output!

1. To determine your camp's injury/illness rate:
   a. Write down the total number of people (campers and staff) at your camp during a given summer:
   b. Write down the total number of days all those people were at camp:
   c. Multiply line A by line B; this is your total of "camp days":
   d. Write down the total number of injuries and illnesses recorded during that time period:
   e. Divide the total number of cases (line D) by the total number of camp days (line C), then multiply that number by 1000:

The resulting number is your camp's injury/illness rate per 1000 camp days for the summer.

2. To determine your camp's staff injury rate:
   a. Write down the total number of staff at camp during the summer:
   b. Write down the total number of days those staff were at camp:
   c. Multiply line A by line B; this is your total of "staff days" at camp:
   d. Write down the total number of injuries collect by your data collection process:

   e. Finally, divide the total number of injuries (line D) by the total number of staff days (line C), then multiply by 1000:

The resulting number is your camp staff's injury rate per 1000 camp days for the summer.

3. To determine your camp staff's illness rate:
   a. Write down the total number of staff at camp during the summer:
   b. Write down the total number of days those staff were at camp:
   c. Multiply line A by line B; this is your total of "staff days" at camp:
   d. Write down the total number of illnesses collected by your data collection process:
   e. Finally, divide the total number of illnesses (line D) by the total number of staff days (line C), then multiply by 1000:

The resulting number is your camp staff illness rate per 1000 camp days.

4. Calculate the same two rates for your campers by repeating steps #2 and #3 and substituting information specific to your campers. For those who are more into math, here's the formula for those steps:

$$\frac{\text{Number of recorded illnesses and/or injuries}}{\text{Total number of camper or staff days}} \times 1000 = \text{Rate per 1000 camp days}$$

Part 4: What is Your Data Telling You?

Begin by looking at your rates. A rate simply tells you, given 1000 of your campers or staff standing in front of you, how many of them would have gotten ill or injured on a given day. By looking at your camp's data over time, you are working with the same population and compare rates year-to-year. Granted, the first year you do this, you only have that year's rates

to consider. But you also have access to the rates collected by the Healthy Camp Study. Do your rates come close to those of the national study?

Compare your staff rates to your camper rates. Is there a difference? Does that difference make sense to you? What group had the lower rates, campers or staff? A lower rate simply tells you which group had fewer injury/illness events; it does not tell you why the rate was lower. In other words, a rate is descriptive, not analytical.

Next, go back to your raw data and sort the data set to answer questions like these:

- Does one sex get ill or injured more than the other? What might that be telling you?
- Is there a particular person who repeatedly gets injured or ill? What implications arise if the person is a staff member? A camper?
- Is there a particular age group that gets injured or ill more often? What might this suggest?
- Look at the date and time during which incidents occur. Do more illnesses occur the longer people are at camp? Do injuries increase as time goes on? Is there a relationship between time of day and when injury occurs?
- Group the diagnosis category. What diagnoses occur most often? Might something be done to make these less likely to occur? What are the most common injuries and illnesses? Does the list change when you sort it for staff as opposed to campers?
- Time lost from the program due to injury or illness impacts perceived quality of the camp experience for campers and reflects loss of work productivity for staff. Might this time be reduced without implicating the quality of health care? Might health center staff change something to make care more effective?

These and other questions will come to mind as you examine your data set. In doing so, remember to revisit the reason why you started this process in the first place. If you are interested in a healthier camp program, consider these questions:

A. Does your camp performance appraisal tool include a statement about the person's ability to keep his/herself healthy enough to do the job?
B. Does your camp performance appraisal tool include a statement about the staff member's ability to manage his/her cabin/activity to reduce camper injury/illness?
C. Does your daily schedule provide adequate rest for campers and staff?
D. Do campers and staff have adequate access to water and nutrition to maintain their resilience to injury and illness?
E. Is the health center staff getting camp leadership involved when some aspect of the camp program, the supplies people are asked to use, the rules they are asked to follow, or the facility in which activity is done seems to cause injury or illness?

Final Thought: Be Realistic!

Change takes time. Select one or two areas in which to direct your change efforts rather than trying to tackle everything all at once. And remember to evaluate your efforts. Once one or two things show improvement, add something else. Before too long, you'll see a difference.

Also remember to involve your leadership staff. Examine the time, resources, and personnel available to effect change. The more people own this information and are part of the improvement process, the more likely results will be noticed.

Share your successes and challenges by e-mailing Linda Erceg (erceg@campnurse.org).

APPENDIX D
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