



Submission for Criminal Justice & Public Safety

## Improving Cardiac Arrest Survival Rates in a Rural County



Submitted by  
Mathews County, Virginia  
2017

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# Increasing Cardiac Arrest Survival Rates in a Rural County

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## APPLICATION FORM

All applications must include the following information. Separate applications must be submitted for each eligible program. Deadline: June 2, 2017.

### *Program Information:*

**Locality:** Mathews County  
**Program Title:** Increasing Cardiac Arrest Survival Rates in a Rural County  
**Program Category:** Criminal Justice and Public Safety

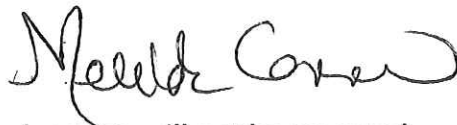
### *Contact Information*

**Name:** Jack White  
**Title:** Chairman, Board of Supervisors  
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### *Signature of county administrator or chief administrative officer*

**Name:** Mindy Conner  
**Title:** County Administrator

**Signature\*:**



\*Entries without this signature will not be accepted.



May 22, 2017

Dear VACo Achievement Awards Judges:

I am pleased to have this opportunity to submit Operation AED for your review and consideration, and proud to live and work in a community that is so responsive and effective in safeguarding our citizens' wellbeing.

Mathews now has Automated External Defibrillators (AEDs) deployed throughout the County thanks to the combined efforts of the hardworking Mathews Volunteer Rescue Squad members, Board of Supervisors members, County staff, and other volunteers. These AEDs are accessible from the outside of the buildings on which they have been placed, making them available around the clock every day of the year. And of equal importance, nearly 1000 people have been trained in their proper use. There is no doubt that Operation AED will result in saved lives. What better outcome for a community project could there be?

I hope that you will evaluate this submission favorably; not only to recognize Mathews' achievement, but more importantly, to publicize this program to other jurisdictions. It would be extremely gratifying to have other communities replicate the Operation AED model.

Sincerely,

A handwritten signature in black ink that reads "Melinda Conner".

Melinda Conner  
County Administrator

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# Increasing Cardiac Arrest Survival Rates in a Rural County

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## SUMMARY

The Mathews Volunteer Rescue Squad (MVRS) serves an older, widely dispersed population through a centrally-located Rescue Squad Station. Increasingly, the Squad had become concerned about time required to drive between its Station and far-distant victims who were experiencing symptoms of Sudden Cardiac Arrest (SCA).

Sudden cardiac arrest is life-threatening. Rapid response is critical with survival rates decreasing with passing minutes. Despite its quick response to 911 calls, MVRS knew reaching parts of Mathews in time to potentially save a life would be difficult.

Automatic External Defibrillators (AEDs) can be life-saving. Working with County Officials, MVRS identified AEDs located in various buildings in the County. It was discovered, however, the AEDs would often be inaccessible in actual emergencies, particularly when the buildings were closed.

Working together, MVRS and the County created Operation AED to acquire and place AEDs in strategic locations so AEDs would be accessible 24 hours a day, seven days a week, 365 days of the year.

County and MVRS budgets were already strained so private funding would be required. MVRS designed and managed a public relations campaign to raise awareness of the life-saving role of an AED; created the Chili Cook-Off; and developed free training classes, combining CPR and AED techniques, for the general public and for students in Mathews Middle School and High School.

Operation AED is a success. MVRS has purchased 16 AEDs, now accessible throughout Mathews. The community has become informed about SCA and the importance of rapid response. Nearly 1,000 people have been trained in the proper use of an AED and in performing effective CPR. MVRS is proud to share detailed information with Counties experiencing similar challenges with the hope more lives will be saved.

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## CHALLENGE

Rural Mathews County consists of a peninsula and an island on the Chesapeake Bay. The Mathews County Volunteer Rescue Squad (MVRS) serves an 86-square-mile area with few main roads and miles of one-lane, unpaved access to widely-dispersed dwellings. There is one centrally-located Rescue Squad Station. The County population is aging. Nearly 30 percent (29.4 %) of the population was 65 and older in 2015.\*

Sudden Cardiac Arrest (SCA) causes 350,000 deaths per year or approximately one death every 1.7 minutes.\*\* Rapid cardiopulmonary resuscitation (CPR), along with use of an Automated External Defibrillator (AED), increases the patient's chance for survival 70%. *Rapid initiation*, defined as occurring within five-to-six minutes, is critical. Survival rates decrease 7-10% each minute that blood and oxygen flow is diminished.\*\*\*

MVRS has reduced response time between a 911 call for assistance and the Squad's arrival on scene to an average 11-minutes. *Average response time* does not mean, however, that MVRS is able to reach all remotely-located patients within 11 minutes. This reality was causing increasing concern.

Recently quick actions by individuals, using a combination of CPR and AED, saved lives before MVRS could arrive. These accomplishments prompted MVRS to approach County Officials about collaborating on a plan to analyze the availability of AEDs already placed in the County, provide training on their use, and raise citizen awareness of the importance of rapid response during an SCA incident.

Thus, Operation AED was born.

\*Source: US Census Bureau, July 1, 2015 \*\*Source: American Heart Association (AHA). \*\*\* Sources: Occupational Health and Safety Administration (OSHA) Publications 3185, 3317.

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## SOLUTION

Together, MVRS and the County laid a foundation for building a County-wide AED Plan. Working with the Planning Office, MVRS members began canvassing buildings within Mathews County. This extensive search included churches, businesses, government buildings, and private enterprises. At the conclusion of the canvassing, 52 AEDs had been located in buildings all over the County. A map, produced by Ms. Elizabeth Whitely of the County Planning Department, identified the locations. Unfortunately the survey also found NO AEDs were available to the public when the buildings were closed.

Options were discussed. A preferred option was to install AEDs outside designated buildings. If that option was selected, more money would be required to purchase outdoor, waterproof containers for AED storage in addition to the AEDs themselves. County and MVRS budgets were stretched. An MVRS leader stepped forward with an offer to create a dedicated fundraiser combined with a public relations campaign, and to manage both efforts in support of the newly named Operation AED.

A new fundraiser, the Super Bowl Chili Cook-Off, was designed to engage the community. Six civic organizations agreed to compete for bragging rights and trophies for *Best Chili in the County*. Funds raised would purchase AEDs and their containers as well as AED pads and replacement batteries. A drawing for a new, donated AED would be held at the event. Those selling at least 10 tickets would be eligible to compete.

Training citizens to use AEDs properly and perform effective CPR was an important component of Operation AED. As soon as externally-mounted AEDs became available, MVRS began to advertise free, open to the public, CPR/AED training. The objective was to train a critical mass of ordinary citizens who could assist a victim experiencing sudden cardiac arrest until professional assistance arrived.

## RESULTS

Operation AED is a success on multiple levels.

- Sixteen new AEDS are now mounted in waterproof containers on strategically-located buildings, such as the Hallieford Post Office.
- The Chili Cook-Off has become an annual event with growing community support.
- Winners of the Cook-Off drawing have been donating their prizes back to MVRS for placement in additional locations.
- The Planning Office ensures AED location maps are current.
- An overlay map has been provided to the Sheriff's Office so 911 Dispatchers can direct callers to the closest AED, if an AED is requested.
- AED maps are widely distributed, including postings on MVRS and County websites, and inserted into the Mathews County Visitor and Information Center's popular *FYI*.
- The Mathews Volunteer Rescue Squad maintains a list of expiration dates for all OUTSIDE AEDs and inspects each AED on a quarterly basis.
- The Mathews Volunteer Fire Department has placed an AED on every firetruck.
- Eighteen public and 30+ Middle and High School AED/CPR training sessions have been conducted. Training continues to be on-going.
- Since late 2016 nearly 1,000 residents, including 419 students, have been trained.
- The Mathews community has a heightened awareness of the importance of quick action when a person loses consciousness and shows signs of sudden cardiac arrest.
- A growing number of individuals and organizations have been inspired to support efforts which benefit the greater Mathews community.



## Increasing Cardiac Arrest Survival Rates in a Rural County

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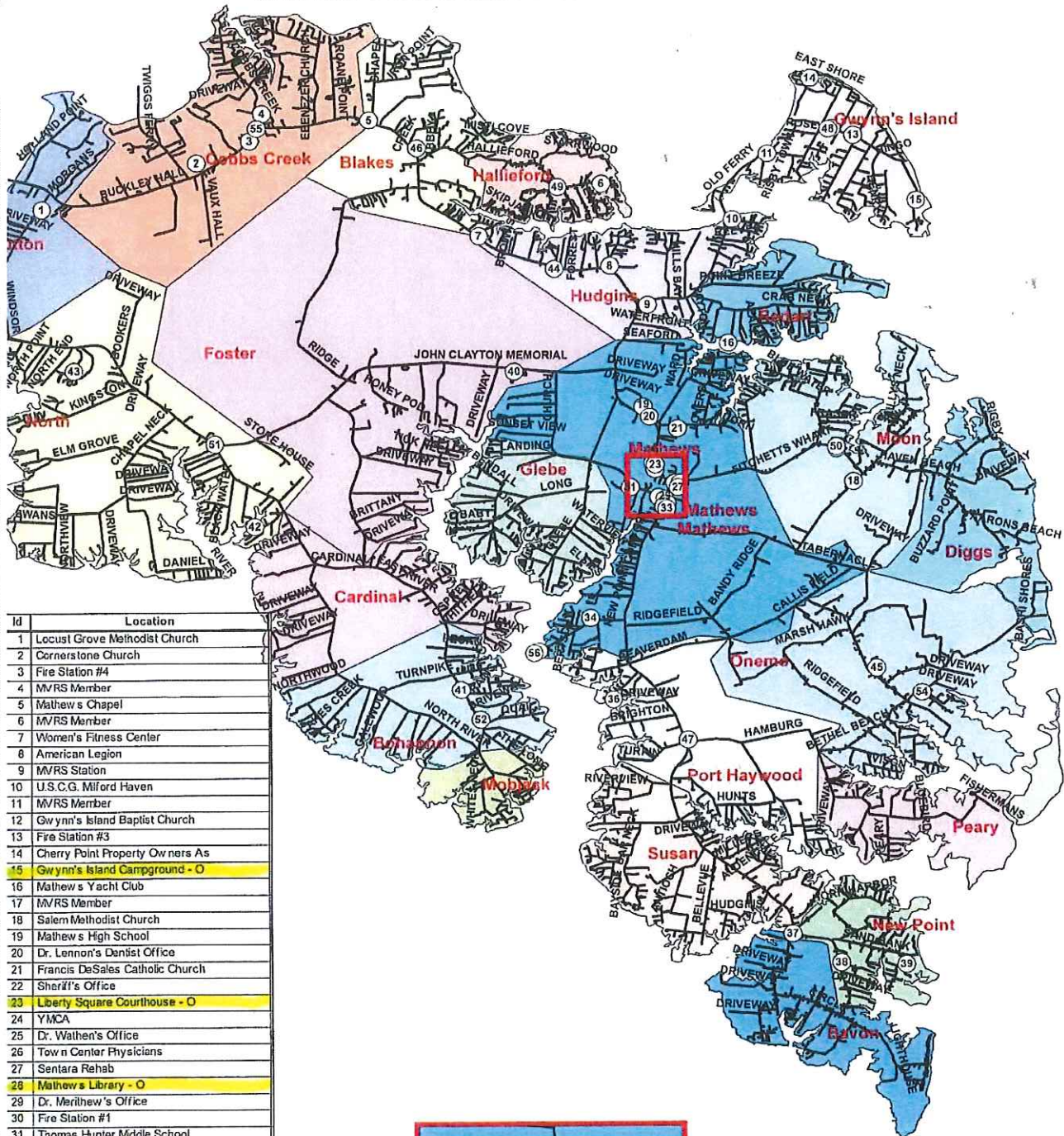
In summary, Mathews County and MVRS have taken an innovative and unique approach to solving a critical life-threatening challenge through Operation AED. The collaborative effort has united the Mathews County Board of Supervisors, Administrator, and Planning Office; Mathews' Schools, civic organizations, Sheriff's Office, and over a thousand citizens who have participated in training and fundraising.

MVRS knows of no other rural emergency management system in Virginia which has taken such a comprehensive approach. AEDs are now available 24/7/365 in every population center and citizens are trained to help others until formal assistance arrives.

The goal of Operation AED was clear: *"to increase the likelihood of CPR/AED saves by having trained citizens and an AED arrive within five minutes anywhere within rural Mathews County on a 24/7/365 basis!"*

Mathews County and MVRS believe lives will be saved because of their efforts. They also believe that the Operation AED model is not only sustainable but can be replicated throughout the Commonwealth. MVRS stands ready, willing and eager to assist any locality who wants to plan for, tailor, and implement this model.

MATHEWS COUNTY AED LOCATIONS - 05 12 2017



Id	Location
1	Locust Grove Methodist Church
2	Cornerstone Church
3	Fire Station #4
4	MVRS Member
5	Mathew s Chapel
6	MVRS Member
7	Women's Fitness Center
8	American Legion
9	MVRS Station
10	U.S.C.G. Milford Haven
11	MVRS Member
12	Gwynn's Island Baptist Church
13	Fire Station #3
14	Cherry Point Property Owners As
15	Gwynn's Island Campground - O
16	Mathew s Yacht Club
17	MVRS Member
18	Salem Methodist Church
19	Mathew s High School
20	Dr. Lennon's Dentist Office
21	Francis DeSales Catholic Church
22	Sheriff's Office
23	Liberty Square Courthouse - O
24	YMCA
25	Dr. Walhen's Office
26	Tow n Center Physicians
27	Sentara Rehab
28	Mathew s Library - O
29	Dr. Merithew's Office
30	Fire Station #1
31	Thomas Hunter Middle School
32	Kingston Parish House - O
33	Brambles Day Center - Never Ins
34	Kingston Episcopal Church - O
35	MVRS Member
36	MVRS Member
37	Fire Station #5 - O
38	Bau'ah Methodist Church
39	New Point Campground - O
40	Faith Baptist Church
41	Fire Station #2
42	MVRS Member
43	Brambles - Never Installed
44	Pankatank Furitan Club
45	Salem United Methodist Church
46	Mathew s Veterinary Office
47	Haskins Auto Repair - O
48	Gwynns Island Civic Leag - O
49	Hallieford Post Office - O
50	Mathew s Appliance - O
51	Enmaus Baptist Church - O
52	West Mathew s Comm Leag - O
53	Living Waters Church - O
54	Onemo Post Office - Proposed
55	Cobbs Creek P.O. - O
56	Williams Wharf
57	Bethel LMC - O

