



## **4-H Teen CERT**

# **An Evaluation of a Two-Day Nevada Training**

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### **Introduction**

Disaster situations affect thousands of individuals every year across the United States. First responders are often pushed to the limit when planning for, and responding to, disasters (National Preparedness Guidelines, 2007). Community Emergency Response Teams (CERT) are trained under approved Department of Homeland Security (DHS) curriculum to assist first responders in a disaster (Citizen Corp, 2011). Traditionally CERT teams are made up of adult community members. However, youth also have important roles they can play to help ensure that disaster planning is optimized and information resources are available to communities. The 4-H Teen CERT program follows the Adult CERT curriculum, with modifications for adolescent-appropriate activities. Working alongside emergency management personnel, CERT-trained youth can assist agencies in educating communities about disasters as well as responding when they occur.

In April 2011, five Nevada youth/adult teams, 22 total participants, attended an intensive two-day training. This CERT training focused on the teens with adult involvement as mentors/supportors for the teen completion of CERT projects. The training included strategies that would help the teams educate their respective communities about community involvement and civic engagement in the realm of disaster preparedness. Other topics included in the two-day training are shown in Table 1. After completion of the two-day 4-H Teen CERT

training, instructors conducted a follow-up survey to determine if course objectives were met. This fact sheet reports on the Nevada evaluation findings.

### **Overview of Training and Evaluation**

University of Nevada Cooperative Extension (UNCE) and Oregon State University (OSU) applied for special grant funding to support the CERT training. The Nevada 4-H Teen CERT training was conducted at Churchill County High School in Fallon, Nev. The first day began with team-building activities designed to not only acquaint participants with each other, but to simulate the chaotic nature of disaster response. Throughout the two-day session, a variety of teaching methods were used to engage the youth both individually and in teams. Specifically, co-instructors delivered content through lecture and demonstration, giving participants the opportunity to practice skills they learned. In addition, youth were asked to “teach back” various concepts by explaining what they learned via presentation to the group as a whole. Youth and adults were asked to evaluate their knowledge of emergency preparedness strategies and the importance of pre-planning for disasters. Instruction included Disaster Preparedness and Mitigation, Utility Management and Hazard Materials, External Search and Cribbing, Patient Movement, Disaster First Aid and Disaster Psychology.

The second day focused on Communication and the Incident Command System (ICS). The

training ended with teams responding to a mock earthquake disaster, participating in search and rescue, triage, transport and medical first aid. Classes included a combination of lecture and hands-on activities. Because the training was designed to prepare teams to educate their communities about disaster preparedness, youth also practiced teaching other training participants about disasters and response strategies.

Teen CERT training participants were asked to complete a retrospective pre-post post evaluation. Although adults were asked to complete the survey, their involvement on the team was to provide support and guidance. We chose to focus on teen responses for our evaluation. As the evaluation was voluntary, survey completion was not required. Instructors asked participants not to put any identifying information on the survey instrument and encouraged participant comments on the survey in order to improve future trainings.

### **Evaluation Method**

The survey instrument was designed to measure knowledge gain, attitude change and skill acquisition following the training. The retrospective pre-post instrument combines both the pre-test and the post-test into one survey and allows participants to rate their knowledge at the end of the program by thinking back to how much they knew before the program began. This evaluation design helps to alleviate the potential of respondents' over- and/or under-assessing their perceived learning, a potential constraint of the traditional pre-test/post-test method. This method was chosen to help address the problem of "response-shift bias" (Colosi and Duncan, 2006).

Surveys, collected on site, were voluntary and confidential. The teen respondents were asked to rate 16 topics using a five-point, Likert-type scale. A total of 17 teen participants completed the evaluation surveys, representing 100 percent of trained youth. While the number of participants is small, the 100 percent participation rate negates many of the issues associated with sample size. However, as new trainings occur, additional evaluation data sets will serve to enhance the reliability of the survey instrument and support the validity of the

training methods by providing a larger number of surveys for comparison. Evaluators used descriptive statistics software (IBM SPSS 19.0 Software, 2010) to analyze survey results.

All evaluation instruments and research procedures were submitted through OSU's Institutional Review Board (IRB) and approved through University of Nevada Reno's Office of Sponsored Projects before the sub-award was accepted. University IRBs serve to ensure that correct investigative protocols are maintained through the entire research process to protect respondents' confidentiality.

### **Participant Demographics**

Five teams, including three from Churchill County and two from Lyon County, attended the training. The teams were comprised of both youth and adults, for a total of 22 participants. Youth and adults were either members of a high school affiliated Health Occupations Students Association (HOSA) class or a UNCE county 4-H program. As the program is designed for older teens, invited students were 14 years of age or older. Two youth were male and 15 youth were female. The average age of student attendees was 15.

### **Evaluation Findings**

Survey results immediately following the training revealed statistically significant increases in participant knowledge, attitude change and skill acquisition, based upon a paired t-test comparison of mean pre-test and post-test scores for all survey questions. Table 1 below shows the ranked mean scores for each of the teaching topics included in the survey (1=low rating and 5=high rating on a Likert scale). The rankings shown in Table 1 indicate which topics had the greatest average score improvement comparing pre- to post-scores for the 16 topics surveyed. In the ranking of topics, "The skills needed to safely move disaster victims" showed the biggest increase in knowledge gain. The third highest gain related to the role of a CERT in a community disaster. Prior to the training, the mean score for this question was a 2.29. Following the training, the mean score was 4.65, indicating that the training met its objective of educating participants about the importance of Community Emergency

<b>Table 1:</b>  <b>Topics Used to Evaluate 4-H Teen CERT Training</b>	<b>N</b>  <b>Matched Pairs</b>	<b>Pre-Test</b>  <b>Mean Scores</b>	<b>Post-Test</b>  <b>Mean Scores</b>	<b>Ranking</b>
<b>The skills needed to safely move disaster victims</b>	<b>17</b>	<b>2.12</b>	<b>4.82<sup>a</sup></b>	<b>1</b>
<b>The value of being prepared to help my community respond to a disaster</b>	<b>17</b>	<b>2.12</b>	<b>4.53<sup>a</sup></b>	<b>2</b>
<b>The role of a Community Emergency Response Team (CERT) in a community disaster</b>	<b>17</b>	<b>2.29</b>	<b>4.65<sup>a</sup></b>	<b>3</b>
<b>The skills needed to search for and find disaster victims</b>	<b>17</b>	<b>2.47</b>	<b>4.76<sup>a</sup></b>	<b>4</b>
<b>The role of a Teen CERT in a community disaster</b>	<b>17</b>	<b>2.18</b>	<b>4.41<sup>a</sup></b>	<b>5</b>
<b>The value of helping my community address emergency preparedness issues</b>	<b>16</b>	<b>2.19</b>	<b>4.31<sup>a</sup></b>	<b>6</b>
<b>The areas of training needed to safely respond to a disaster</b>	<b>17</b>	<b>2.41</b>	<b>4.53<sup>a</sup></b>	<b>7</b>
<b>The purpose of emergency preparedness in my community</b>	<b>17</b>	<b>2.88</b>	<b>4.88<sup>a</sup></b>	<b>8</b>
<b>The value of a youth/adult partnership</b>	<b>17</b>	<b>2.29</b>	<b>4.18<sup>a</sup></b>	<b>9</b>
<b>The steps to be taken before a disaster affects my community</b>	<b>17</b>	<b>2.59</b>	<b>4.35<sup>a</sup></b>	<b>10</b>
<b>The Incident Command System (ICS) as a universal language and process for responding to a disaster</b>	<b>17</b>	<b>2.53</b>	<b>4.24<sup>a</sup></b>	<b>11</b>
<b>The skills needed to stay safe when responding to a disaster</b>	<b>17</b>	<b>2.94</b>	<b>4.59<sup>a</sup></b>	<b>12</b>
<b>The value of knowing which disasters affect my community</b>	<b>17</b>	<b>3.06</b>	<b>4.65<sup>a</sup></b>	<b>13</b>
<b>The importance of disaster preparedness</b>	<b>17</b>	<b>3.18</b>	<b>4.59<sup>a</sup></b>	<b>14</b>
<b>The first-aid skills I need to help following a disaster</b>	<b>17</b>	<b>3.29</b>	<b>4.59<sup>a</sup></b>	<b>15</b>
<b>The psychology of a disaster</b>	<b>17</b>	<b>3.00</b>	<b>4.29<sup>a</sup></b>	<b>16</b>

Rating code: 5 = very much; 1 = very little

<sup>a</sup>Differences between pre-test and post-test scores statistically significant at  $p < .001$  using a paired t-test comparison

Cronbach's Alpha = .856

Response Teams. A related question “the role of a Teen CERT in a community disaster” ranked fifth. This lower ranking regarding Teen CERT needs further clarification in future evaluations. Future analysis could include analysis of the rankings to see if this lower rating of the role of Teen CERT is statistically different or just a minor variation of mean score compared to the top rated items.

In addition, a Cronbach’s Alpha test was run to determine the reliability of the evaluation instrument used. Reliability tests are used to verify if the instrument used is consistently measuring the questions asked. In order to be considered reliable, it is recommended that the reliability score be .70 or higher before the instrument is used. The Cronbach’s Alpha test for the 4-H Teen CERT training received a reliability score of .856, indicating that the evaluation survey was consistently measuring what it was designed to do.

Subsequent to the 4-H Teen CERT training, agencies in Churchill County participated in a mass casualty drill to test their response strategies in an emergency situation. The drill scenario involved a Boeing KC-135 Stratotanker crashing in the school parking lot, injuring several students and the pilots from the plane. HOSA students who participated in the 4-H Teen CERT training worked with adult medical personnel to treat “victims” of the drill (Reynolds, 2011).

## Summary

The 4-H Teen CERT training focused on three main objectives: 1) to train youth and adult teams on how to deliver the 4-H Teen CERT program to community youth, 2) to enhance the preparedness level of communities through youth education concerning appropriate disaster response, and 3) to engage youth in emergency preparedness and response to benefit their communities.

As a 4-H activity, the Teen CERT program uses effective strategies to support developmental assets in a framework of experiential learning. Another goal is to train youth and adult teams to educate and assist their communities to be

better prepared in the event of a disaster. Follow-up evaluations are necessary to determine long-term impacts on both the youth development aspects of this activity as well as the impact on the community. The two-day Nevada event was an opportunity for youth and adults to learn about what they can do to help first responders and communities stay safe in emergencies.

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