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Number of Annual Service Requests: 46,000  
Number of Ambulances: 68  
Business Type(s): Privately-Held Corporation  
Project Participants: James Pierson, COO/VP, [JPierson@medicambulance.net](mailto:JPierson@medicambulance.net)  
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**Entry Categories: Clinical Outcome Project**

Situational Analysis: In the USA, sudden cardiac arrest is one of the leading causes of death accounting for about 350,000 deaths per year which is greater than 11% of all annual deaths. The only more common causes of death are all forms of heart disease combined and all forms of cancer combined. After a sudden cardiac arrest event occurs the haste in receiving appropriate interventions is the most important influence in overcoming the otherwise 94% fatality rate.

Medic Ambulance Service has been family owned and proudly serving the local community of Solano County California since 1979. Our citizens always come first; after all, they are our family, friends, neighbors, and the friendly faces we pass in the grocery store. We understand that when our crews arrive on scene that bystanders are relieved to know that top quality EMS professionals, training, and equipment are being employed. Knowing that even seconds matter is the backbone to our continuous 99+% response time compliance. However it's not enough for us to get high caliber resources on scene quickly; these victims need help immediately and a bystander will usually be first to find a victim. This is where our Free CPR training and our donations of strategically placed Automated External Defibrillators (AED) bridge the time gap until EMS is on scene.

Medic Ambulance has donated 45 AEDs to the local community which have been placed in public areas such as in schools, colleges, public hiking areas, and with plans to donate at least 15 more over the next year. James Pierson, the VP and COO of Medic Ambulance has coordinated with local politicians, administrators, and non-profit leaders to identify the most beneficial locations for the AEDs. Medic Ambulance trains the employees of the locations where the AEDs are installed on proper use, and maintenance of the AEDs. At most locations Medic takes on the primary role of verifying serviceability and monthly inspections of these AEDs; whereby at the rest of the locations a staff member with appropriate training completes these inspections.

- Project Goals:
1. Increase public awareness about the life-saving advantages of early intervention targeting cardiac chain of survival to save lives
  2. Promote the frequency use of bystander CPR with AED prior to EMS arrival within our service area.
  3. Improve the access to AEDs within our service area.

Planning & Implementation: Medic Ambulance Service is the exclusive ALS service provider in Solano County, the county we have served since opening our doors in 1979. Our primary motivation is to yield better patient outcomes and instinctively response times, crew education on best-case practices, and adoption of improved technologies were on the forefront of yielding positive changes. Through our sharing of patient outcome data amongst the field staff, our Quality Assurance Department, our local EMSA, and our local hospitals it was evident that the absence of appropriate care delivery prior to EMS arrival spoke volumes on the survivability and quality of recovery in patients who experienced sudden cardiac arrest in the community.

The data showed that in many cases of cardiac arrest bystander CPR was seldom started and when it was initiated it was believed to generally be of low quality. Additionally the use of an AED prior to EMS arrival was even more uncommon. This became the focus point where to impact the mere 6% survival rate of an out of hospital cardiac arrest event.

Medic Ambulance Service worked with administrators, leaders, and politicians within our service area to have AEDs, donated by Medic, placed in strategic areas within the county and to provide free lay rescuer CPR with in the community.

Medic Ambulance Service participates in CARES (Cardiac Arrest Registry to Enhance Survival) data reporting and has been collecting this data for internal quality improvements since prior to County or local hospital participation in the data bank. Prior to Medic's vigilance to improve cardiac event survivability, bystander CPR rates were only initiated 8.3% of the time they were needed and public AED use were nearly nil at 3.5% of the time.

Results: Medic's goals of this project have grown in success year-over year. The 2018 year has exemplified the projects popularity with 19 AEDs having been donated and parsed out to where they are needed most and 15 more are planned in the coming months. Medic has a full time Education and Training Manager who is actively involved with teaching health professionals and the community members at large how to recognize and appropriately intervene to emergency events, particularly respiratory and cardiac distress or arrest events prior to EMS arrival. Medic teaches hundreds of community members how to effectively perform CPR, each year.

All of the 45 AEDs we have donated to the community have been well maintained and receive monthly inspections. The peace of mind and access to these life saving devices continue to strengthen the propensity for neighbors to help their fellow neighbors in their greatest time of need.

Medic sponsors media advertisements that teach the signs and symptoms a person is likely to experience when having a heart attack, the need to activate 9-1-1 immediately when those symptoms, the importance of initiating CPR when needed, and how the community can obtain free CPR training through Medic Ambulance Service.

Through Medic's media campaigns, community presence at events, free CPR courses, and AED donations the rates of bystander CPR initiation as well as the use of AEDs went up an astounding sum. Bystander CPR is now initiated in 19.4% of cardiac instances which is more than double the historic rate of 8.3%. Public AED use jumped up nearly six fold to 20.0% of indicated times of need compared to the historic rate of 3.5%.

Impact: Within Medic's service area our community now experiences Return of Spontaneous Circulation or ROSC of over 24% which is over four times the average national rate for outside of a hospital setting, which is fewer than 6%. The rate of survival to the hospital in Medic's service area for a cardiac arrest out of the hospital is actually equal to the 24% survival rate of patient's that experience a cardiac arrest in a hospital setting. It stands to reason that the time to react and the means of intervention in the hospital setting will on average always be advantageous over the conditions and logistics of out of the hospital care.

Medic employs numerous American Heart Association (AHA) CPR instructors to ensure great access to ongoing renewal and refresher training for all employees, firefighters, local healthcare workers, and the community at large. Several times, every year Medic sends its instructors from our in-house training and education center to community events to teach CPR, recognition of an emergency and how to respond, and act as ambassadors for careers in EMS.

The AEDs that we donate to our community have all gone to facilities that would not have otherwise been able budget for these life-saving devices. Although a cardiac arrest can happen anywhere and at any time it is most likely that a device will make the difference in a life when the factors of the number of people proximal to the device housing location, the risk factors of an individual suffering from a cardiac arrest in the area, and any remoteness or accessibility issues that may create EMS arrival delays. In all cases multifaceted deliberation has dictated the placement of all donated AEDs and will be the decider in future-planned devices as well.

Medic Ambulance Service's commitment to our community's health extends far beyond 99+% response time compliance and employing highly skilled and dedicated personnel, we have been educating our community how to recognize an emergency, active help of EMS, and intervene appropriately to help save a life through CPR and access and training on AED use. Bystander initiated CPR and AED use has grown in multiples and our community is counting those benefits in lives being saved.

"In addition to the AEDs, our district employees will have the opportunity to receive free cardiopulmonary resuscitation training and training in the use of the devices, provided by Medic," - Jennifer Taylor, Fairfield-Suisun School District Assistant of Human Resources and Risk Management. "It's a lifesaver..." Michael Muir, Rush Ranch's Head of Access Adventure Program.

Budget: \$125,000 over ten years.

Supporting Documentation Upload:

<https://www.ems1.com/cardiac-arrest/articles/2255015-Report-U-S-out-of-hospital-cardiac-arrest-survival-rates-unacceptably-low/>

<https://www.dailyrepublic.com/all-dr-news/solano-news/suisun-city/medic-ambulance-donates-external-defibrillator-to-rush-ranch/>

<https://www.dailyrepublic.com/all-dr-news/solano-news/fairfield/medic-fairfield-suisun-district-partner-to-install-aeds-at-school-sites/>

<https://nextdoor.com/agency-post/ca/rio-vista/rio-vista-fire-department/medic-ambulance-donates-12-automatic-external-defibrillators-aeds-to-the-city-of-rio-vista-26305212/>