



SUBMISSION FORM

All submission forms must include the following information. Separate submission forms must be turned in for each eligible program. **Deadline: July 1, 2021.** Please include this submission form with the electronic entry. If you do not receive an email confirming receipt of your entry within 3 days of submission, please contact [Gage Harter](#).

PROGRAM INFORMATION

County: Botetourt County

Program Title: "Boost Botetourt": Achieving Equitable COVID-19 Vaccine Distribution Using Community Paramedicine

Program Category: Health & Human Services

CONTACT INFORMATION

Name: Tiffany Bradbury

Title: Director of Communications

Department: Communications/Administration

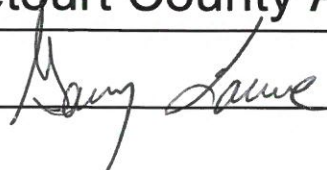
Telephone: 540-928-2004 Website: www.botetourtva.gov

Email: tbradbury@botetourtva.gov

SIGNATURE OF COUNTY ADMINISTRATOR OR DEPUTY/ASSISTANT COUNTY ADMINISTRATOR

Name: Gary Larrowe

Title: Botetourt County Administrator

Signature: 

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**Virginia Association of Counties Achievement Awards Application 2021
Botetourt County – “Achieving Equitable COVID19 Vaccine Distribution Using Community
Paramedicine – Boost Botetourt”**

Executive Summary:

Botetourt County is a rural county located in southwestern Virginia. The county is 548 square miles and is home to approximately 33,500 residents. Some parts of our population are greater than 30 minutes from a community hospital. The populations are also aging, with 59% of residents being over 40 years old.

Amid the COVID-19 pandemic, local communities have had to pivot and supplement state and local health departments to improve COVID-19 mitigation efforts. After the initial December 2020 vaccine rollout, communities across the country faced challenges concerning equitable distribution of vaccines. Homebound populations, especially those with mobility and transportation challenges, have had difficulty accessing vaccines. Homebound populations also tend to lack reliable internet access, or they experience technology challenges that make communicating vaccine information more difficult. Minority communities and those with language barriers also struggle with accessing vaccine information or are hesitant to receive them.

To ensure equitable vaccine access, Botetourt Fire & EMS leveraged community paramedicine (CP) and launched “Boost Botetourt”. The goal of this project was to use the mobility and flexibility afforded to EMS providers to vaccinate rural citizens and address existing gaps in vaccine distribution.

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Background and Program:



BOOST BOTETOURT

To address disparities in the equitable distribution of the COVID-19 vaccine, Botetourt County Fire & EMS achieved vaccination distribution status with the Virginia Department of Health and Centers for Disease Control. Since mid-2020, department leadership worked to ensure that Botetourt County residents could gain access to the COVID-19 vaccine. Most of this coordination took place with the Roanoke-Alleghany Health District, as they serve as the area's main point for widespread distribution for the vaccine. Through the combined efforts of a part-time paramedic, Kyle Sperber, who is currently a graduate student at Georgetown University studying biodefense and infectious diseases, Emergency Manager Daniel Murray, the department's medical director Dr. Carol Bernier, and department leadership, the administrative process to become an approved vaccination distribution point was completed. On Tuesday, April 13, 2021, the Department received its first allotment of 20 doses of the Moderna vaccine and the "Boost Botetourt" vaccination campaign was launched. "We made a concentrated effort to push for becoming a vaccination site and get to the people that can't get to the vaccine through other means. Our citizens deserve every opportunity to access the vaccine, if they want to receive it, and this is just one more way that we can get vaccines in arms," said Botetourt Fire & EMS Chief Jason Ferguson. A lot of work has been

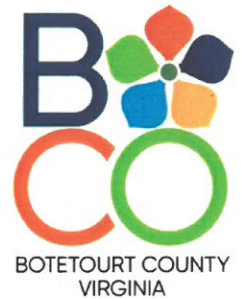


put into the efforts of completing all the administrative paperwork, ensuring proper vaccine storage requirements are met, and that personnel delivering the vaccine have received appropriate training on the vaccine being offered. "I am super excited to see our men and women of the Department take on this crucial role in delivering services to the community. This goes above and beyond traditional emergency medical care, this is preventative medicine and public health. During times like these, we need our 1st responders to be far more than emergency focused, and Botetourt has really stepped up to the plate," explained Dr. Carol Bernier, Operational Medical Director for Botetourt's Fire & EMS system. "This is an excellent opportunity for Botetourt County. I could not be prouder of the efforts of our Fire & EMS throughout this entire pandemic. This is just one more way that we are trying to ensure our communities are taken care of. Our crews definitely go above and beyond traditional emergency services delivery, this is just one more example of that," explained Board of Supervisors Chairman, Dr. Mac Scothorn. The CP model was utilized to distribute the COVID-19 vaccines to marginalized populations in Botetourt County. The project involved developing and implementing an EMS vaccination program, followed by the subsequent acquisition and distribution of vaccines using experienced EMS providers. The vaccinations were initially provided to Botetourt County's homebound population, followed by other targeted groups in the community. Botetourt County Fire & EMS was the only department in the Roanoke City and Alleghany Health District to set up a CP program to ensure that our most vulnerable had equitable access to the COVID-19 vaccine.

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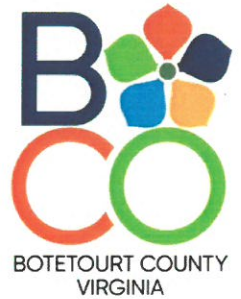


Persons and Organizations Involved:

The COVID19 Vaccine "Boost Botetourt" program would not have been possible without collaboration. Early on, the county realized that it truly would take a village to ensure equitable access to vaccine for our community. Botetourt County Fire & EMS staff teamed up with our local health district (Roanoke City and Alleghany Health District), our Operational Medical Director Carol Bernier, Dr. Erin Sorrell from Georgetown University, the Local Office on Aging, Botetourt Resource Center, AmeriCorps and BlockIt Scheduling to launch the CP program. Local media outlets also partnered up to help spread the word about the program. The project was also amplified with community partners and businesses. Vaccines are still being administered in the community using CP. Vaccination efforts have transitioned to workplace vaccine clinics as well as vaccinating students in schools through a collaboration with the Virginia Department of Health and Botetourt County Public Schools.

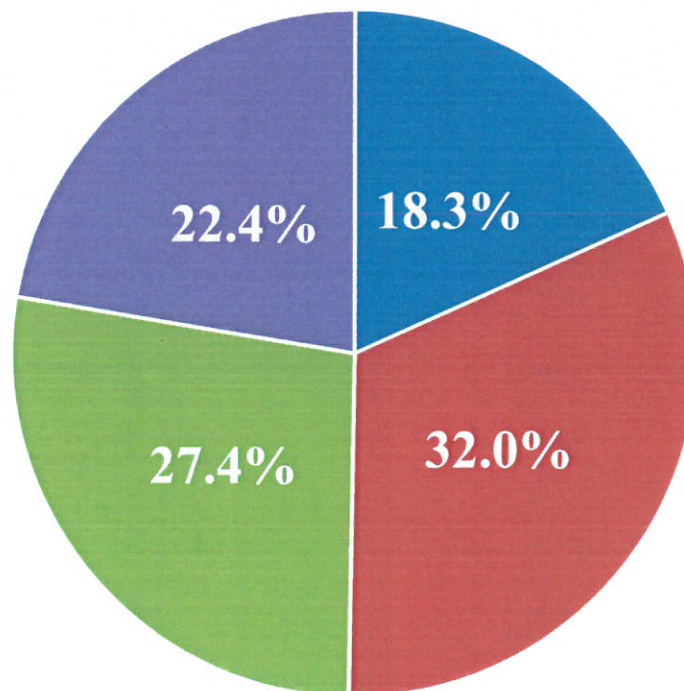
Expected Outcomes and Results:

The Community Paramedicine Vaccination Program was successfully developed, implemented and executed as intended. The community vaccination campaign was branded "Boost Botetourt". Among those vaccinated using the CP model, 75% were county residents and 25% lived in neighboring counties. As expected, ages for the homebound recipients were skewed higher, with a mean age of 66.3 and a median age of 72. Most homebound recipients were elderly and disabled, with 55% being over 65 years old and 46% over 75 years old. The goals of this project were achieved by using CP to broaden access to the COVID-19 vaccines. Recipients who were

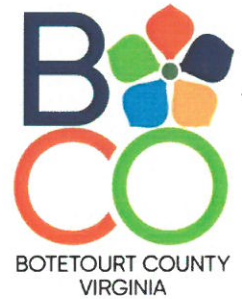


otherwise unable to get a vaccine were provided vaccines in the convenience of their home or business. As of June 25, 2021, Botetourt County Fire & EMS has administered just over 800 COVID-19 vaccines (includes first and second doses) with a total of 500 residents receiving vaccinations through the Boost Botetourt Community Paramedicine Program. 18.3% of vaccines were delivered in homes (earliest phase), 32% were in PODs in partnership with the Virginia Department of Health (second phase), and the remaining 49.8% was at workplaces, businesses, and schools in the county (third phase).

Vaccination Location



■ Home ■ POD ■ Work/Business ■ Schools



Beneficiaries of the Program:

Botetourt County had numerous success stories thanks to the "Boost Botetourt" COVID-19 Vaccine Community Paramedicine Program. One favorite story is of Mr. and Mrs. Bird, who are 90 and 88 years old, respectively. They are homebound residents in the Blue Ridge area and were the first Botetourt County residents vaccinated through the program. (See attached links to news articles)

Articles : (1) https://fincastleherald.com/botetourt-fire-ems-now-administering-covid-19-vaccinations/?fbclid=IwAR1sexKJHZmYOXezW4Z5dx9V-Kr7xwwPpryq_YbUfzjC70kDTc2zN-CUWY8

(2) <https://www.wfxrtv.com/news/health/coronavirus/botetourt-county-department-of-fire-ems-delivering-vaccine-to-residents/>

Beyond the homebound COVID19 vaccine success stories, another shining moment of the "Boost Botetourt" program was the ability to provide COVID-19 vaccines to our Spanish speaking residents who were disproportionately affected by COVID-19. The CP program worked with local Hispanic owned businesses in the county and took the vaccine to their place of business to vaccinate nearly all the staff. Paramedics found that most individuals had reservations and hesitations about taking the COVID-19 vaccine and were not planning to be vaccinated. However, they were encouraged by trusted Fire & EMS Paramedics that took the time to bring the vaccine to them in a safe and familiar



environment. Vaccine information was also shared in Spanish and translators accompanied CP teams. CP staff worked within the Hispanic Community of Botetourt County to find trusted influencers that in turn gave other Spanish speaking residents comfort and trust in also receiving the vaccine.

Other noteworthy success stories were being able to visit residents in the northern part of the county in the more rural Eagle Rock and Buchanan areas. In these rural areas, there was not a fixed vaccine location within 30 minutes of their home. These residents were excited that they would have access to the vaccine within 5-10 minutes of their home instead of having to drive 1-2 hours round trip to receive a vaccination.

There are also success stories of the factory workers or restaurant workers that wanted to receive the COVID-19 vaccine but were faced with challenges due to their work schedules. Some of their schedules are abnormal and conflict with times that pharmacies and other places offering them were open, or they simply work many hours of overtime to manage the reopening. The "Boost Botetourt" Community Paramedicine program allowed vaccine access to these individuals and truly showed equity in action regarding vaccinations.



Replication:

In order to develop a Community Paramedicine program focused around administering vaccinations, support of administrative leadership is paramount. Innovation and service are a must as well. Chief Jason Ferguson, Botetourt County Administration and the Botetourt County Board of Supervisors were innovative and supported this program to ensure equitable access to the COVID-19 vaccine. They knew that getting the vaccine to the doorsteps of our residents was a must in order to save lives during the pandemic. The next step is to ensure that the Operational Medical Director in your jurisdiction supports the program and is open to the different ways that EMS can help alleviate the needs of the community. Then you must develop a team that will execute the vision and spearhead the project. This team must be multi-faceted and have abilities to navigate through administrative coordination to produce policies and protocols for the Vaccination Program as well as training those who wish to participate. These people will also need to work closely with the local health department and other parties involved to ensure a usable program is produced. A crucial piece is to also establish a Board of Pharmacy-approved pharmacy location and securing a means of pharmacy refrigeration, which is a necessary step.

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Conclusion:

COVID19 was a game changer for our county, region, country and world. It made many of us realize what is most important and that is our friends, family and loved ones. Our county knew that the safety of our residents was the top priority, and we know that without the forward thinking of the Botetourt County Fire & EMS Department and the "Boost Botetourt" Vaccination Program, that many of our residents might not be with us today. The County knew that we had to do our part to help slow the spread and by taking COVID-19 vaccines to the homes of the most vulnerable or hesitant, we are certain that lives were saved. We are very proud of the "Boost Botetourt" Team, our partners and our citizens for making community paramedicine a priority during a very dark time in our history. Because of this program, we know that we are prepared to keep our citizens safer and healthier.

WE CAN FIGHT COVID-19 TOGETHER

**#BOOSTBOTETOURT
COVID-19 VACCINATION TEAM**



Achieving Equitable COVID-19 Vaccine Distribution using Community Paramedicine

Kyle T. Sperber, B.A., B.S., NRP

Botetourt County (VA) Department of Fire & EMS

Department of Microbiology and Immunology, Georgetown University Medical Center



GEORGETOWN UNIVERSITY

Abstract

A community paramedicine model was utilized to distribute COVID-19 vaccines to marginalized populations of a rural county in southwest Virginia. The project involved developing and implementing an EMS vaccination program, followed by the subsequent acquisition and distribution of vaccines using experienced EMS providers. The vaccinations were initially provided to the homebound population, followed by other targeted groups in the community. After a month of using this model, nearly 200 vaccines have been administered throughout the county, and the effort is still ongoing. Of those, the homebound population has been prioritized and sufficiently addressed, accounting for 26% of all vaccinations administered.

Introduction

Botetourt County is a rural county that is located in the Greater Roanoke Valley within the southwestern part of Virginia. The county is 548 square miles and is home to approximately 33,500 residents.¹ The population is predominantly rural, some parts of the population that live in the outlying areas of the county are greater than 30 minutes from any form of a community hospital. The population is also aging, with 59% of residents being over 40 years old.² The Botetourt County Department of Fire & EMS provides emergency response for the county using a combination of career and volunteer personnel. For emergency medical services specifically, there are four advanced life support (ALS) ambulances staffed 24/7 with additional units staffed as available.

Amid the COVID-19 pandemic caused by the novel coronavirus, SARS-CoV-2, local communities have had to pivot and supplement state and local health departments to improve COVID-19 mitigation efforts. After the initial December 2020 COVID-19 vaccine rollout, communities across the country have faced challenges concerning the equitable distribution of vaccines. Homebound populations, especially those with mobility and transportation challenges, have had difficulty accessing COVID-19 vaccines. There are approximately 1.6 million homebound people that are older than 65 in the United States. Homebound populations also tend to lack reliable internet access or they experience technology challenges that make communicating vaccine information more difficult.³ Aside from the homebound population, minority communities and those with language barriers also struggle with accessing vaccine information or are hesitant to receive them.

One way to approach the various vaccine distribution challenges is to leverage community paramedicine (CP) to address the dynamic community needs. CP is an emerging healthcare delivery model that uses prehospital providers to function in expanded capacities such as public health or primary care.⁴ The goal of this project is to use the mobility and flexibility afforded to EMS providers to vaccinate rural citizens and address existing gaps in vaccine distribution.

Methods

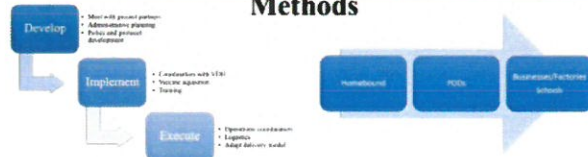


Figure 1. Overarching project plan for community paramedicine vaccination program. The plan requires three phases: develop, implement, and execute. Each phase consisted of specific and sequential tasks in order to obtain the approval from the Virginia Department of Health to begin community vaccinations.

Figure 2. Within the execution phase, there were three separate stages for vaccination delivery. The first priority was to target the homebound populations who had no other means of vaccination. The next stage was Point of Dispensing (POD) model which included holding small community drive-through clinics. The final stage is vaccinating via mobile clinics at area businesses, factories, and schools (ongoing).

Results

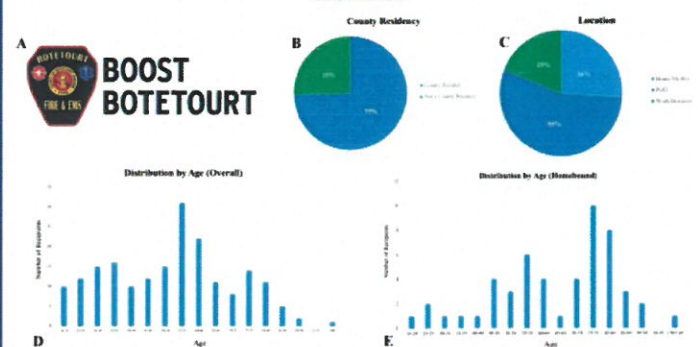


Figure 3. (A) The logo for the vaccination campaign, which was branded "Boost Botetourt". (B) Data for county residency of vaccine recipients. (C) Breakdown of locations where vaccination was provided, 55% using the POD model, 26% at homes or via mobile delivery, and 19% at area businesses. (D) Distribution of vaccinations by age for all vaccinations given. (E) Distribution of vaccinations for the targeted homebound population.

Discussion

- The community paramedicine vaccination program was successfully developed, implemented, and executed as intended (Figure 1). The community vaccination campaign was branded as "Boost Botetourt", with the logo pictured in Figure 3A.
- Among those vaccinated using the CP model, 75% were county residents, 25% lived in neighboring counties (Figure 3B). Vaccines that were delivered to the targeted in-home recipients accounted for 26% of the recipients, 55% were delivered using the POD model, and 19% were delivered in the workplace setting (Figure 3C).
- Ages of recipients varied with a mean age of 53.2 and a median age of 56 ($n=197$) (Figure 3D).
- As expected, ages for the homebound recipients were skewed higher, with a mean age of 66.3 and a median age of 72. The majority of homebound recipients are elderly and disabled, with 55% being over 65 years old, 46% of those being over 75 years old ($n=52$) (Figure 3E).
- The goals of this project were achieved by using CP to broaden access to the COVID-19 vaccines. Recipients who were otherwise unable to get a vaccine were provided vaccines in the convenience of their home.
- Vaccines are still being administered in the community using CP. Vaccination efforts have transitioned to workplace vaccine clinics as well as vaccinating students in schools through a collaboration with the Virginia Department of Health.

References

- U.S. Census Bureau. 2019. Botetourt County Statistics.
- Botetourt County Comprehensive Plan, Section II, 2016.
- "Characteristics of Homebound Older Adults: Potential Barriers to Accessing the COVID-19 Vaccine." April 8, 2021. Department of Health and Human Services - Assistant Secretary for Planning and Evaluation.
- "Rural Health Information Hub - Community Paramedicine Introduction."

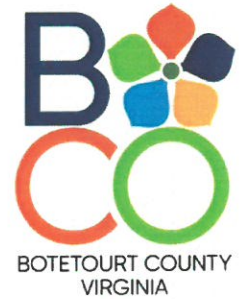
Acknowledgments

- Dr. Carol Bernier, Operational Medical Director
- Jason Ferguson, Chief
- Jeff Powell, Deputy Chief
- Daniel Murray, Emergency Manager
- LeAnn Jackson, Data Analyst
- Dr. Beth Leffel VDH
- Botetourt County Vaccination Team
- Dr. Joni Norrell, Georgetown University
- Taylor Lundford, Boost Botetourt Logo Design
- Local Office on Aging
- Botetourt Resource Center
- Dave Gregorio, Biostatistics
- AmeriCorps
- *This project is ongoing; the data presented is current as of 5/7/2021.

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