

Knowledge and beliefs about the Red Cross: Perspectives of community members and Red Cross workers in San Ramón, Alajuela, Costa Rica

Tela Ebersole¹ & Anabelle Alfaro Obando²

1. Grinnell College, 1115 8th Ave., #3466, Grinnell, IA, USA 50112 ebersole@grinnell.edu
2. anabellealfaro@gmail.com

Received 27-VIII-2015 • Corrected 10-XI-2015 • Accepted 02-XII-2015

ABSTRACT: In Costa Rica, the Red Cross provides most pre-hospital emergency care and transport. Very few studies have investigated extra-hospital emergency care in Costa Rica so this study aimed to fill this gap through interviews with community members, surveys of Red Cross workers and volunteers, and observations of the daily functioning of the Red Cross Committee in San Ramón, Alajuela, Costa Rica. Over the course of 7 weeks of observation at the Red Cross office of San Ramón, 136 interviews and surveys were collected. The study found a well-equipped organization that provides many emergency and non-emergency services for the community. People, mostly over 45 years old, interviewed at the Red Cross were more likely to believe that the community uses the Red Cross's services rationally than people interviewed at other locations. Community members and Red Cross workers strongly differed in whether or not the community uses the services appropriately; community members felt that they did, while Red Cross workers felt that the usage was often inappropriate and for non-emergency cases, which would be better suited to a clinic. Educating the public about appropriate use of Red Cross services would save money and resources for true emergencies.

Key words: Costa Rican Red Cross, rational usage, emergency services, pre-hospital care, community education, public health.

RESUMEN: Conocimientos y creencias sobre la Cruz Roja: perspectivas de miembros de la comunidad y trabajadores de la Cruz Roja en San Ramón, Alajuela, Costa Rica. En Costa Rica, la Cruz Roja provee la mayoría de la atención pre-hospitalaria de emergencias. Muy pocos estudios han investigado el cuidado de emergencias extra hospitalarias en Costa Rica y por eso la meta de este estudio es llenar este espacio al entrevistar a los miembros de la comunidad, hacer encuestas a los trabajadores y voluntarios de la Cruz Roja, y observar el trabajo diario del Comité de la Cruz Roja en San Ramón, Alajuela, Costa Rica. Se hizo 136 entrevistas y encuestas y se observó durante siete semanas el funcionamiento de la Cruz Roja de este lugar. Se encontró un Comité con bastantes recursos que provee muchos servicios para la comunidad. Miembros de la comunidad, la mayoría de más de 45 años y quienes fueron entrevistados en la Cruz Roja, creyeron que la comunidad usa los servicios de la Cruz Roja más racionalmente que la gente de otras zonas aledañas. La comunidad siente que sí se hace uso racional de los servicios, pero los trabajadores de la Cruz Roja opinan que el uso de los servicios por parte de la comunidad muchas veces no es racional y en casos que no son emergencias y que deben ser tratados en una clínica. A modo de recomendación, se podría brindar educación sobre los tipos de casos que requieren los servicios de la Cruz Roja para que el uso sea más racional, y se ahorran monetarios, de equipo, y de personal para emergencias verdaderas.

Palabras claves: Cruz Roja Costarricense, uso racional, servicios de emergencia, cuidado pre-hospitalario, educación de la comunidad, salud pública.

The recent decrease in trauma mortality in developed countries has been largely attributed to improved pre-hospital emergency medical services (Roudsari, Nathens, Arreola-Risa, Cameron, Civil, Grigoriou,... Rivera, 2007). In Costa Rica, the Red Cross functions as the primary prehospital and emergency service for the country (Cruz Roja Costarricense, 2015), but little research exists on prehospital care. Several studies (Doezema, Sklar, Roth, Rodolico, & Key, 1991; Mitchell, 1991; Keyes, Rodriguez-Gomez, Quesada-Rodriguez, & Waller, 1999; Nowacki,

Landes, Azazh, & Puchalski Ritchie, 2013) focused on the development of emergency physician training and in-hospital care. Although one study (Welch, 1997) spent three weeks observing the Red Cross and their prehospital care, no quantitative data were included. This study aims to provide information about one community's usage and understanding of the Red Cross's services.

In addition to ambulance and emergency services, the Red Cross provides a wide variety of other community services: vehicle, water, and vertical rescue; wheelchair

and crutches loans; location for public utilities payments; first aid/first responder courses; blood pressure checks; a volunteer program for adolescents; and transportation for non-emergency patients to appointments when the government's ambulances are not available. The organization works in community development to improve physical, mental, and social health conditions and for social inclusion and a culture of peace (Cruz Roja Costarricense, 2015). Because the Red Cross does not receive direct funding from the government (Welch, 1997), the San Ramón office developed the Contributing Families Program, where families make small monthly donations to the committee.

For emergency medical and trauma services, the Red Cross does not receive direct government funding, but is compensated for their services by two governmental institutions. For medical cases, the Caja Costarricense Seguro Social (CCSS, the governmental health insurance) reimburses the Red Cross if a) the patient is insured by CCSS and b) the doctor who receives the patient at the emergency room considers the case an "emergency," as defined by the doctor. Compensation is based only on miles traveled for the case. When the Red Cross transports patients to appointments, they receive compensation based on mileage by CCSS. For trauma cases, the Red Cross is compensated by the Instituto Nacional de Seguros (INS, nationalized insurance institute) if a) the injury was the result of a car accident or occurred at work and b) the patient required treatment at the INS hospital in San José. For all cases that do not meet these criteria (usually that the case was not severe enough to be called an "emergency" or to require transport to the trauma hospital, or if the person has purchased private insurance), the Red Cross receives no compensation for the services rendered or materials used (O. Steller, personal communication, April 20, 2015).

Requests for emergency services arrive at the San Ramón committee in two ways. Two emergency numbers go directly to the Red Cross in San Ramón. The staff member who answers dispatches appropriate resources, contacts other agencies such as fire and police if necessary, and records information in a database. If a person in San Ramón calls 911, the national emergency number, the call is answered in San José, sent to the provincial dispatch in Alajuela, which then phones or radios the San Ramón Red Cross. There is no nationwide number for non-emergency medical situations, which means that many people call the emergency number for non-emergency circumstances (J. Herrera, personal communication, April 25, 2015).

To examine pre-hospital care, I collected both quantitative data from interviews and qualitative data from observations in San Ramón, Costa Rica, March to April, 2015. The objectives were to: 1) determine the understanding by the residents of San Ramón of the Red Cross's goals and services, 2) examine the perceptions of Red Cross workers about the community's understanding and use of the Red Cross services, and 3) understand the services that the Red Cross provides and how these compare to the beliefs of community members.

MATERIALS AND METHODS

The Questionnaire and Its Application

I interviewed community members at the Red Cross, at the University of Costa Rica in San Ramón, in the central park, and at my host family's house (Appendix A). When interviewing at the Red Cross, I approached people waiting in line to pay their utility bills. Generally, I selected potential interviewees at the end of the line to avoid asking them for extra time for the interview. This method made selection approximately a random sample from the population of residents who pay their utilities at the Red Cross, as people were not chosen based on whether they looked "approachable" or other unconscious biases. While conducting interviews, I was provided a Red Cross uniform, which allowed me to be recognized by the public as an official worker. One question asked about the rational usage of the Red Cross's services; the term rational usage is my own and was not defined in the questionnaire or survey, but left to each person to define.

I distributed a questionnaire to Red Cross workers (paid employees and volunteers), which they could fill out without me present. This allowed them to complete the survey when they had free time and allowed me to gather information from workers that I never met.

Through informal conversations with the Red Cross workers and my own observations, I gathered additional information about the services offered, general structure of the organization, roles of the workers, individual's opinions about rational usage (which each individual defined for themselves), and other pertinent information about the day-to-day functioning of the organization. Additionally, the Red Cross provided me data for all 2014 calls for which they dispatched an ambulance. My interview process followed current Institutional Review Board guidelines that follow the Belmont Principles for protection of human research subjects and was approved by the Associated Colleges of the Midwest Ethics Panel.

Study Site

San Ramón, Alajuela Province, Costa Rica has a population of approximately 15,000 people in the city center and 80,000 people in the larger surrounding area. It is located on the western edge of the central valley, 58 km from the capital city of San José and 33 and 140 km from the Pacific and Caribbean coasts, respectively. San Ramón's altitude of 1,057 m above sea level contributes to milder than expected temperatures for this tropical latitude, with a mean annual temperature of about 25°C ("San Ramón," n.d.).

The Red Cross is located in downtown San Ramón. They employ 21 office and emergency workers, with another 120 volunteer rescuers, although only about 20 to 25 of those volunteer on a monthly basis (J. Herrera, personal communication, April 25, 2015). They have five ambulances and one rescue vehicle to serve an area of 553,6 km² (O. Steller, personal communication, April 20, 2015).

Data Analysis

Open-ended interview and survey answers were categorized for analysis. I characterized my interview populations based on demographic questions on the questionnaire. I performed Chi-square tests of association (Minitab 17) to test for independence between attributes such as rational usage, understanding of the goals of the Red Cross, and different groupings of the population.

RESULTS

Sample Size and Characteristics

Thirty-five Red Cross workers responded to the survey (male 62,9%; female 37,1%) and 101 community members were interviewed (male 42,6%; female 57,4). All but one of the Red Cross workers lives in San Ramón. Ten were office workers (cashiers, administrators, and staff for the Contributing Families Program) and the other 25 were ambulance workers, including drivers, Emergency Medical Technicians, and paramedics (Digital appendix 1,2).

Community members were asked how frequently they saw Red Cross workers: daily, weekly, monthly, yearly, or never. Overall, the Red Cross appeared to be relatively visible in the community, as 43,7% saw the Red Cross personnel at least once a week, while only

19,5% said they never saw Red Cross personnel (Digital appendix 3).

The workers reported that they enjoyed their jobs, and 94,1% felt that they were able to have a positive presence in the community of San Ramón while helping its residents. In answer to the question about their favorite part of the job, 71,4% responded that it was "helping those in need." The other answers ranged from "driving" to "everything." One Red Cross worker responded, which seemed representative of the majority of the workers, "The satisfaction that I get from having worked and having done my best in situations where people depend on my work equipment to alleviate their pain, safeguard their life and achieve it in a positive form" (translation from Spanish).

Types of Calls: Out of the 7,578 dispatches of an ambulance in 2014, 52% were for medical cases, 15,4% were for trauma cases. 16,5% were administrative duties (collecting money from advertisers and contributing families), and 8,8% for non-emergency transports (Digital appendix 4). The vast majority, 90,1%, of Red Cross workers accurately understood that medical cases were the most common reason for calls. The remaining workers identified trauma as the most common reason for calling.

Effects of Demographics on Knowledge and Perceptions of Red Cross: Older community members were more likely to know the local direct number for emergencies (Digital appendix 4 and 5); however, older people were also more likely to be interviewed at the Red Cross location (Digital appendix 6), which could potentially account for a portion of this better knowledge. Younger people were more likely to be interviewed at other locations (Digital appendix 6). People interviewed at the Red Cross were more likely to say that the community rationally uses the services (Digital appendix 7). Approximately equal numbers of males and females were interviewed at the Red Cross, but many more females were interviewed at other locations (Digital appendix 8). Gender did not appear to impact perceptions or knowledge of the Red Cross.

People from the community generally seemed satisfied with the services currently offered by the Red Cross and most (87,8%) did not list any additional services they wanted. The few people who did want more services wanted more personnel/a faster response time (4,1%), for the Red Cross to educate the community (7,1%), and to conduct house check-ups (2,0%).

Community members generally listed only "respond to emergencies"/"transport patients" when asked what

services the Red Cross provides. However, when provided a list, they acknowledged or remembered that the Red Cross offers many additional services.

Perceptions of Red Cross Workers: Red Cross workers believed that community members who knew the direct number were more likely to use services rationally (Digital appendix 9 and 10). The longer that workers had been with the Red Cross, the more likely they were to believe that the community did understand why the Red Cross was present (Digital appendix 11).

Rational Usage: Community members thought people used Red Cross services rationally (Digital appendix 12) and 77,0% said that people called for “emergencies,” “sickness,” and “accidents.” Another 19,0% believed that people call for transportation or because the Red Cross offers efficient and quality care. The few people who believed that the community does not rationally use the services said people call for small things, to “bother” the Red Cross, or because the services are free. On the other hand, Red Cross workers differed in opinion to community members [Digital appendix 12; $\chi^2(2, n = 131) = 42,55$; $P < 0,0001$], stating that the community did not rationally use the services (71,4%) and that the most common calls were for preventable, non-emergency, or chronic cases.

The workers with from 0-5 years at the Red Cross were the most likely to say that community members use this services rationally. However, after 6 years of work or more, the majority of workers thought there was not rational usage (Digital appendix 13). Workers who thought that community members knew the direct number were less likely to say that there was rational usage (Table 10). No difference was found between Red Cross workers and community members about knowing the direct emergency number [Digital appendix $\chi^2(1, n = 135) = 0,71$; $P = 0,400$].

The Red Cross responds mostly to non-emergency situations: According to San Ramón's Red Cross database, 7,5% of calls in 2014 were code green, meaning they were for non-emergencies, the majority of calls at 91,9% were code yellow, for people who need help but not immediately, with the remaining calls for emergencies and fatalities.

Perception of the Red Cross by the Community: Overall, the Red Cross appeared to be relatively visible in the community. Many community members viewed only ambulance workers as Red Cross workers and seemed to

not view the Red Cross workers who collect payments of utility bills as Red Cross staff, for example, one older male participant told me, as he was standing in line to pay his bills in the Red Cross building, that he never saw Red Cross personnel.

Perception of community's usage by Red Cross workers: After 5 years of working at the Red Cross, workers seemed to have a more realistic view of the community's usage of their services, as workers with more experience indicated overwhelmingly that they believed there was irrational usage.

Location of interview and age impacted results: Gender and age both showed significant associations with location, because people interviewed at the Red Cross were generally middle-aged women and older men and women. The positive relationship between age and being interviewed at the Red Cross likely contributed to the findings that older people saw Red Cross personnel more frequently, were more likely to know the direct emergency number, and were more likely to have seen the Red Cross magazine.

The population that pays their utilities at the Red Cross, both during the week and on Saturdays, was mostly middle-aged women and older, most likely retired, men and women. Many younger people likely pay online. The older population was more likely to be involved in the Contributing Families Program. The oldest population of 65+ was the most likely to say there is rational usage, possibly because as contributors to the Red Cross, they were hopeful that their money was being put to good use.

Although essentially the same proportion of people did and did not know the direct emergency telephone number, more people with only primary school education knew the number than those with higher levels of education. It is possible that this result is also related to the location of the interview and age of interviewees, as the older population was more likely to have less schooling, but were more involved in the Red Cross, therefore making it more likely that they would know the number.

Community and Red Cross disagree on rational usage

The drastically different responses from the Red Cross workers and the community members about rational usage indicates a large issue with the usage of the Red Cross's services. Overall, the community felt satisfied

with the services and believed that they used the services rationally. The large proportion of Red Cross workers who did not feel that there was rational usage expressed frustration about the large number of non-emergency calls. The high percentage of code yellow calls (requires help but not an emergency) during 2014 makes it difficult to truly assess the proportion of emergency to non-emergency calls. The yellow category is the broadest of the four triage color categories and therefore the severity can vary broadly (O. Stellar, personal communication, August 24, 2015). In order to fully answer this study's question of rational usage, a modified triage system would be necessary that would more clearly discriminate between emergency and non-emergency cases.

DISCUSSION

Like many United States emergency services (Sampson, 2002; Johnson, 2008; Auge, 2009), San Ramón's Red Cross appears to suffer from large numbers of non-emergency calls based upon worker responses and the high percentage of green and yellow calls in comparison to code red calls (Digital appendix 15). Other emergency services have produced brochures ("Emergency," 2011), conducted education campaigns (Sampson, 2002), established community health paramedics (Auge, 2009), created per-incident fees (Johnson, 2008), or created a separate non-emergency number (Sampson, 2002) to combat this issue to free resources for true emergency cases and to save money and time.

"Rational usage" should be a goal of all pre-hospital services because this will allow organizations to help individuals with true emergencies and to reduce costs. Although this study examined only San Ramón, these findings suggest a nationwide trend of irrational usage that likely contributes to the Costa Rican Red Cross's current financial crisis, in which over 50% of local committees are operating at a loss (Galeano, 2015). Reducing the number of calls through an aggressive education campaign, similar to those that the Ministry of Health has conducted on mosquito-borne illnesses (Ministerio de Salud, 2014), would likely improve the economic situation of the Red Cross as well as free up resources to ensure prompt attention for true emergencies. Because the Red Cross is part of an international organization and is not under the jurisdiction of any government, the Costa Rican Red Cross would need to design and pay for the educational campaign themselves. This campaign should include specific examples of situations that do and do not require the Red Cross's attention as well as listing resources for non-emergency or chronic

cases. The Red Cross could partner with hospitals, clinics, schools, and various media organizations to disseminate this information.

Overall, the San Ramón Red Cross Committee appeared to be a well-equipped, well-trained, and dedicated group that could better educate the community they serve on appropriate use of their services. This would probably allow them to better respond to true emergencies and to save money. These changes could also positively affect staff morale so that they feel that they are making a difference in the community and not merely providing free transport.

ACKNOWLEDGMENTS

I wish to thank the Associated Colleges of the Midwest for the funding and resources that allowed me to conduct this research. Thanks go to my advisor, ACM director Bonnie Furman, Michael McCoy for reading manuscripts, Mario Morera for invaluable Spanish support, and James Ebersole for advice on data analysis and interpretation. The Red Cross of San Ramón graciously opened their doors to me and allowed me to be part of their organization for two months while I conducted this study. My host families in San Ramón and San José were wonderfully welcoming and helpful, and my study would not have been possible without their support.

LITERATURE CITED

- Auge, K. (2009, Dec 12). 911 non-emergencies a growing problem nationwide. *The Denver Post*. Retrieved from: http://www.denverpost.com/ci_14084125
- Cruz Roja Costarricense. (2015). Departamento de Informática. Retrieved from: <http://www.cruzroja.or.cr/>
- Doezema, D., Sklar, D. P., Roth, P. B., Rodolico, M. P., & Key, G. (1991). Development of emergency services in Costa Rica: A collaborative project in international health. *The Journal of the American Medical Association*, 265(2), 188-190.
- Emergency vs non-emergency calls. (2011). E-Comm Emergency Communications for British Columbia Incorporated. Retrieved from: <http://www.ecomm911.ca/non-emergency-calls/>
- Galeano, A. (2015, Feb 25). Cruz Roja Costarricense está inmersa en una crisis económica. *La Prensa Libre*. Retrieved from: <http://www.prensalibre.cr/Noticias/detalle/14484-cruz-roja-costarricense-esta-inmersa-en-una-crisis-economica>.
- Johnson, M. A. (2008, Aug 5). 911 systems choking on non-emergency calls. *NBCNews*. Retrieved from: <http://www>

nbcnews.com/id/26040857/ns/us_news-crime_and_courts/t/systems-choking-non-emergency-calls/%20-%20.VSv7WPMG8rU#.VT-qAyFViko

- Keyes, C., Rodriguez-Gomez, G., Quesada-Rodriguez, D., & Waller, J. (1999). The Costa Rican emergency medicine residency: Design and implementation of a new specialty training program in Central America. *Annals of Emergency Medicine* 34, 790-795.
- Ministerio de Salud. (2014). Mi comunidad sin dengue informa. Retrieved from: <http://www.ministeriodesalud.go.cr/index.php/material-educativo/mi-comunidad-sin-dengue/boletines/2301-boletin-numero-1-mi-comunidad-sin-dengue/file>
- Mitchell, C. (1991). International EMS: Lessons learned in Costa Rica. *The American Journal of Emergency Medicine* 9, 375-378.
- Nowacki, A. K., Landes, M., Azazh, A., & Puchalski Ritchie, L. M. (2013). A review of published literature on emergency medicine training programs in low- and middle-income countries. *The International Journal of Emergency Medicine* 6(26), 1-10.
- QAEMS Department. (n.d.). Mass casualty, START triage and the SMART tag system. Retrieved from: <https://www.blessinghospital.org/upload/docs/Emergency%20Medical%20Services/ContinuingEducation/01STARTTriageandSMARTTAGS-2013.pdf>
- Roudsari, B. S., Nathens, A. B., Arreola-Risa, C., Cameron, P., Civil I, Grigoriou, G.... Rivera, F. P. (2007). Emergency Medical Service (EMS) systems in developed and developing countries. *International Journal of the Care of the Injured* 38, 1001-1013.
- Sampson, R. (2002). Misuse and Abuse of 911. Center for Problem-Oriented Policing. Retrieved from: http://www.popcenter.org/problems/911_abuse/print/
- San Ramón, Costa Rica. (n.d.). *San Ramón Guide*. Retrieved from: <http://www.sanramon-costarica.com/>
- Welch, D. 1997. Emergency services in Costa Rica. *International Journal of Trauma Nursing* 3, 41-45.

SEE DIGITAL APPENDIX

APPENDIX A

Interview questions. San Ramón, Alajuela, Costa Rica. March-April 2015.

Questions for community members:

¿Cuál es su género?

Masculino

Femenino

¿Cuántos años tiene usted?

18-24

45-64

25-44

65 o más

¿Qué es su nivel de educación más alta?

primaria

técnico

secundaria

ninguna

universitario

¿Por cuántos años usted ha vivido en San Ramón?

¿Tiene usted un pariente o amigo que es voluntario o trabaja en la Cruz Roja?

Sí

No

¿Con que frecuencia ve usted el personal de la Cruz Roja en su comunidad?

¿Usted o alguien que viva en su casa ha necesitado los servicios de la Cruz Roja?

Sí

No

¿Por qué piensa que la gente llama a la Cruz Roja?

¿Piensa que la gente hace uso racional de los servicios de la Cruz Roja?

Sí

No

¿Qué otros servicios le gustaría que la Cruz Roja ofrezca a la comunidad?

¿Ha visto usted la revista de la Cruz Roja sobre su trabajo aquí en San Ramón?

Sí

No

¿En caso de una emergencia, que necesite los servicios de la Cruz Roja, sabe usted el número directo de la Cruz Roja en San Ramón (2445-5484/2445-7600)?

Sí

No

Ubicación de la entrevista:

Cruz Roja

Otro

Questions for Red Cross workers:

¿Cuál es su género?

- Masculino Femenino

¿Cuántos años tiene usted?

- 18-24 45-64
 25-44 65 o más

¿Qué es su nivel de educación más alta?

- primaria técnico
 secundaria ningún
 universitario

¿En la Cruz Roja, que es su trabajo específico?

¿Por cuantos años ha trabajado con la Cruz Roja en San Ramón?

¿Vive usted en San Ramón?

- Sí No

¿Considera usted que su trabajo en la Cruz Roja le permite proyectarse a la comunidad de San Ramón?

- Sí No

¿La gente de San Ramón hace uso racional de los servicios de la Cruz Roja?

- Sí No

¿Qué parte de su trabajo en la Cruz Roja es que más le gusta?

¿Piensa usted que la gente entiende porque la Cruz Roja está aquí en la comunidad?

- Sí No

¿Cuál piensa usted que es el problema de salud más frecuente solicita los servicios de la Cruz Roja en San Ramón?

¿Piensa usted que la gente sabe el número de teléfono directo para la Cruz Roja?

- Sí No