



SUBMISSION FORM

All submission forms must include the following information. Separate submission forms must be turned in for each eligible program. **Deadline: Tuesday, April 7, 2026.** Please include this submission form as the first page of your electronic entry. Contact [Gage Harter](#) with any questions.

PROGRAM INFORMATION

County: James City County

Program Title: Advanced Care Paramedic (ACP)

Program Category: Criminal Justice & Public Safety, Health and Human Services

CONTACT INFORMATION

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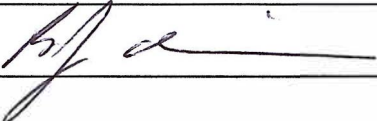
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SIGNATURE OF COUNTY ADMINISTRATOR OR DEPUTY/ASSISTANT COUNTY ADMINISTRATOR

Name: Bradley J. Rinehimer

Title: Assistant County Administrator

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Executive Summary

James City County Fire Department (JCCFD) developed the Advanced Care Paramedic (ACP) program to address a critical gap in emergency medical care. Located between major tertiary care centers, EMS providers often faced prolonged transports to higher-level care. This became especially evident after a fatal motor vehicle crash in 2021, leading to a goal of zero preventable deaths from hemorrhage.

The ACP program builds on the region's first prehospital whole blood transfusion initiative and expands paramedic capabilities to deliver advanced, hospital-level care in the field. Selected paramedics complete a six-month training program led by the EMS Medical Director.

ACPs are equipped with tools typically found in emergency departments, including whole blood, ultrasound, ventilators, IV medication pumps, and advanced procedures such as resuscitative thoracostomy and dual-sequential defibrillation.

Since implementation, outcomes have improved. Advanced airway success increased from 65 percent to 95 percent, cardiac arrest survival improved, and helicopter use decreased by approximately 80 percent. A strong quality assurance process supports ongoing performance.

The program is cost-effective and sustainable. Equipment purchases were supported through CARES Act funding, medical direction is provided through an existing VCU Health contract, and training is included in the existing budget with no additional staffing.

The program now includes regional participation with personnel from Newport News and Williamsburg Fire Departments training with JCCFD staff. JCCFD's ACP program improves survival and provides a replicable model for EMS agencies across Virginia.

James City County Fire Department - 2026 VA Co Achievement Award Submission

Category: Criminal Justice & Public Safety, Health and Human Services

Advanced Care Paramedics: Critical Care Medicine on the Front Line of EMS

Overview

James City County is a vibrant and growing locality in southeastern Virginia, situated on the lower peninsula between the York and James Rivers. Home to a blend of suburban neighborhoods, rural farmland, and historic communities and landmarks, the county includes parts of the Greater Williamsburg area and serves a population of over 80,000 residents and up to eight million visitors annually. With areas of high population density as well as isolated rural regions, delivering consistent, high-quality emergency medical care poses unique logistical and clinical challenges.

The James City County Fire Department (JCCFD) is an all-hazards agency providing fire protection, technical rescue, and emergency medical services (EMS). The department is a regional leader in progressive EMS care, operating under a culture of safety and accountability that emphasizes evidence-based practice, continuous quality improvement, and clinical excellence. JCCFD's EMS division includes paramedics, emergency medical technicians, and officers dedicated to delivering advanced prehospital care to the county's residents and visitors.

James City County lies between two major tertiary care hospitals, Riverside Regional Medical Center in Newport News and Virginia Commonwealth University Medical Center in Richmond. Although two smaller hospitals are available, Sentara Williamsburg Regional Medical Center and Riverside Doctor's Hospital Williamsburg. EMS providers often faced a critical dilemma between transporting patients to nearby facilities with limited capability or undertaking extended

transports to higher-level care. This gap was especially significant for time-sensitive conditions such as trauma, stroke, and hemorrhagic shock.

In 2021, a tragic motor vehicle accident highlighted this challenge when a young patient died from internal bleeding during a prolonged extrication. This event led the department to establish a clear objective to achieve zero preventable deaths from hemorrhage. The initial response was implementation of the region's first prehospital whole blood transfusion program, which evolved into the comprehensive Advanced Care Paramedic program.

Program Design

The Advanced Care Paramedic program represents a transformative model of prehospital care tailored to meet the demands of a modern EMS system. Advanced Care Paramedics are selected from the department's most experienced clinicians and trained to deliver care beyond the traditional paramedic scope.

The program includes six months of classroom and field-based instruction supported by mentorship, simulation, and rigorous evaluation. Training is led by the EMS Medical Director, a physician board certified in Emergency Medicine and EMS, in collaboration with the department's EMS and training divisions, physician residents and fellows, and regional partners.

Core Curriculum Topics

- Advanced Medical Resuscitation with a focus on sepsis, cardiogenic shock, and metabolic emergencies using physiology driven care
- Advanced Trauma Resuscitation including hemorrhage control, trauma induced coagulopathy, neurologic trauma, and transport decision making

- Ultrasound Guided Resuscitation with real time assessment of cardiac function, lung pathology, and perfusion
- Advanced Airway Management and Mechanical Ventilation including RSI and DSI, pharmacology, invasive and non-invasive airway management, and ventilator use
- Advanced Pediatric Resuscitation focused on high acuity pediatric emergencies requiring advanced clinical judgment
- Legal, Ethical, and Leadership Considerations including consent, documentation, and Crew Resource Management in complex incidents

Advanced Tools, Training, and Equipment:

- Whole Blood Transfusion. Two units of type O positive low titer whole blood are stored on EMS supervisor units with continuous temperature monitoring for immediate use in cases of hemorrhagic shock due to trauma, childbirth, or medical conditions. JCCFD is one of fewer than a dozen EMS agencies in Virginia and the first in the Peninsulas region to provide this capability.
- Point of Care Ultrasound. ACPs utilize handheld ultrasound devices to guide real time diagnostic and therapeutic decisions, offering direct insight into cardiac function, lung pathology such as pneumothorax and pulmonary edema, and perfusion. This allows patient specific resuscitation beyond protocol driven care.
- Mechanical Ventilation Systems. Portable ventilators enable precise oxygenation and ventilation management, improving patient safety and clinical outcomes during prolonged transports and critical care scenarios.

- Resuscitative Instrument Thoracostomy. JCCFD is one of only a handful of EMS agencies in Virginia authorized to perform this advanced surgical intervention in the field, allowing immediate treatment of life-threatening chest injuries such as tension pneumothorax.
- Rapid and Delayed Sequence Induction of Anesthesia. ACPs are trained in advanced pharmacologic airway management, including the use of paralytics and sedatives to perform controlled, high risk airway procedures safely in the prehospital environment.
- Hospital Grade IV Medication Pumps. Infusion pumps, which are standard in hospital intensive care units but rarely used in EMS, are deployed on all ambulances. This enables precise administration of vasoactive medications, sedatives, and analgesics during extended patient care. JCCFD is the first agency in the region to implement this capability system wide.
- Dual Sequential Defibrillation. JCCFD is the only agency in the region utilizing this advanced technique for cardiac arrest patients with refractory arrhythmias, improving the likelihood of successful resuscitation in otherwise nonresponsive cases.
- Evidence Based Clinical Protocols. All ACP interventions are guided by robust, data driven protocols developed and continuously reviewed by the EMS Medical Director. Protocols are regularly updated to reflect emerging evidence and are designed to be practical, safe, and effective in real world field conditions.

This integrated approach brings intensive care level capability directly to the patient and represents a significant advancement in prehospital medicine.

Implementation and Cost

Initial development began in 2019 with enhanced airway and resuscitation training, followed by deployment of ventilators and ultrasound in 2020. In 2022, JCCFD became the first agency in the Peninsulas EMS Council region to administer prehospital whole blood. Additional capabilities were introduced in 2023, including resuscitative thoracostomy and dual sequential defibrillation. In 2024, the inaugural ACP class graduated 11 paramedics.

The program has continued to expand and evolve. The most recent ACP class included participants from Newport News Fire Department and Williamsburg Fire Department, demonstrating the program's growing regional impact and its ability to serve as a scalable model for advanced prehospital care across jurisdictions.

Cost and Funding

- **Startup Costs.** Moderate investment in training, ultrasound devices, ventilators, infusion pumps, and medical oversight, phased across multiple fiscal years. Initial capital purchases including ventilators, IV infusion pumps, and ultrasound devices were funded through federal CARES Act allocations following the COVID 19 pandemic.
- **Ongoing Costs.** Primarily limited to training, equipment maintenance, and quality assurance. Medical direction expenses are covered under the department's existing contract with VCU Health, minimizing additional financial impact.
- **Funding Sources.** Local general fund support supplemented by federal funding through the CARES Act and regional partnerships.

- Staffing Model. ACPs are developed from existing personnel with no additional full-time staffing required.
- Sustainability. The program is sustained through quarterly training and continuing education that are incorporated into the department's existing training budget, allowing ongoing program delivery without the need for new or recurring funding streams.

The program has also generated system wide efficiencies, including an estimated 80 percent reduction in helicopter transports, resulting in significant cost avoidance while improving patient outcomes.

Impact

The ACP program is supported by a robust quality assurance system with continuous clinical oversight. High risk cases are reviewed weekly, and advanced procedures are individually evaluated by the medical director. Data is submitted to national registries, earning recognition such as the American Heart Association Mission Lifeline Gold Award.

Program outcomes have remained consistent or improved through 2025 and early 2026, reinforcing sustainability and long-term impact.

Performance Metrics – 2024 - Present

- Cardiac Arrest Life Saver Awards - 64
- Whole Blood Transfusions – 85 patients / 104 units administered
- Prehospital Ultrasounds - 250 plus
- Instrument Thoracostomies – 7 patients

- Endotracheal Intubations - 96
- Advanced Airway First Pass Success improved from 65 percent to 95 percent
- Cardiac Arrest ROSC improved from 75 percent to 90 percent
- Helicopter Utilization reduced by 80 percent
- Cumulative Training Hours exceed 2500

These outcomes demonstrate measurable improvements in survival, clinical performance, and system efficiency while expanding access to advanced care in both rural and urban environments.

Awards and Recognition

- 2023 Governor's EMS Award for Outstanding EMS Agency, JCCFD
- 2023 Peninsulas EMS Council Award for Innovation in EMS, Whole Blood Program
- 2024 Peninsulas EMS Council Award for Innovation in EMS, Advanced Care Paramedic Program
- 2024 Peninsulas EMS Council Call of the Year, Bicyclist Saved by Dual Sequential Defibrillation
- 2024 American Heart Association Mission Lifeline Gold Award

These recognitions highlight sustained innovation and measurable impact across multiple years.

The inclusion of regional partners in ACP training further demonstrates the program's transferability and reinforces a shared commitment to elevating EMS care across the region.

Conclusion

The Advanced Care Paramedic program demonstrates how local innovation can significantly improve outcomes for critically ill and injured patients. By combining advanced training, advanced equipment, and strong medical oversight, JCCFD has created a scalable and sustainable model for prehospital critical care.

This program not only improves survival within James City County but also serves as a replicable framework for jurisdictions across Virginia seeking to enhance EMS capabilities. With continued collaboration and commitment, this model has the potential to transform emergency medical care across the Commonwealth.