

# Evaluation and Impact Assessment of Virginia's REVIVE! for First Responder Training Program

2023 Update



December 2023

# Evaluation and Impact Assessment of Virginia's REVIVE! for First Responder Training Program: 2023 Update

Prepared for:  
Virginia Association of Chiefs of Police and Foundation (VACP)  
And  
Virginia Department of Behavioral Health & Developmental Services (DBHDS)

December 2023

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PlanRVA

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Cover photo:

Tieman, Bill. "REVIVE kits carried by all Virginia Beach police officers". The Virginian-Pilot, as appears on an article by Jane Harper on December 12, 2016.  
[https://www.pilotonline.com/news/crime/article\\_ff2ac9df-99c7-5d27-bb51-8c735f48f24f.html](https://www.pilotonline.com/news/crime/article_ff2ac9df-99c7-5d27-bb51-8c735f48f24f.html)

## Acknowledgment

We are grateful to the Virginia Association of Chiefs of Police and Foundation (VACP), and Virginia Department of Behavioral Health and Developmental Services (DBHDS) for the opportunity to evaluate the Revive! Program through its 2022-2023 reporting period. We would like to extend special appreciation to Dana Schrad, Executive Director, and Stephanie Diaz, Program Manager for support throughout the study period.

## About PlanRVA

PlanRVA is a regional convener, planning agency and provider of essential services to the localities of the Richmond Region. We are an organization comprising nine local governments for the purpose of encouraging collaboration to address regionally significant issues and opportunities. Also known as the Richmond Regional Planning District Commission (RRPDC), our organization encompasses the localities of Ashland, Charles City, Chesterfield, Goochland, Hanover, Henrico, New Kent, Powhatan and Richmond. PlanRVA convenes community representatives to build relationships and capacity across the region; provides technical assistance to member jurisdictions; serves as a liaison between local, state and federal governments; and implements services when requested by members.

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## Abbreviations

CAGR	Compound Annual Growth Rate
CSB	Community Service Board
DBHDS	Virginia Department of Behavioral Health and Developmental Services
DCJS	Department of Criminal Justice Services
DMAS	Department of Medical Assistance Services
DOC	Department of Corrections
DSS	Department of Social Services
EMS	Emergency Medical Service
FAACT	Framework for Addiction Analysis and Community Transformation
HIDTA	High Intensity Drug Trafficking Area
MOU	Memorandum of Understanding
OONE	Opioid Overdose and Naloxone Education
Q	Quarter (Calendar year)
VACAP	Virginia Community Action Partnership
VACP	Virginia Association of Chiefs of Police and Foundation
VDH	Virginia Department of Health
VOPRC	Virginia Overdose Prevention Resource Committee
VSP	Virginia State Police

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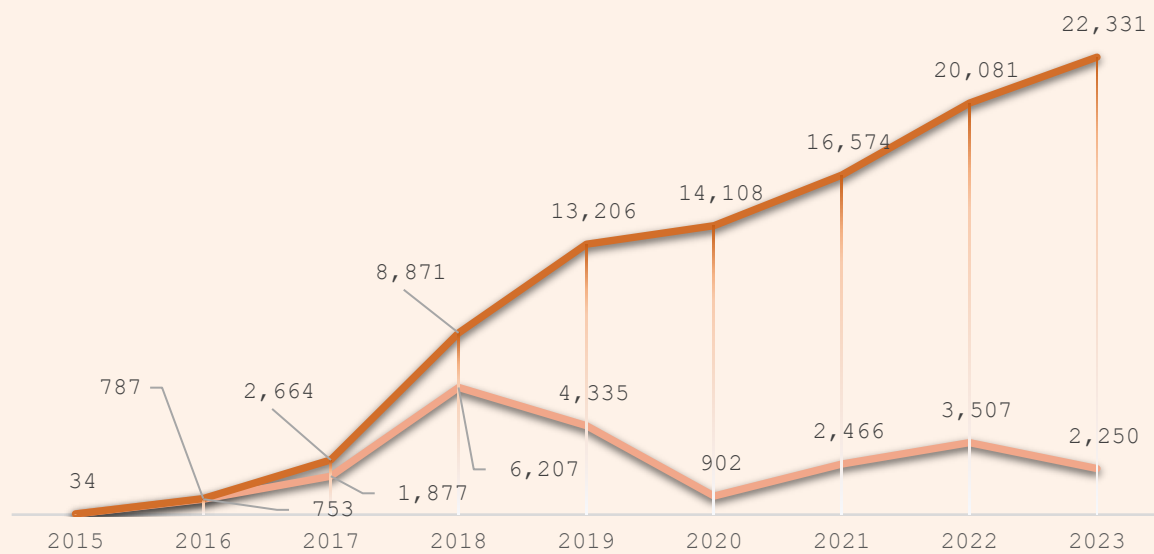
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## Executive Summary

Opioid Overdose and Naloxone Education for Virginia program (OONE), more commonly referred to as the REVIVE! for First Responders program was implemented in 2015. The Virginia Association of Chiefs of Police (VACP) manages a First Responder Naloxone grant for the Virginia Department of Behavioral Health and Developmental Services (DBHDS). The project goals are to increase access and distribution of Naloxone to all First Responders in the Commonwealth of Virginia, increase participation in the DBHDS REVIVE! for First Responders training, and to increase the number of REVIVE! Trainers and Master Trainers. To meet this goal, VACP provides training to First Responders in law enforcement agencies, non-EMS fire service agencies, and correctional facilities. Since 2020, the training has been expanded to also include those employed withing the following bodies in Virginia: military police, court services, regional and local jails, juvenile justice, probation and parole, state parks, and the department of forestry. The training covers introduction to various types of opioids, how opioid overdoses occur, how to identify symptoms, the risk factors involved with an opioid overdose, and how a person should respond to an opioid overdose with Naloxone. The training is provided for free, and the trainees are also eligible to receive free Naloxone and rugged Naloxone carrying cases. The REVIVE! for First Responders training program was run by DBHDS from 2015 to 2019. VACP has been managing the training program since March of 2020. This report was first prepared in September of 2021 to review the output and outcome of the REVIVE! for First Responders program activities. This 2023 update of the report covers July 2022 through June 2023.

Fig. 1.a

### Number of First Responders Trained 2015 - 2023



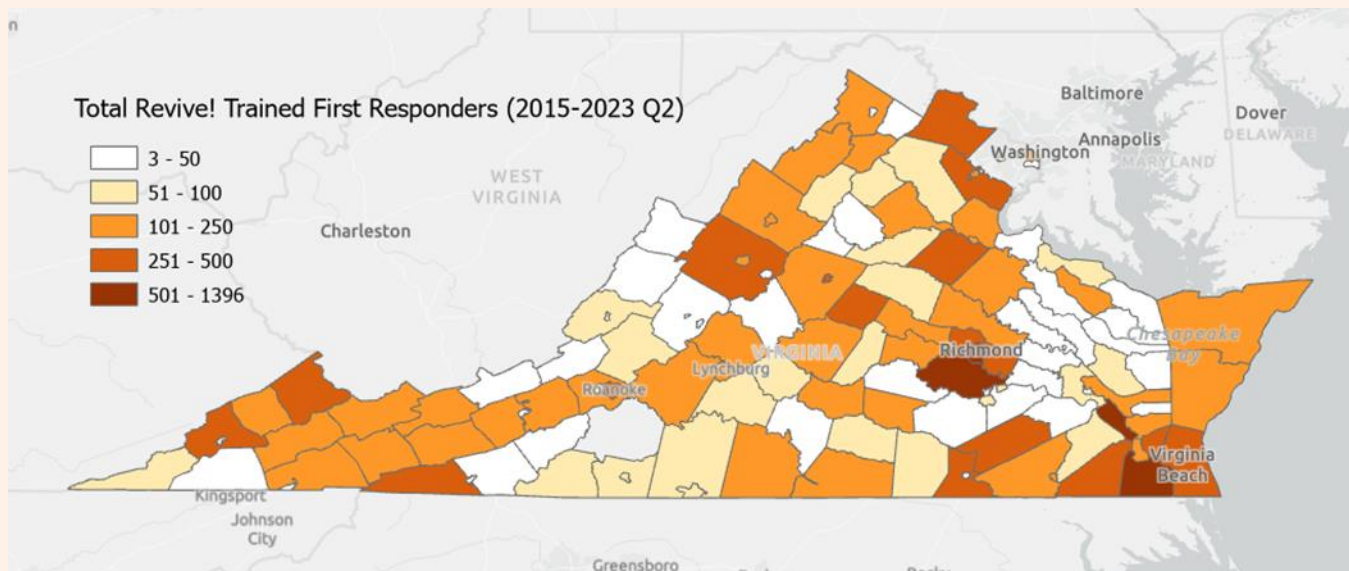
— Annual Number of First Responders Trained    — Cumulative Number of First Responders Trained

PlanRVA (Richmond Regional Planning District Commission) received a request from VACP to conduct an updated analysis building upon the comprehensive report that was prepared in November of 2022.

The objective of this study is to evaluate the training data since the last reporting period, compare outcomes with historical trends, and to understand the strengths and shortcomings of the program, and propose considerations for the future. We have used a combination of quantitative and qualitative methods to achieve that goal. The following is a list of important findings from the 2023 evaluation:

- 3,978 First Responders were trained under Virginia's REVIVE! program from July 2022 to June 2023. This is approximately the same number of trainees as the previous reporting period, showing continued positive progress since the low during the COVID-19 pandemic. Historical trends have been considered (Fig. 1.a), and the program has been increasing training since 2020.
- The overdose death rate has been consistently rising until 2022. However, 2022 represents a change in the historical trend. The observed rate of 24.9 deaths per 100,000 people for the year is lower than the predicted per capita rate.

Fig. 2.a





- Hampton Roads, Shenandoah Valley, Northern Virginia, and the Southside region saw the highest number of REVIVE! trained First Responders in 2022-23 (Fig. 2.a). These regions also reported among the highest overdose deaths per 1,000 people during the 2022-23 reporting period. The geographic distribution of REVIVE! training correlates better with locations reporting higher overdose deaths during the current period compared to the previous years. The location and number of training offerings seem strategically placed, however, there is still room for more strategic targeting.
- Most Virginia localities show high correlation between the number of First Responders trained and the rate of overdose death reported. This report also identifies localities that have disproportionate share – more trainees where overdose death rates are relatively lower, or less trainees where overdose deaths are relatively higher. Although, such imbalance has reduced during the current reporting period, we recommend that VACP continue to focus on providing training in those localities and make course corrections when necessary, based on the prevalence of overdose and overdose related deaths in the most recent years.
- An online survey of REVIVE! for First Responders Trainers was administered in November and October of 2023 to understand the program's effectiveness. The survey shows that 75 percent of First Responders participated in REVIVE! training voluntarily, and 25 took the training mandatory as part of a job requirement.
- About 95 percent of the participants were *very satisfied* or *satisfied* with their trainers and the level of expertise/experience they brought to the training. 93 percent of the participants were either *very satisfied* or *satisfied* with the training materials, and 93 were *very satisfied* or *satisfied* with the training. This study period saw higher percentages of trainee satisfaction across all categories.
- Participants felt more confident in administering Naloxone and were interested in training others in the future.
- Participants suggested that in-person training may be more effective, but virtual meetings are better for those that live far from training venues. Participants also expressed a desire to participate in refresher courses and stay up to date with best practices.
- Significant improvement in confidence and positive attitude towards Naloxone administration was noted by comparing participant responses taken before and after training sessions.
- The following are some highlights from the survey responses that summarize the importance and effectiveness of the program:

*“Opioid addiction is real and only those trained can help.”*

*“This is a valued training and service that is so desperately needed.”*

## Background

The Virginia Association of Chiefs of Police (VACP) oversees the First Responder Naloxone grant in collaboration with the Virginia Department of Behavioral Health and Developmental Services (DBHDS). The project's primary objectives are to enhance Naloxone accessibility among First Responders statewide, promote participation in the DBHDS REVIVE! for First Responders training, and augment the number of REVIVE! Trainers and Master Trainers. To meet the goals of this program, First Responder agencies in the Commonwealth of Virginia are eligible to receive Naloxone, rugged Naloxone carrying cases, and training at no cost to the agency. Since 2020, the eligibility for free Naloxone, supplies, and training expanded beyond Law Enforcement, Non-EMS Fire Service Agencies, and Correctional Facilities to encompass Military Police, Court Services, Regional and Local Jails, Juvenile Justice, Probation and Parole, State Parks, and Forestry located within the Commonwealth of Virginia.

### *Training*

REVIVE! is the Opioid Overdose and Naloxone Education (OONE) program designed for the Commonwealth of Virginia, offering comprehensive training to recognize and respond to opioid overdose emergencies. The program caters to diverse audiences with two distinct training tracks: Lay Persons training tailored for private citizens and First Responders training for members spanning Law enforcement, emergency medical services (EMS), Fire Departments, Local and Regional Jails, Probation and Parole, Forestry, Military, Juvenile Justice, Court Services, State Parks, and Correctional Facilities. Successful completion of the REVIVE! for First Responders training is a prerequisite for receiving free Naloxone supplies through the First Responders Naloxone Program.

There are two levels of training provided to First Responders, Basic Rescuer and Train-the-Trainer. The Basic Rescuer training focused on the following objectives:

- Enhance awareness of the opioid epidemic's impact on Virginia and the crucial role of First Responders in mitigating the crisis.
- Understand the relevant sections of the Virginia Code related to Naloxone dispensing, administration, and safe reporting of overdoses.
- Understand the harm reduction model and relevant Virginia Code sections related to harm reduction initiatives.
- Understand risk factors for opioid overdose, the overdose continuum, and how Naloxone works to reverse fatal effects of overdose.
- Develop the ability to recognize signs of opioid overdose and respond effectively to such emergencies.
- Learn about the "Leave Behind" program and how to conduct a Rapid Revive training.
- Become familiarized with actual risk factors associated with fentanyl exposure to First Responders and learn about safety practices.
- Understand the concept of responder fatigue and explore available resources for support.

The Train-the-Trainer curriculum extends beyond Basic Rescuer training, offering instructions on how to conduct effective training sessions and detailing reporting requirements for Certified First Responder Trainers. This advanced training equips First Responders with the skills to impart essential knowledge and ensure the program's sustained impact through ongoing training.

## *Naloxone*

Naloxone, a critical tool in combating opioid overdose, is supplied free of charge to eligible agencies as part of the comprehensive initiative. To receive this life-saving resource, staff from the participating agencies must complete the REVIVE! for First Responders training program, ensuring that the key personnel are equipped with the necessary skills and knowledge to effectively administer Naloxone in emergency situations.

Following the training, the agencies are required to formalize their commitment by signing a Memorandum of Understanding (MOU) with the Virginia Department of Health. Agencies get direct access to Naloxone through the Virginia Department of Health (VDH) Division of Pharmacy Services via a streamlined online ordering and reporting system. The user-friendly platform allows agencies to efficiently place orders for Naloxone kits tailored to their specific needs.

As of January 2021, the naloxone provided through this grant includes Narcan 4mg nasal spray. Each kit is carefully packed to contain two doses of Naloxone providing First Responders a failsafe unit in case one breaks, or in case more than one dose is needed to revive a victim.

First Responder agencies have the flexibility to order a sufficient number of kits, ensuring that every active member can carry two doses of Naloxone. Additionally, agencies can place orders for additional Naloxone to replace used or expired kits and maintain a continuous supply chain. Invoices for Naloxone orders are sent by VDH directly to the VACP for payment. Agencies are not burdened with upfront costs, eliminating the need for reimbursement processing. This ensures that the agencies can focus on their mission without financial burden and unnecessary administrative hassle.

## *Provision of Naloxone Carrying Cases*

To foster a proactive approach to opioid emergencies and to make the Naloxone kits available at all times, VACP provides rugged nylon carrying cases that can be attached to an uniform. Staff can choose from a range of carrying cases including hard-shell and soft cases, and various attachment choices including metal clips, Molle clips, or Velcro clips whichever best fits their operational needs. The ordering process is straightforward, initiated through ODKit.com. Carrying cases are shipped directly to First Responder agencies and the invoices associated with the carrying cases are directed to the VACP for payment without needing to pay up front and wait for reimbursement.

## *Summary of Findings from prior studies*

This 2023 update focuses on evaluating the training activities from July of 2022 through June of 2023. The first evaluation of the REVIVE! which was conducted in 2020 evaluated the program's growth and effectiveness by analyzing ten years of historical data on opioid overdose deaths in Virginia and the training activities since the program's inception in 2015.

Key findings (2020):

- Opioid-related deaths have been consistently rising over the last 15 years. We have been tracking overdose death counts based on Virginia's Chief Medical Officer's data since 2007. Overdose death rates were rising moderately between 2007 through 2015 and more aggressively since 2015 through 2019.

- Larger cities and counties with substantially large number of First Responders trained through the program reported larger reduction in opioid-related death rates compared to localities with fewer trained First Responders.
- Localities with the lowest number of REVIVE! trainees and historically low overdose deaths show no change in death rates in pre- and post- REVIVE! timelines.
- Participants reported a higher level of confidence in successfully administering the drug to the victims of overdose after receiving training through REVIVE!
- Participants, whether voluntary or mandatory, expresses satisfaction and willingness to engage.
- Suggestions included expanding training to diverse groups such as tow truck drivers and funeral home staff.
- Participants advocated for broader accessibility, suggesting inclusion of the curriculum in Police Academy training.
- In 2020, most training and outreach was conducted through online medium due to the need for social isolation to protect from the COVID-19 pandemic. Participants suggested that the online training format be offered (in addition to the in-person training) even after the effects of the pandemic are over. The virtual training option allowed participants to receive the training under the situation when they were not able to travel longer distances, which is especially true for participants from rural and outlying areas.

#### Key findings (2022 update):

The recommendations from 2020 continued to hold relevance in the 2022 updated evaluation. The report evaluated program outcomes through June of 2022 through quantitative data collected from public sources and through survey of training participants collected by VACP in July of 2022. The updated study focused on evaluating training activities in 2021-22 and compare that to that of 2021 when most of the training activities were limited to remote platforms due to COVID-19 related social distancing protocols. The 2022 update provided an opportunity to compare training outcomes and perceptions between in-person and remote participants. Some of the important highlights of the 2022 updated report include:

- Training activities ramped up substantially as the impact of COVID-19 subsided.
- Opioid-related emergency room visits increased by 5%. Death due to opioid overdose increased by 16%.
- The geographic distribution of REVIVE! training correlated better with location reporting higher overdose incidences and deaths.
- Participant responses were overwhelmingly in favor of the training and its curriculum.
- Participants overwhelmingly suggested bringing back more in-person and hands-on training formats.

## Study Objective

This 2023 update report builds on the study conducted in 2022 and it seeks to evaluate the changes since the last reporting period. The effectiveness of the REVIVE! for First Responders program is measured by tracking the program output (number of First Responders trained) during the reporting period, and the program outcomes – a reduction in the number of reported overdose deaths. Additionally, the program's effectiveness is also assessed through a survey of training participants. The following are the three core objectives of this update report.

- Evaluate the trend in program output (number of trainees) with reference to the historical trend reported in the prior iterations of the study.
- Evaluate the trend in program outcomes (reported overdose deaths) since the 2022 reporting period<sup>1</sup>.
- Evaluate the program's effectiveness from the perspective of program participants as collected through the survey administered by VACP.

## Research Methodology, Data Sources, and Limitations

The total number of First Responders trained through the REVIVE! program is the measure representing program output. VACP provided us the comprehensive training data from 2015 through 2023 Q2 in electronic format. The data included information on training date, trainer name, trainee name, and the name of the organization where the trainee works. The database also mentions the location of the organization where the trainee belongs to, and this location has been assumed to be the primary service location of the trainee and matched with the corresponding geographic identifiers. We compared all 133 localities<sup>2</sup> in Virginia to better understand trends and gaps in REVIVE! Training and overdose related deaths.

The PlanRVA team performed further data cleaning by removing multiple entries for the same trainee under the same trainer and on the same date. During the cleaning process, special consideration was given to the individuals coming for a refresher training or those registering into multiple training categories. A new field combining individual IDs and the date of training was created and multiple entries for the same combination of person, date, training type, and training location were removed.

<sup>1</sup> We understand that using this measure to evaluate program output could be affected by the post-COVID 19 surge in drug overdose and overdose-related deaths. We also acknowledge that there are no alternative quantitative measures of program outcome available in the public realm at the time of this reporting. Additionally, we would like the reader to know that the public release of the data on overdose-related deaths is postponed by about two quarters.

<sup>2</sup> There are a total of 133 counties and independent cities in Virginia. For statistical comparisons, we have merged the data for independent cities that have less than 10,000 population with that of their containing counties.

Death due to drug overdose is our outcome variable. We obtained the data from the Virginia Department of Health's Office of the Chief Medical Examiner which prepares and maintains a public repository of opioid related death database for the Commonwealth<sup>3</sup>. We used historical data from 2015 to 2023 for this update report.

In order to maintain methodological consistency with the previous report, this study uses Compound Annual Growth Rate (CAGR) which calculates the average annualized rate of change in overdose deaths. CAGR provides a smoothed, compounded annual rate of change offering a more accurate representation of the overall growth or decline. CAGR can be represented through the following expression:

$$CAGR = \left( \left( \frac{EV}{BV} \right)^{\frac{1}{n}} - 1 \right) \times 100$$

Where,

BV = Beginning value representing the number of overdose death at the beginning of the period,

EV = Ending value representing the number of overdose death at the end of the period,

n = number of years between BV and EV

The value of CAGR helps us compare the obtained value of rate of overdose deaths in 2022 and the rate predicted based on previous 3-year timeframe 2019-2021. This model was used to numerically estimate the overdose death rate for the last year with complete data (2022), based on historical data, and the estimated value was compared with observed death rate for 2022.

Additionally, the program's effectiveness was evaluated using the participant response collected through an online survey. The survey was administered by VACP staff in October and November of 2023 and received a response of 61 participants. Following probes were included in the survey instrument:

- Reasons for attending the training,
- Overall satisfaction with the training and content,
- Overall satisfaction with the trainers,
- Perceptions of the training (suggestions for improvement, comments),
- Comfort with and perceptions of Naloxone administration following the training,
- Frequency of Naloxone administration following the training,
- If the participants would recommend the training to others, and a few other qualitative comments and suggestions for improving the program.

<sup>3</sup> <https://www.vdh.virginia.gov/medical-examiner/forensic-epidemiology/>

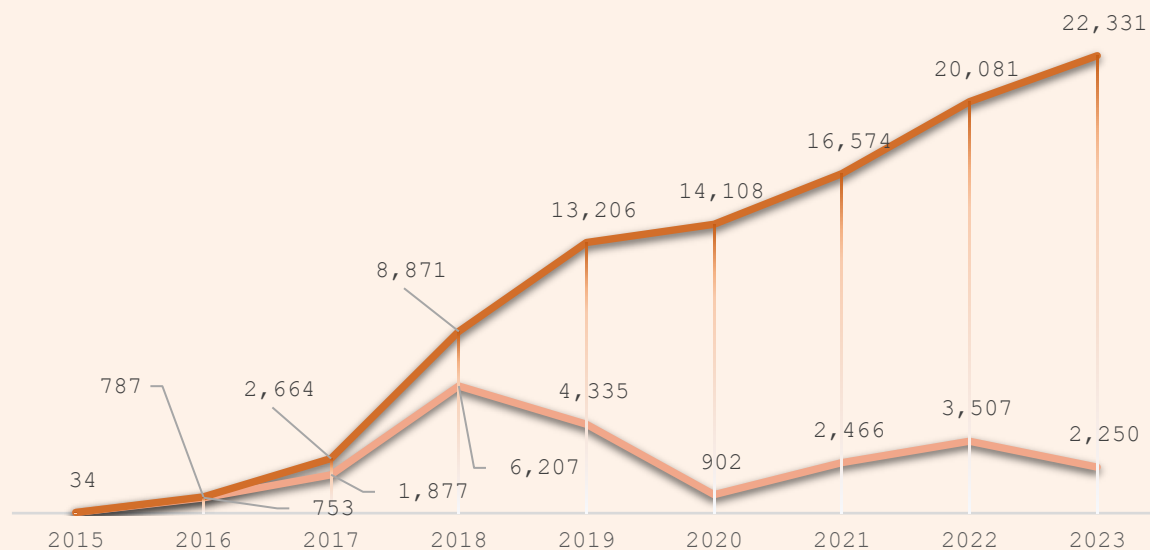
# REVIVE! Training and Opioid Overdose Trends in Virginia

## REVIVE! Training Statewide Trend

Figure 1.a represents the annual and cumulative trend in REVIVE! for First Responders Training in 133 Virginia localities from 2015 to 2023. The number of First Responders trained through the program grew consistently between 2015 and 2019 with the highest reported 6,207 trained in the year 2018 alone. In 2020 there was a drastic decrease in total trainees down to 902, as on-site training activities were stopped due to the COVID-19 pandemic. Training resumed and there has been a consistent yearly increase in total trained since.

Fig. 1.a

Number of First Responders Trained  
2015 - 2023

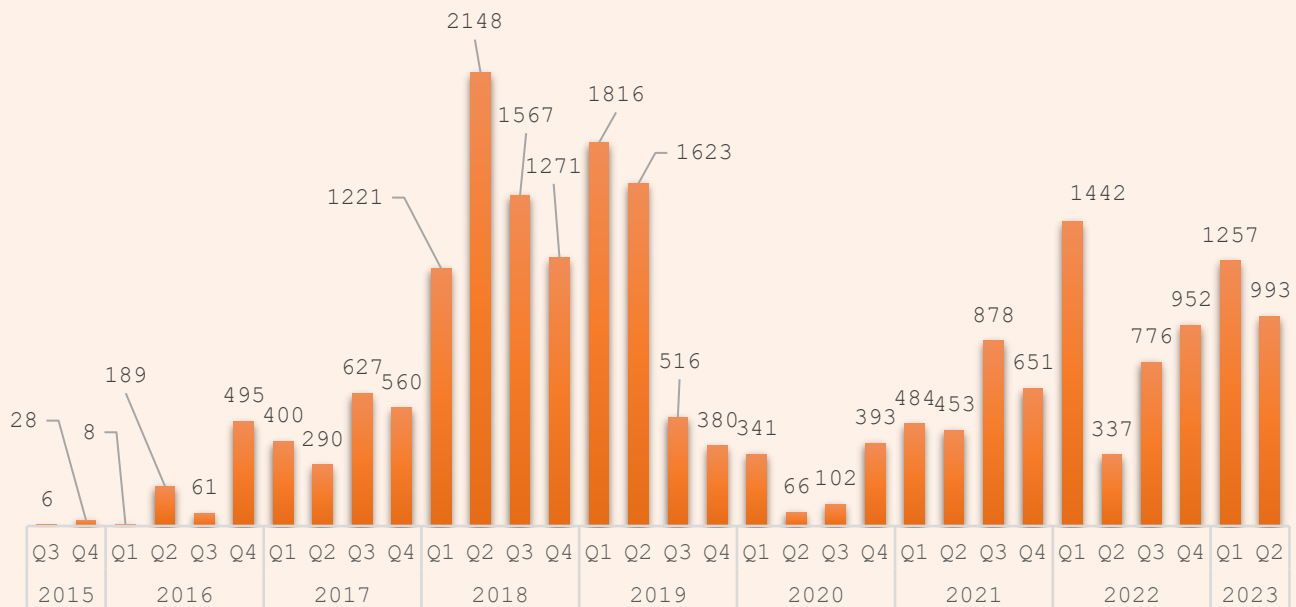


— Annual Number of First Responders Trained — Cumulative Number of First Responders Trained

The cumulative aggregate of trainees between 2015 and the second quarter of 2023 across all localities has grown from 34 to 20,081. During the earlier years of the program the number of trained First Responders increased rapidly with an average of 235% between 2016 and 2018. In 2019, the cumulative gain was a modest 48% and in 2020 it dropped to about 6% cumulative gain. 2021 showed a strong rebound with a cumulative gain of about 17.5%. In terms of raw numbers, a total of 3,507 First Responders were trained in 2022, which is about 15.7% of all First Responders trained over the program's history. In comparison, the share of total in 2016 was 3.4%, in 2017 was 8.4%, 2019 was 19%, 2020 was 4%, and 2021 was 11%. The year 2018 had the highest contribution of 28% to the total pool of trained First Responders.

Figure 1.b presents the numbers by quarters to make it possible to compare the first two quarters of 2023 with the corresponding quarters of the prior years. The total trained during the first two quarters increased from 197, to 690, to 3,369, to 3,439 from 2016 to 2019, respectively. The number dropped to 407 during the first two quarters of 2020 and rebounded back in 2021 to 937. During the same period in 2022, a total of 1,736 First Responders were trained. During the 2021-2022 reporting period a total of 3,265 First Responders were trained, which makes about 18% of all those trained since the inception of the program. Similarly, during the 2022-2023 reporting period, another 18% (3,978) First Responders were trained.

Fig 1.b Number of First Responders Trained 2015-2023 (by Quarters)





## Geographic Distribution of REVIVE! Training across Virginia Localities (2020-2023)

The five localities with the highest total cumulative number of trainees as of the 2023 Q2 are the city of Richmond (1,396), Fairfax County (1,248), the city of Chesapeake (1,185), Chesterfield County (763), and the city of Newport News (537). Oppositely, the five localities with the lowest total number of trainees as of 2023 Q2 are the city of Falls Church (3), Highland County (6), Highland County (6), Northumberland County (6), and Middlesex County (7), with Charles City County and the city of Colonial Heights tied with 8 trainees.

Fig. 2.a

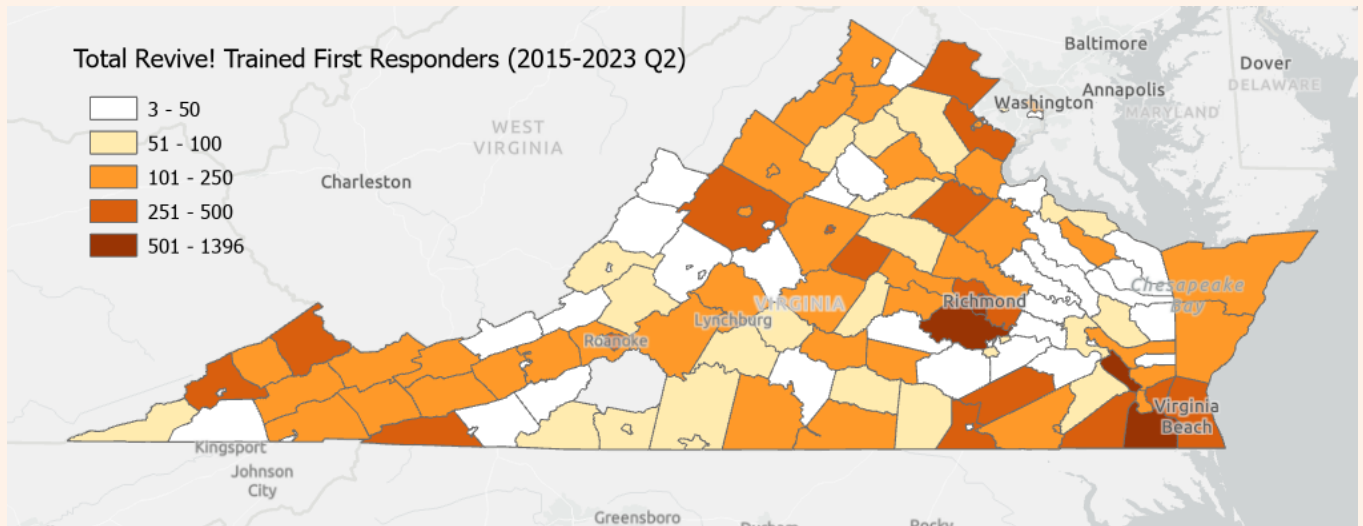
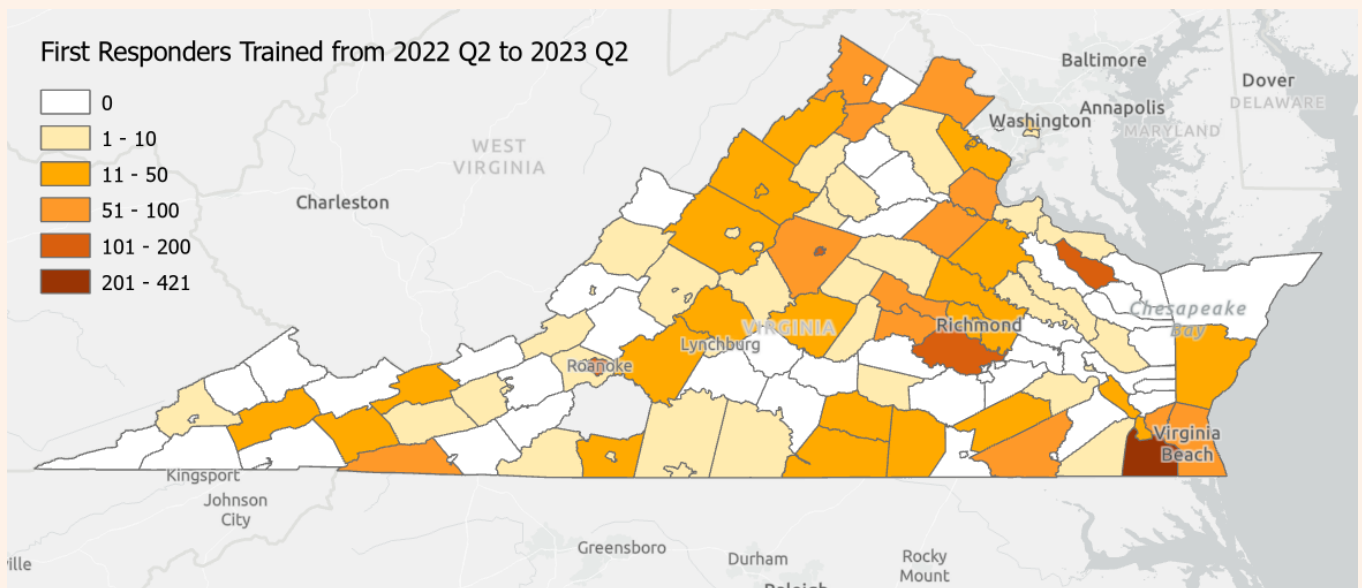


Fig. 2.b



In terms of per-capita numbers, Greensville County and Sussex County have 29 trained First Responders per 1,000 people, which is the highest among all Virginia localities, followed by Grayson County with 28 trained First Responders per 1000 people, Richmond County (28), Greensville County (27 per 1000), and Bland County (20 per 1000).

The Virginia localities with the least number of trainees per 1000 people are the city of Alexandria, the city of Colonial Heights, the city of Falls Church, the city of Manassas Park, and Prince George County, all of which have less than one First Responder trained per 1000 people. A full list of Virginia counties and the corresponding numbers of trainees are available upon request.

Figure 2.a shows the geographic distribution of all First Responders trained under the REVIVE! program from its inception in 2015 until the second quarter of 2023. The color spectrum runs from 3 to 1,396 where lighter colors represent fewer trainees and darker color represent higher numbers. City of Richmond, Fairfax County, the city of Chesapeake, Chesterfield County, and the City of Newport News show more than 500 First Responders trained so far. The highest value of 1,396 is reported for the city of Richmond. The following localities have reported between 250 to 500 First Responders trained under the program:

- Augusta County
- Buchanan County
- Charlottesville
- Fluvanna County
- Grayson County
- Greensville County
- Henrico County
- Loudoun County
- Norfolk
- Prince William County
- Roanoke
- Spotsylvania County
- Suffolk
- Sussex County
- Virginia Beach
- Wise County

Figure 2.b shows the total number of First Responders trained under the program during 2022 and 2023. There were more than 100 First Responders trained to administer Naloxone in Fairfax County, Chesterfield County, Richmond County, the city of Chesapeake, the city of Charlottesville, and the city of Roanoke. The following localities trained 51-100 First Responders during the current reporting period:

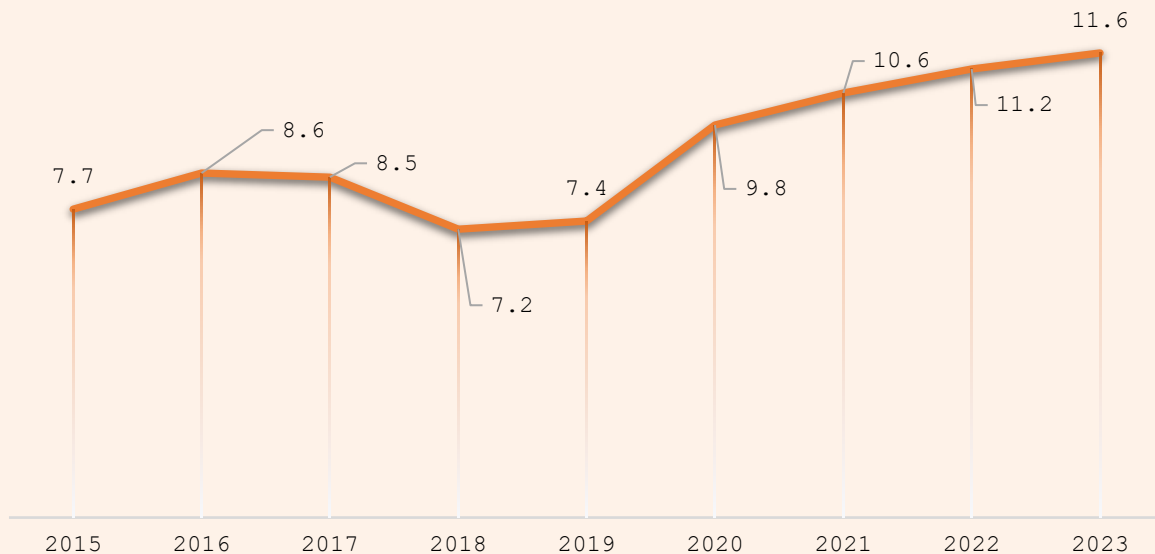
- Albemarle County
- Frederick County
- Goochland County
- Grayson County
- Loudon County
- Norfolk
- Powhatan County
- Southampton County
- Spotsylvania County
- Stafford County
- Virginia Beach
- Warren County

## Opioid Overdose Death Trend in Virginia

We also examined overdose related deaths and emergency department visits between 2015 and 2023 Q2 in 133 Virginia localities. The average rate of opioid related ED visits per 100k population for all Virginia localities rose between 2015 and 2016 before dropping to a low in 2018 (7.96) then subsequently increasing each year to the highest rate in 2023 Q2 (11.6). In 2023, the locality with the highest rate of opioid related ED visits per 100k population was the city of Portsmouth, and the lowest was Mathews County. Figure 3 shows the average rate of opioid related ED visits per 100k population for all Virginia localities between 2015 and 2023 Q2.

Figure 3

Average Rate of Opioid Related Emergency Department Visits per 100k Population for All Virginia Localities 2015-2023\*



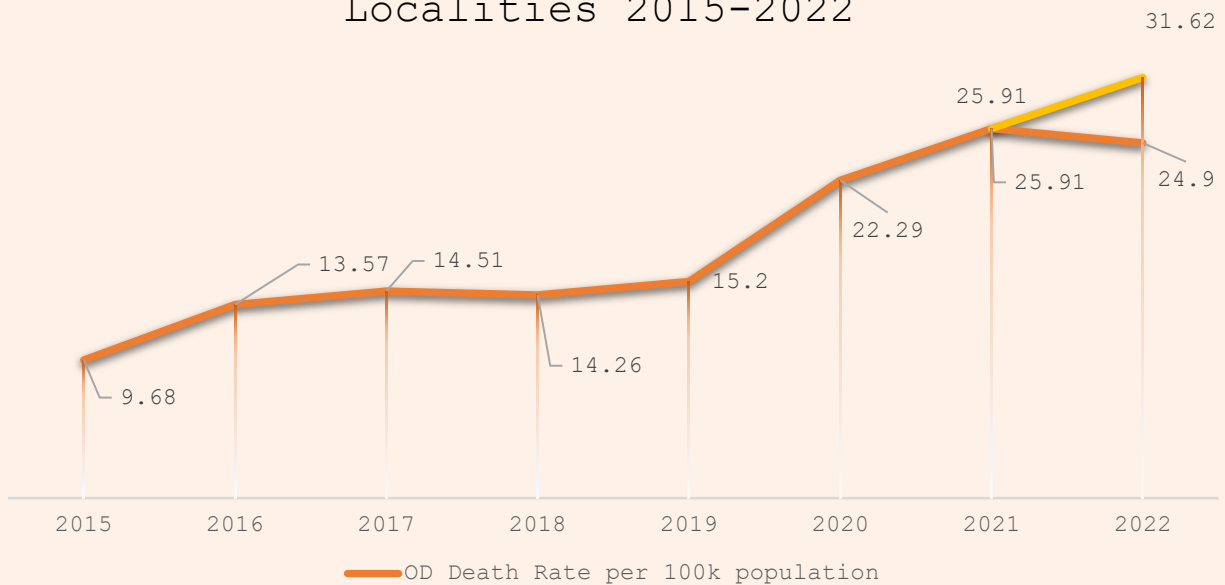
\*Average rate calculations for the year 2023 is based on data from January through August.

Source: Virginia Department of health (<https://www.vdh.virginia.gov/opioid-data/emergency-department/>), accessed on 9/6/2023.

Figure 4 represents the rate of opioid overdose deaths per 100k population for all Virginia localities between 2015 and 2022. The overdose death rate has been consistently increasing by an average growth rate of about 20% from 2015 to 2019. It rose by about 40% between 2019 and 2022 when the death per 100,000 people went from 15.4 to 25.9. Our regression model estimated the rate for 2022 would be 31.62 deaths per 100,000 people. However, the observed rate for 2022 based on the data obtained from VDH Office of the Chief Medical Examiner is 24.9 deaths per 100,000 people. In this regard, the observed rates are slightly lower than the estimated rate for 2022. 2022 represents a change in the historical trend of opioid overdose deaths per our per capita definition.

Figure 4

### Average Rate of Opioid Overdose Deaths per 100k Population for All Virginia Localities 2015-2022



\*Complete data for opioid related deaths is available through the end of 2022. Numbers for 2023 Q1 are not included in the rate calculations.

Source: Virginia Department of Health, Office of Medical Examiner (<https://www.vdh.virginia.gov/medical-examiner/forensic-epidemiology/>), accessed on 10/5/2023.

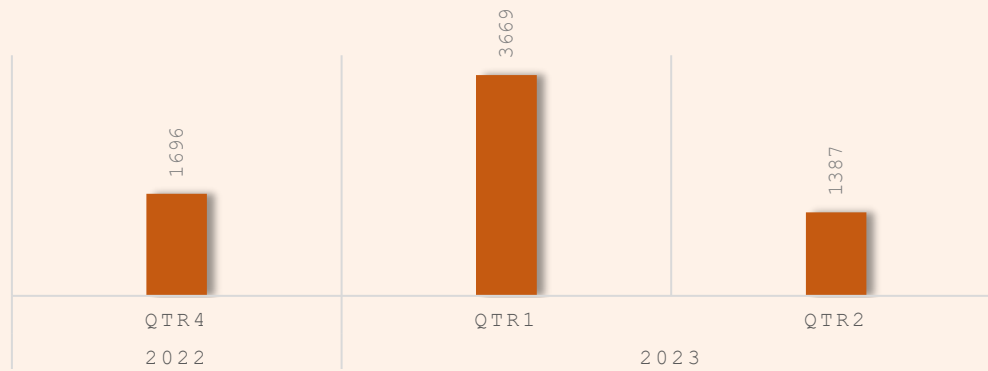
## Distribution of Naloxone Units and Carrying Cases

We received the total number of Naloxone doses distributed to local law enforcement and emergency rescue departments provided by VACP at no cost to the training participants.

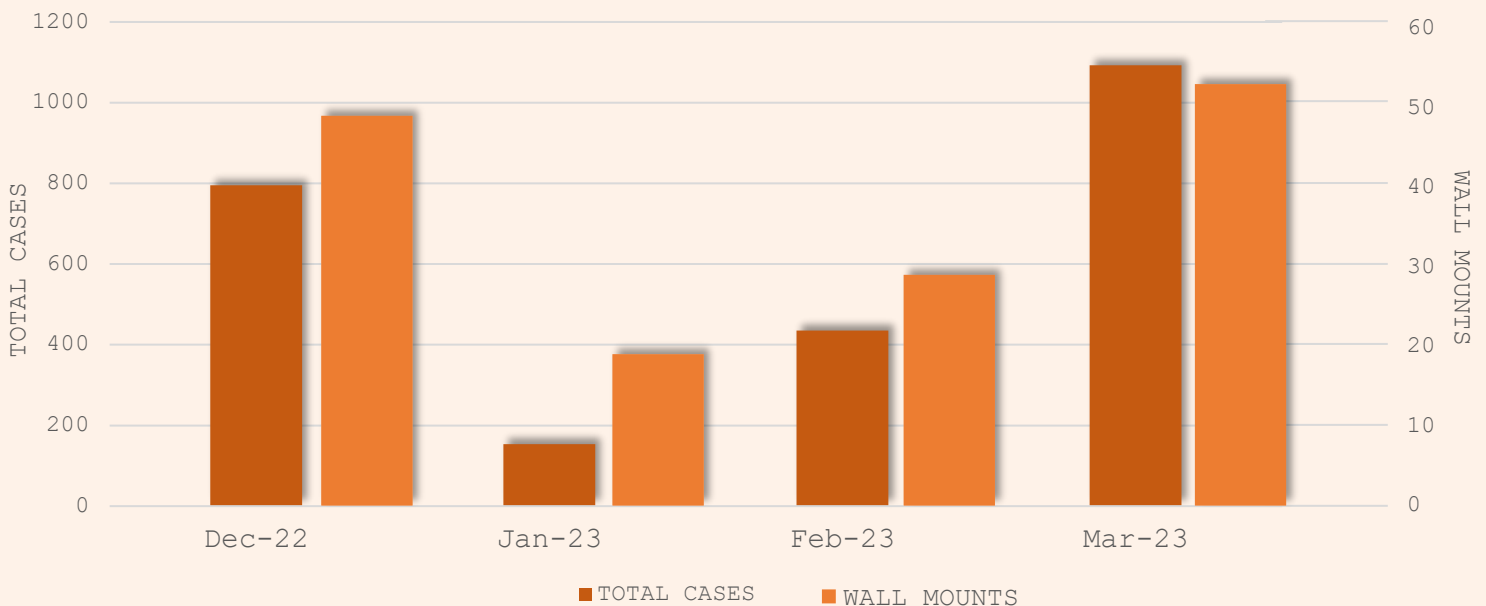
A total of 6,752 Naloxone units (13,504 total doses) were distributed during the 2022-2023 reporting period (Figure 4). This is comparable to the previous reporting period, where a total of 15,218 Naloxone doses were distributed, together with 6,425 carrying cases. This period 2,477 carrying cases were distributed and 150 wall mount kits. Though the count of trainings in the current reporting period have been consistent with last reporting period's trends, there have been fewer Naloxone supplies distributed.

Figure 5

### TOTAL NALOXONE UNITS SUPPLIED



### TOTAL CASES AND WALL MOUNTS SUPPLIED



## Geographic Distribution of Overdose Deaths and REVIVE! Training Outputs

Figure 6.a represents the geographic distribution of REVIVE! trained First Responders per 1,000 people across Virginia. Per capita measures allow for standardized comparison across our two outcome variables – number of REVIVE! trained First Responders, and count of reported opioid overdose deaths. The following are the top 10 localities with the highest number of First Responders trained per 1,000 people.

- Bland County
- Buchanan County
- Dickenson County
- Fluvanna County
- Grayson County
- Greenville County
- Nottoway County
- Richmond County
- Sussex County
- Wise County

Figure 6.a

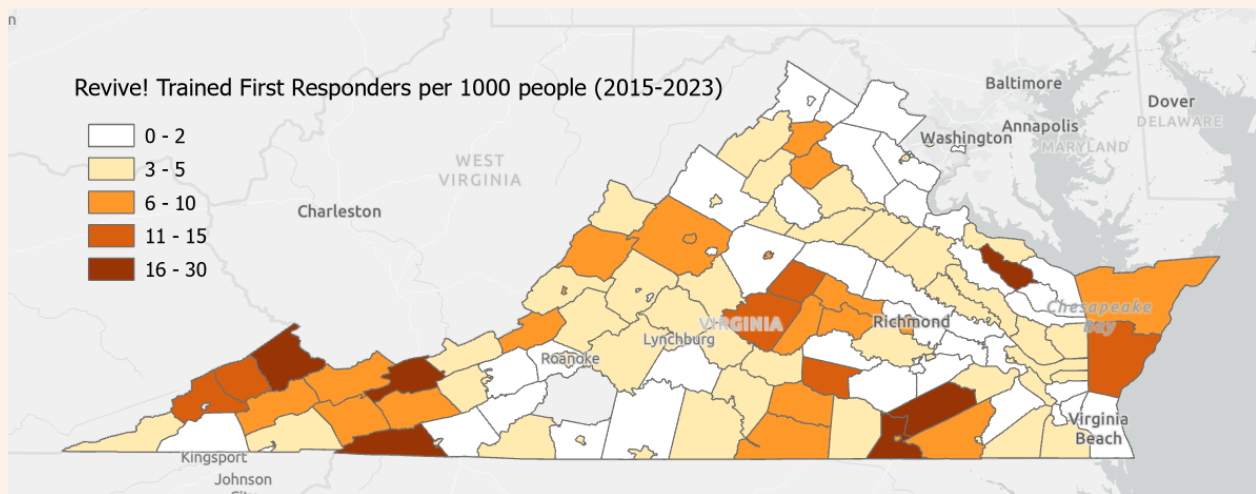
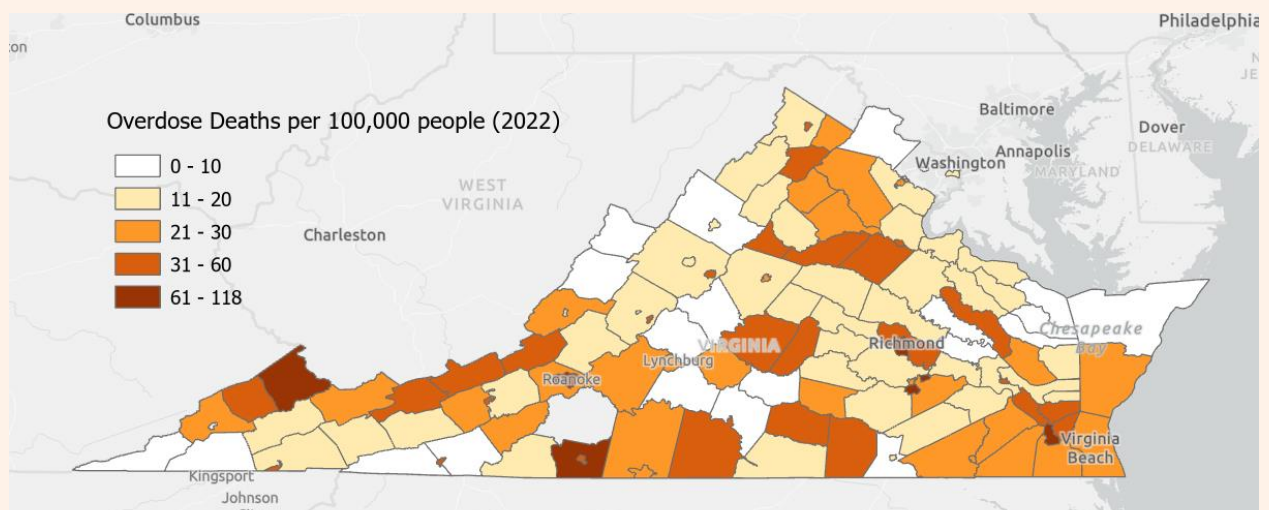


Figure 6.b



Similarly, the top 10 localities with the lowest number of REVIVE! trained First Responders per 1,000 people are as follows:

- Alexandria City
- Colonial Heights City
- Falls Church City
- King George County
- Loudon County
- Manassas Park City
- Middlesex County
- Northumberland County
- Prince George County
- Prince William County

Figure 6.b represents the geographic distribution of rates of opioid related deaths for various Virginia localities. As of 2021, the top 10 localities with the highest reported opioid related deaths per 100,000 population were:

- Brunswick County
- Buchanan County
- Craig County
- Henry County
- Hopewell City
- Petersburg City
- Portsmouth City
- Richmond City
- Roanoke City
- Salem City

Similarly, the top 10 Virginia localities with the least reported rate of opioid overdose deaths per 100,000 population were:

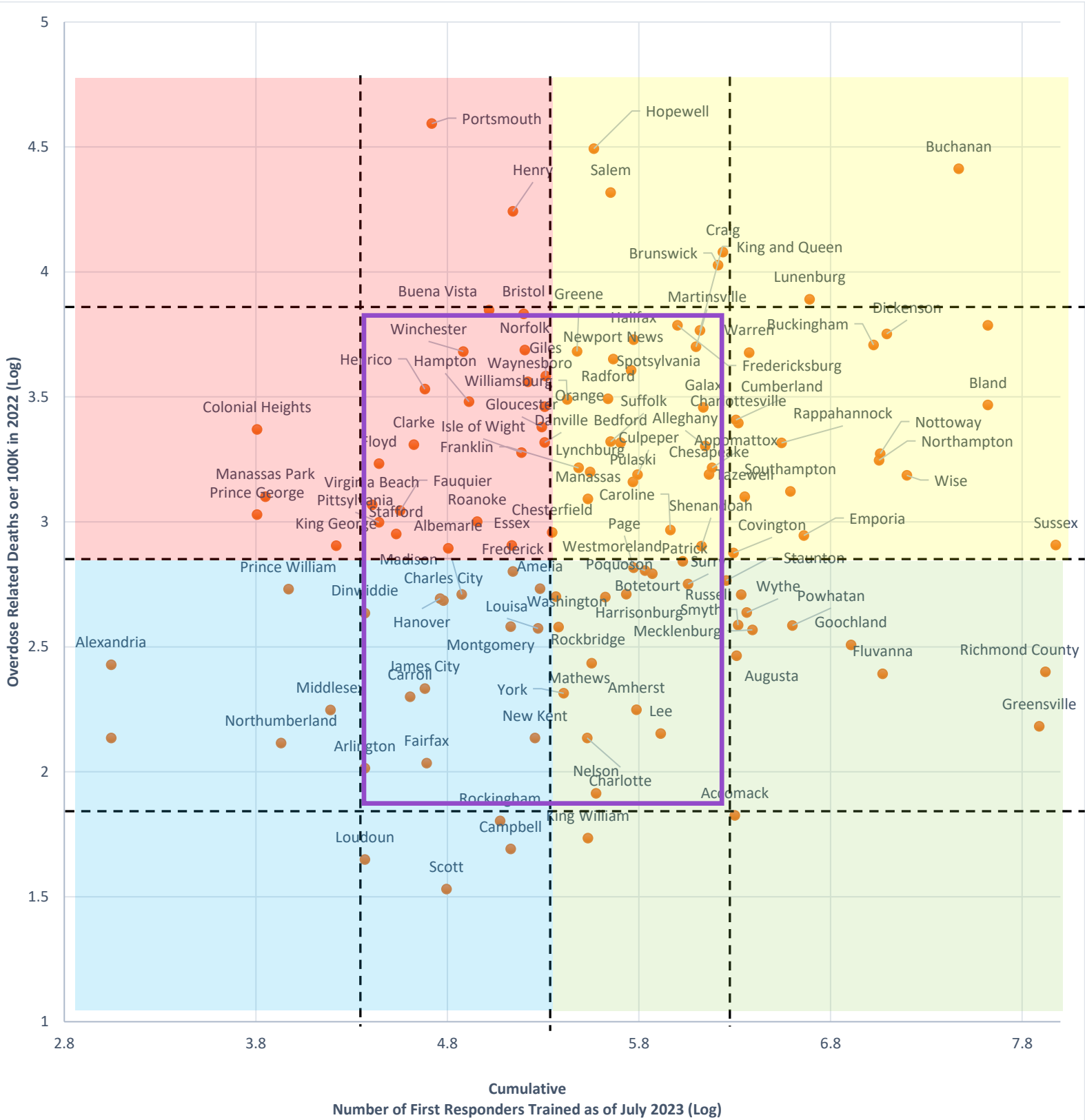
- Bath County
- Fairfax City
- Falls Church City
- Grayson County
- Highland County
- Lancaster County
- Lexington City
- Loudon County
- Prince Edward County
- Scott Count

Rural counties in the Southern part of the commonwealth and along the I-81 highway show darker colors in both the maps suggesting that these areas have higher reported per capita overdose deaths and there are more First Responders per capita in these counties that have received REVIVE! training. Hampton Roads, Shenandoah Valley, and northern Virginia show a similar trend (Fig. 2.a). In this regard, the training activities seem to be strategically focused across localities with higher need.

However, there are noticeable lighter areas in Figure 6.a representing lower per capita numbers of trained First Responders that correspond with darker shades in Figure 6.b which represents per capita overdose deaths. These highlight the areas where the program can strategically focus their future training campaigns. A detailed table of localities with estimated gaps in training outputs and observed overdose deaths in 2022 are available in Excel format upon request.

To better understand the geographic correlation between REVIVE! trained First Responders and reported overdose related deaths, we converted both the variables into natural logarithmic scale and plotted them on a scatter diagram (presented in Figure 7). Both axes in the figure are represented in logarithmic scale. The numerical value of the axes do not mean anything by themselves, but the diagram lets us compare the relative ratio of REVIVE! trained First Responders and the corresponding overdose-related death rates for each locality.

Figure 7: Log-log Plot of Overdose Death per Capita and Number of REVIVE! Trained First Responders per Capita.





The dotted lines in the middle of both vertical and horizontal axes represent the average value for the corresponding measures. The other two dotted lines on either side of the average value represent the first standard deviation – one representing average (+) standard deviation and another representing average (-) standard deviation. This is a standard statistical way of representing how far a single value is from the average of all values. The purple bounding box represents the area where the localities that fall inside the box can be considered to have a relative **balance of the total number of Revive! trained First Responders per 100,000 population relative to the total number of overdose deaths per 100,000 population**. Any localities that fall outside the purple bounding box can be considered to be relatively imbalanced in terms of how many REVIVE! trained First Responders are there compared to the rate of overdose-related deaths.

The localities in blue shaded area outside the purple box are those which relatively low overdose death per capita while also having relatively low REVIVE! trained First Responders per capita. Similarly, the localities in yellow shaded area outside the purple bounding box have high per capita overdose-related death rates while they also have relatively higher numbers of per capita REVIVE! trained First Responders.

The localities outside the purple bounding box on the red and green shaded regions are the ones with imbalance in their ratio of overdose deaths to trained First Responders. The localities in red shaded area have relatively higher per capita overdose-related deaths but also have relatively fewer per capita REVIVE! trained First Responders. For example, Colonial Heights reported 29.1 overdose-related deaths per 100,000 people in 2022, which is higher than the average value of 25 deaths per 100,000 among all localities. However, Colonial Heights has a total of 45 REVIVE! trained First Responders per 100,000 people by July of 2023 which is substantially lower than the average of 435 per 100,000 among all localities. Looking at the last reporting period, Colonial Heights, King George, Portsmouth, Henry and Manassas Park have all not seen an improvement their ratio of overdose deaths to Revive! trained first responders. These localities have maintained their position in the red quadrant of the chart since the last reporting period.

Similarly, localities in green shaded area have relatively less overdose deaths but at the same time have higher numbers of trained First Responders. For example, the overdose-related deaths in Goochland County as of 2022 is 12.3 per 100,000 people which is substantially lower than the average value of 25 per 100,000. While the number of REVIVE! trained First Responders per 100,000 in Powhatan is 736 which is considerably higher than the average value of 435 among all localities. Goochland, Powhatan, Greensville, and Accomack have all seen a reduction in overdose deaths and maintained above average numbers of trained First Responders, moving from the yellow section of the chart (2021-2022) to the green section (current reporting period).

The localities of Alexandria and Arlington maintained their positions in the low-overdoses and low-trainees quadrant. Sussex, Northampton, Hopewell, Brunswick, King and Queen, Dickenson maintained their position in the high-overdoses high-trainees quadrant.

The chart presented in Figure 7 can be useful to identify localities with training saturation and also those with training deserts. This information is expected to be useful in planning of geographically targeted training activities in the future.

## Summary of Quantitative Findings

The following are some of the highlights from the quantitative exercise:

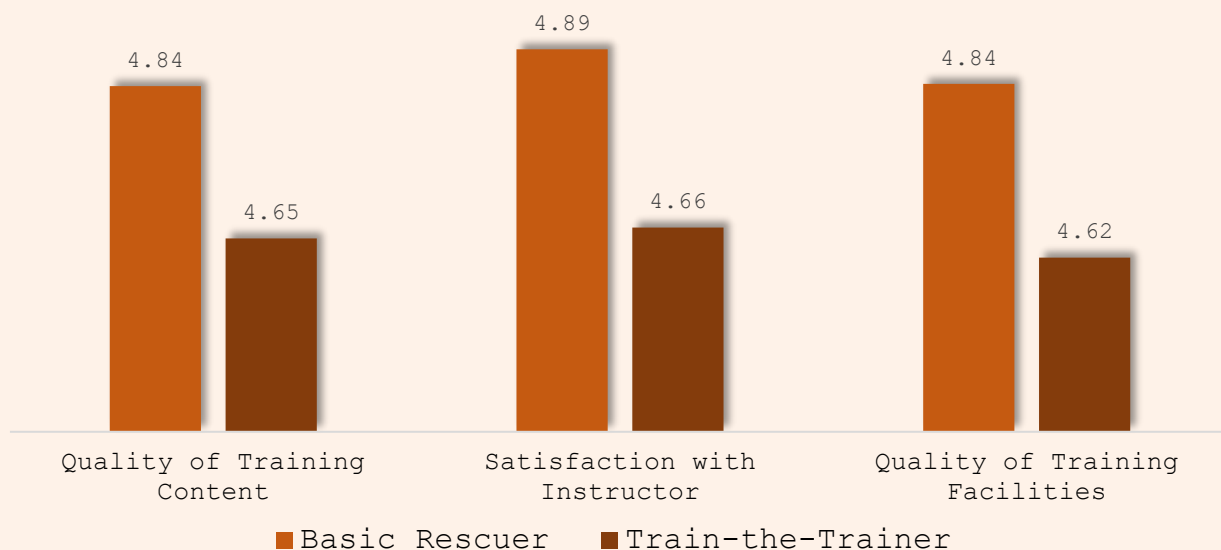
- 3,978 First Responders were trained under Virginia's REVIVE! program from July 2022 to June 2023. The count of trainees show a continued trend of increased growth in training activities since the 2020-2021 shift to online training.
- The rate of opioid-related emergency department visits remained relatively the same in Q1 and Q2 of 2023 as the 2022 rate (11.2 – 11.6), its highest rate since 2018. Death due to opioid overdose decreased by about 1% from 2021 to 2022. The 2022 rate is 4% lower than the estimated growth rate for the year.
- Most trained responders per capita in the southwest and southeast parts of the state and most overdose deaths per capita were in the southwest, southeast, and north central region west of I95. The southwest and southeast regions of the state have improved in their correlation of overdoses and trainings since the 2022 report and show trainings have been strategically placed.
- Historically, in the 2021 and 2022 update of this report, it has been found that the central region of the state shows an imbalance between the number of overdoses occurring and the number of trained responders. Opioid overdoses in this region have shown an increase. In the previous reporting periods, there were less trainees and more overdoses per capita in the central region between the Rappahannock River and York River. In 2022, this imbalance increased east-west in the middle neck region of Virginia, following the Rappahannock river into the piedmont region, following highway 17 and route 66. This reporting year the imbalance in the region has narrowed to the central region around highway 17, west of interstate 95.
- Most Virginia localities show good balance between the number of First Responders trained and the rate of overdose death reported. Although, we have identified some localities that have disproportionate share – more trainees where overdose death rates are relatively lower, or less trainees where overdose deaths are relatively higher – we acknowledge that VACP has been working towards providing more training strategically where the need is the highest. We recommend that VACP continue to focus their training activities in localities reporting a high number of opioid emergencies.

## Participant Perception on Effectiveness of REVIVE! Training

The Virginia Association of Chiefs of Police (VACP) administered a survey of all REVIVE! FR Trainers during the reporting period. The survey was administered by VACP staff in October and November of 2023. We studied the survey responses first by program and then by detailed response.

Out of 3,978 trainees, 3,873 completed the Basic Rescuer program evaluation survey. They were asked to independently rate the quality of the training content, their satisfaction with the instructor, the quality of the training facilities, and answer if they feel comfortable with administering naloxone. Out of 298 Train-the-Trainer participants, 286 completed survey responses to evaluate. The Train-the-Trainer participants were additionally asked if they felt comfortable with conducting a training. Those who completed the Basic Rescuer training had higher satisfaction with the program overall than those who completed the Train-the-Trainer program (Fig. 8). While 100% of the Train-the-Trainer program participants said they felt comfortable with administering naloxone after the training, 0.5% of Basic Rescuers did not (23). Three (1%) of the Train-the-Trainers said they did not feel comfortable conducting a training themselves after the program.

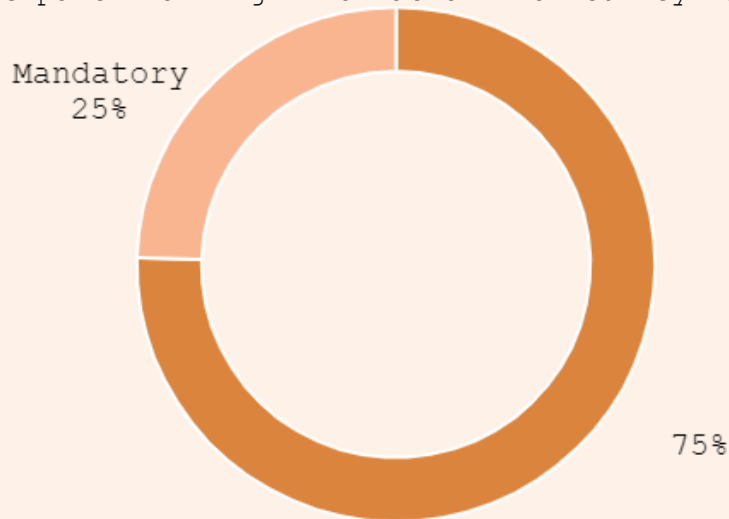
Fig. 8. Comparison of Program Satisfaction



Out of 298 trainees, 61 participated in a detailed program evaluation survey for the Train-the-Trainer program. During the previous reporting period, 310 trainees participated in the Train-the-Trainer detailed survey. During the current reporting period, 70% of respondents took the survey in the first two quarters of 2023. These were the quarters with the highest counts of trainees during the reporting period.

Respondents were asked to explain their reason for participating in the training event. Fig. 9 shows that 75% of respondents voluntarily participated in the training and 25% participated because it was mandatory training. This shows an increase in voluntary training from the previous reporting period, and a decrease in mandatory participation.

Fig. 9. Participant Training Information from Survey Data.



Of the 46 of 61 trainees that voluntarily participated in the training, their primary reason to participate can be summarized under the following themes, with most participant responses falling into the categories:

- A desire to educate themselves and provide certification, and
- A desire to offer training to others in their department.

One of the common themes across most responses was the importance of taking the training to be able to help their agency or department, with many noting that they hoped to assist their agency or department by providing new information and by being able to pass on information to others. For example, one participant stated that they took the training to *“be able to provide training to local fire & EMS personnel.”* Another one stated the training would help them *“be able to train the responders in my locality,”*

One prominent theme found in the survey responses was taking the training as a preparatory action. One participant said they took the training to *“ensure our new police officers are trained and prepared to respond to an overdose incident.”* Another expressed that they wanted *“to prepare myself and the department in the event of a drug overdose incident.”* One participant stated, *“My hope was to be prepared and get ahead of the opioid crisis before it becomes a problem,”* expressing the view that the training is anticipatory instead of reactionary. More evidence that the training is part of expectant actions is that trainees report being involved in starting or implementing a Narcan program. One participant shared they took the training *“to implement Narcan leave behind in our jurisdiction.”*

Another prominent theme gleaned from the qualitative responses focused on the participants’ desire to serve the community and engage with those outside of their workplace to further the work being done. They expressed an aspiration to *“to be a better help to my community,”* and to *“provide to my community through prevention and education.”* They see the future of the work and responses showed an ambition to reach further than the workplace. One respondent stated they took the training with the goal *“to train new people...and help educate the public.”* Responses show a desire to provide instruction and discourse internally and externally to their departments.

Responses also indicated a level self-motivation for taking the training. Many trainees suggested in their responses that the training is a way to equip themselves with knowledge. Across responses, trainees expressed how they wanted “to be educated on the use of Narcan,” “to have a better understanding of Narcan,” and to “expand knowledge.” One participant stated they “wanted additional training,” and another wanted to “enable myself to carry and use naloxone.” These responses highlight the way trainees feel empowered from the knowledge they gain during the training.

Respondents overall expressed a desire to save lives and help others. One participant effectively summarized this feeling: “So that I could provide certification, of this valued, life-saving, training,” while another stated, “so I can train my staff in REVIVE and help them save lives.” Their responses showed support of the program and that they believe in the work being done.

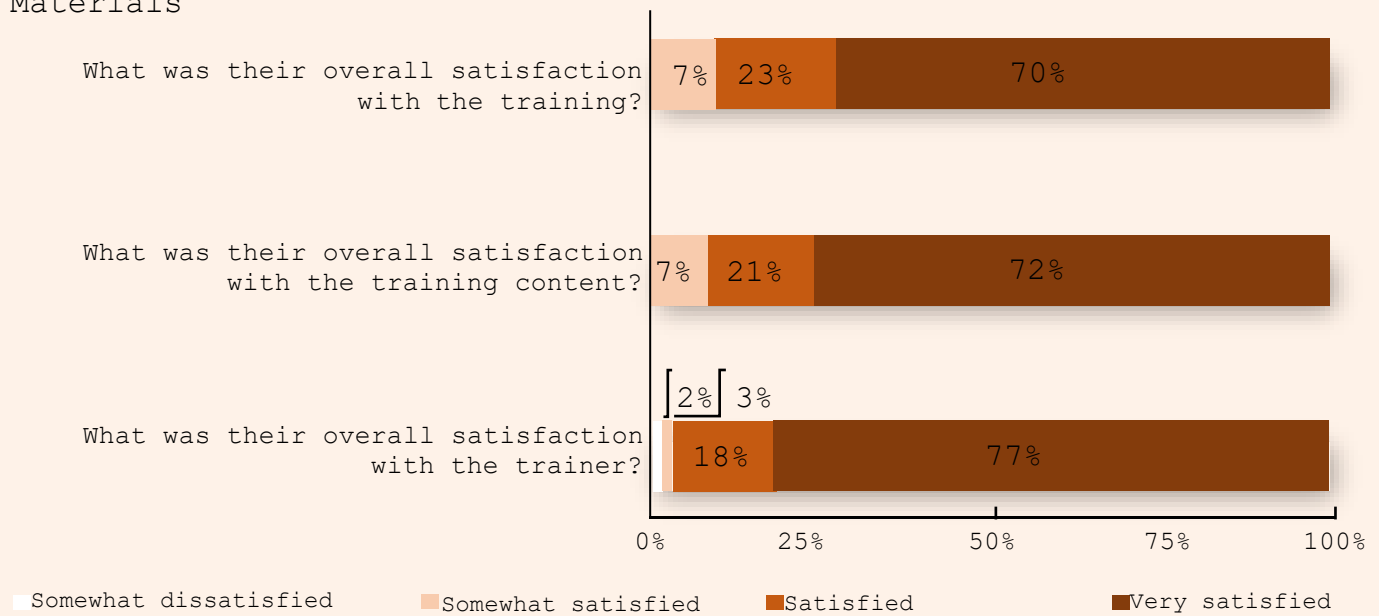


AJ Starke Promoting the First Responders Naloxone Program at the VACP First Line Supervisors Training, December 2023 [photo by Stephanie Diaz].

## Overall Satisfaction with the Training, Content, and Trainers

About 70 percent of trainees reported being “very satisfied” with the training overall. About 72% said they were “very satisfied” with the training contents, about 77% reported being “very satisfied” with their trainer. Only 2% of trainees were “somewhat dissatisfied” with their trainer, and 3% were only “somewhat satisfied”. Figure-9 shows the breakdown of satisfaction ratings for all three questions.

Figure 10. Satisfaction with Trainer and Training Materials

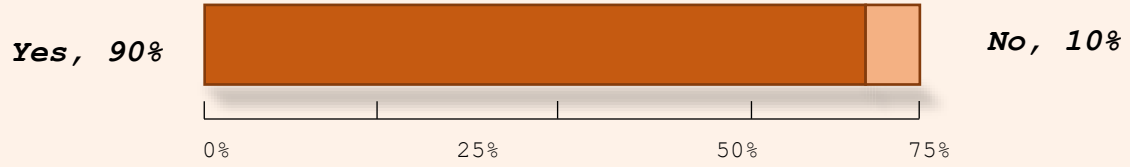


Note: Very dissatisfied and dissatisfied are not shown as no respondents chose those options.

As shown in Figure 11, participants overwhelmingly noted that they learned new information during the training. Approximately 90% of participants responded to the survey that they learned new information during the training.

Figure 11. New Information Learned During the Training.

Survey responses to "Did you learn new information during the training?"



Chief Tim Longo, UVA Police Department, receiving a box of fentanyl test strips, September 2023  
[photo by Dana Schrad].

## Participant Perceptions: Program Positives

Participants of the Train-the-Trainer program noted their satisfaction the training when asked “*Is there anything you’d like to share?*” and “*How could this training be improved?*” in the survey. Twenty responses had positive feedback, while the rest were left empty or had suggestions for improvement. Those who provided a response focusing primarily on the following things:

- Appreciation for the training provided,
- Satisfaction with the training, and
- The importance and need for the training.

Those who reported that they were satisfied with the information provided during the training said that it was a “*wonderful program,*” an “*excellent program.*” Multiple responses featured comments that the training was satisfactory or that it was sufficient.

Two respondents indicated that the training increased their knowledge and understanding of the material, one calling it “*informative and enlightening,*” and another saying that it “*was very informative and it answered all of the questions that I had.*”

One respondent included the trainers in their feedback, writing “*great training and instructors.*” Only one response directly commented on the method of the training, stating that they enjoyed the online training. Many respondents simply expressed their thanks that the training was provided.

A few respondents conveyed their belief that the training is important, pointing out that “*opioid addiction is real and only those trained can help.*” “*This is a valued training and service that is so desperately needed,*” one stated. Independent of the quality of the training, respondents feel that the act of facilitating training is highly necessary and value the action taken.



## Participant Perceptions: Areas for Improvement

Participants were also asked for recommendations as to how the training could be improved. Forty-two participants did not have any suggestions and/or stated that the training was sufficient and met expectations. The majority of recommendations for improvement (19) were requests for in-person and hands-on trainings, follow-up content, and the need for specialized content.

Recommendations for improvement related to specialized content were that some trainees already have experience with the subject matter. Those already with experience or already possessing certifications in the subject matter expressed the redundancy of the content and that it was designed with officers as the main audience. One participant wrote, *“most responders have familiarity with administering naloxone. This should be considered and training requirements reduced.”* Another wrote that *“having a training that is geared towards first responders who already have knowledge of opioids and administering Narcan,”* would be a way to improve the training, and another participant felt that the training was *“very geared towards a layperson or an officer.”* The redundancy of the content was pointed out through one participant who felt there was much overlap with other certifications that are a part of their job requirement: *“this is marketed towards the fire department, [and] this is a skill that is within our national and local skill set so it seems redundant to have to attend the training when we are already certified with the state that we know how to do this skill. I think this could save time and money for you and the agencies that may be using your service.”*

Participants commented on the need to keep the information up to date, and even providing follow-up content for trainees. *“Updating the PPT with updated information,”* was proposed to improve the training. Keeping the skills learned of mind for those certified was also important to participants. Two responses noted this, saying there should be *“more frequent and updated training for those already trained,”* and noting it would be good to have *“refresher courses after receiving a certificate.”*

Finally, two participants mentioned that the training should be open to more people than those in law enforcement or emergency services. One shared that the program should *“allow instructors to teach layperson,”* and another felt that they *“would like to be able to teach laypersons ...and not just Law Enforcement staff.”* They feel that in addition to training the Law Enforcement officers, the training should also include non-security personnel and other lay persons. The VACP does offer training to lay persons, and those who complete the Train-the-Trainer can go on to teach lay persons themselves, but some agencies do not let those employed who have completed the Train-the-Trainer to train lay persons.

Combining all the suggestions for improvement illuminates that all people possess different information at the start of the training. Those with experience in emergency response already possess knowledge and confidence in their ability to respond to an overdose. Law enforcement staff may or may not have prior knowledge and wish to revisit the skill, as it may not be used as frequently. Laypersons may have no prior knowledge and no emergency experience, but still may be capable of gaining the skills necessary to save lives.

## Comfort with Naloxone Administration

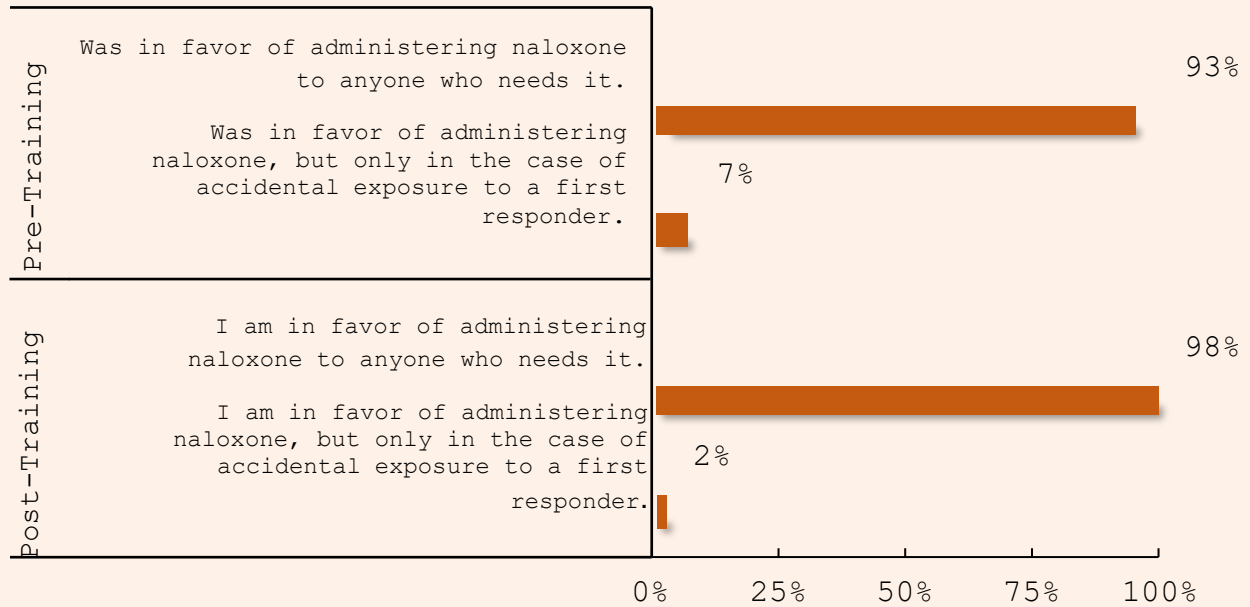
Prior to the training, about 93% of the trainees were in favor of administering Naloxone to anyone who needs it. About 7% in favor of using it only in the case of accidental exposure to a First Responder, and none of trainees were opposed to administering Naloxone.

After completing training, 98% of trainees were in favor of administering Naloxone to anyone who needs it and 2% were in favor only in the case of accidental exposure to First Responders. The training was helpful in improving the confidence, comfort levels, and opinion about administering Naloxone. The results for feelings regarding Naloxone administration before and after training are shown in Figure 12.



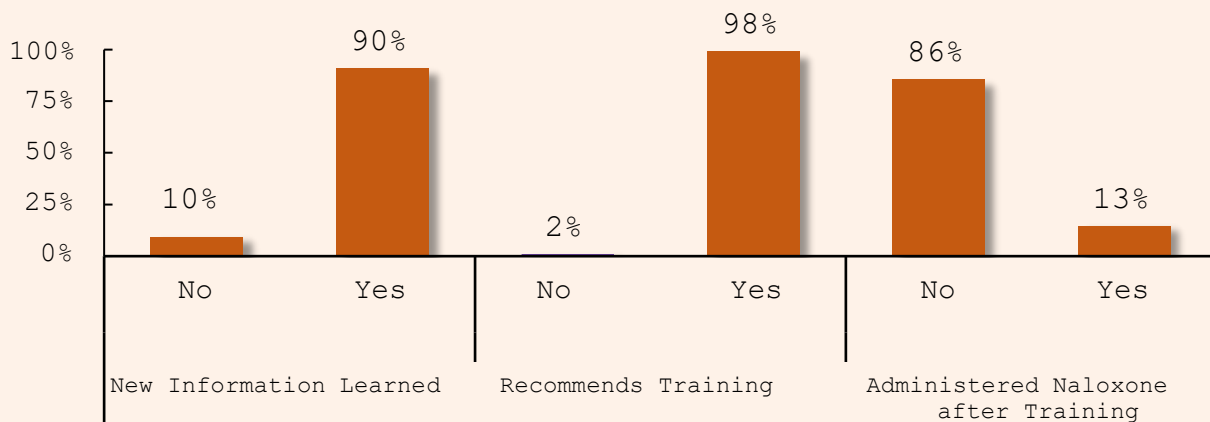
Sample Narcan Wall Mount Kit

Figure 12. Pre/Post-Training Feelings Towards the Administration of Naloxone



Although 86% of trainees had not administered Naloxone in response to an opioid overdose since attending training, all of them said that they felt comfortable administering Naloxone nasal spray after training. Figure 13 shows the post-training information for all survey respondents. 60 out of 61 participants stated that they would recommend the program to others.

Figure 13. Post-Training Outcomes



## Looking Ahead

The REVIVE! Program featured an overwhelmingly positive response to its trainings, content, and instructors. The program continues to train members of law enforcement and corrections on naloxone response, who continue to positively impact their communities by saving lives.

Since taking the training, 53 respondents have not administered naloxone in an overdose response. Even though only 8 trainees have administered naloxone since attending the training, they have administered to 26 individuals, with 20 individuals showing improved response after receiving the response of a trainee. Roughly the same percentage of respondents have administered naloxone in this reporting period (13%) as compared to the 2021-2022 period (14.5%) and are impacting the same proportion of livelihoods in this period (3.2 per respondent who has administered naloxone) as last period (3.3 per respondent who has administered naloxone).

## Summary of Participant Surveys

In sum, key findings from the interviews include:

- 75 percent of trainees participated in REVIVE! training voluntarily.
- 93 percent of participants were “very satisfied” or “satisfied” with the training overall. 95 percent were “very satisfied” or “satisfied” with their trainers and the level of expertise and experience they brought to the training. 93 percent of participants reported being “very satisfied” or “satisfied” with the training content.
- 90 percent of participants mentioned that they learned new information after taking the training.
- Improvement in the percentage of trainees that believe in administering to anyone who needs it was noted by comparing participant responses taken before and after training sessions.
- While more than 98 percent of respondents think that VACP should “*please keep the training available*”, (they recommend the training) some also suggested areas for improvement along the following themes:
  - Expand on more in-person and hands-on training
  - Offer more refresher courses and follow-up trainings

## REVIVE's Ongoing Challenges

REVIVE! is one of the largest and most comprehensive Naloxone training and distribution programs in Virginia. Over the last few years VACP has faced and overcome notable challenges in administering the program. One of the biggest challenges was to adjust to the in-person meeting limitations caused by the COVID-19 pandemic while still maintaining the momentum of the program. The VACP team was able to shift to online training. In 2022-2023 the team is still conducting online training for the Train-the-Trainer program, Basic Rescuer and training for lay persons has returned to in-person. The program continues to grow, offering Train-the-Trainer online monthly and in-person when requested to meet the demand for in-person training. It is required that Basic Rescuer be done in-person.

The VACP is also providing new material to trainees and Train-the-Trainers online. They have made efforts to update the course PowerPoints and make announcements on what information has been updated when. Train-the-Trainers can access this information anytime to ensure they have the most up-to-date materials from the VACP. Train-the-Trainers also must retrain every 3 years with VACP to certify themselves capable of training others on naloxone administration.

The VACP program administrators have identified challenges they are facing in maintaining the quality of training received by First Responders and lay persons in some communities. VACP is aware that many communities are reluctant to work with the police and tend to approach local health departments and other community organizations for help. These organizations provide Naloxone training on their own as well. However, these organizations and programs do not meet the standard set by REVIVE! in training and providing Naloxone to trainees.

## VACP's Outreach and Improvement Efforts

VACP has set long-term goals for the organization and would like to train at least two trainers in each law enforcement department of a locality. VACP plans to proactively connect with localities to better serve those communities without a REVIVE! trained responder.

Additionally, VACP had been working closely with the Virginia Overdose Prevention Resource Committee (VOPRC) by participating in their bi-monthly meetings and collaborating with state agencies and other stakeholders working on opioid overdose prevention and response. The VOPRC is comprised of members from the Department of Behavioral Health and Developmental Services (DBHDS), Virginia Department of Corrections (DOC), Virginia Department of Criminal Justice Services (DCJS), Virginia Department of Social Services (DSS), Virginia Department of Health (VDH), Comprehensive Harm Reduction, Virginia Community Action Partnership (VACAP), Virginia department of medical Assistance Services (DMAS), Chief Medical Examiner's Office, Community Service Boards (CSB's), Peer Recovery Specialists, Virginia State Police (VSP), Framework for Addiction Analysis and Community Transformation (FAACT), High Intensity Drug Trafficking Area (HIDTA), Virginia Association of Chief's of Police (VACP), and other stakeholders.

The Committee met on the second and fourth Tuesday of the month to collaborate and share information to increase the success of harm reduction efforts in Virginia. On the fourth Tuesday, the VOPRC had data meetings where data was reported by FAACT and HIDTA teams. The VSP,

FAACT Commonwealth report focuses on substance use related police incidents reported to Virginia State Police's Incident Based Reporting (IBR) system to answer various questions of interest. More specifically, the report contains information related to the demographics and trends in the number of opioid abuse related incidents over time. HIDTA uses the Overdose Mapping and Application Program (ODMAP) – a nationally used data mapping program - that provides near real-time suspected overdose surveillance data to support public safety and public health. VACP uses this information to pivot their strategies and to focus their resources in communities that report higher number of opioid-related incidents and/or deaths.

In 2023 there has been a dramatic increase in government and media focus on mental and behavioral health. Governor Youngkin initiated *Right Help, Right Now*, a plan to invest in and reform mental and behavioral health programs in the state. The reform proposed \$230 million in funding<sup>1</sup> as part of the 2023 state budget and has garnished bipartisan support<sup>2</sup>. Already, 24 bills<sup>3</sup> have passed. Included in the reform is a \$15 million investment in opioid initiatives, with a goal to reduce fentanyl poisoning of youth.

The VACP started a program in 2023 to distribute fentanyl test strips to major universities in the state to reduce overdose and accidental poisonings. Test strips have been shown to be an effective way to reduce overdoses<sup>4</sup>, and reduce the use of other drugs that are contaminated with fentanyl. The VACP has distributed 20,000 test strips to universities in Virginia. While universities are not the hot spots of overdoses, students often experiment with drugs. Recreational and even one-time use of drugs run the risk of consuming contaminated drugs. The VACP has partnered with 16 large public universities and community colleges to distribute test strips.

Partnerships with universities have been successful for VACP. The University of Richmond's student newspaper, *The Collegian*<sup>5</sup>, reported on a Train-the-Trainer passing on the life-saving knowledge to others on campus. The campus police chief completed the REVIVE! program and has trained other University of Richmond police department members, who have gone on to administer naloxone to those on campus. The University of Richmond aims to enable students to seek medical assistance for drug use without the fear of disciplinary action. UR Police Chief McCoy highlighted this policy in the article. He stated that he does not want students to be afraid to contact URPD in need of training, naloxone, or if they witness an overdose. This article communicates all the goals of the REVIVE! program; to increase public awareness and destigmatize the use of Narcan, and increase the comfort and cooperation of citizens with local emergency responders and police.

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<sup>1</sup><https://www.virginiamercury.com/2022/12/14/youngkin-proposes-230-million-behavioral-health-overhaul/>, accessed 12/4/2023.

<sup>2</sup><https://thehill.com/opinion/healthcare/4227634-virginia-is-building-a-national-model-to-address-teen-mental-health/> 9/28/23, accessed 12/4/23.

<sup>3</sup><https://www.hhr.virginia.gov/behavioral-health/>, accessed 12/4/2023.

<sup>4</sup><https://www.brown.edu/news/2018-10-18/fentanyl> 10/18/18, accessed 12/4/23.

<sup>5</sup><https://www.thecollegianur.com/article/2023/11/ur-plans-to-change-inaccessibility-of-narcan> 11/7/23, accessed 12/14/23.

## Closing Remarks

In conclusion, we reflect on what we have learned through the evaluation of the REVIVE! program. Our data-driven analysis offers a comprehensive understanding of the program's impact, evolution, and ways it can get even better. The data indicates a modest 5% reduction in opioid-related deaths from 2021 to 2022, but at the same time, there is a 5% increase in Emergency Room visits related to drugs. Notably, a significant 80% of overdose deaths involved fentanyl and synthetic opioids, highlighting the need for targeted interventions.

Naloxone, a life-saving antidote, is a game-changer in the battle against overdose fatalities. Proven to be highly effective, it serves as a vital tool for First Responders and laypersons alike, enabling them to save lives by temporarily reversing the adverse effects of overdose while victims wait for further help.

At the core of the REVIVE! program is the mission to train First Responders and community members. They learn to spot signs of overdose and use Naloxone promptly. The fact that they get free Naloxone doses and carrying cases emphasizes the urgency – time is critical in overdose situations. Those who've gone through the training feel more confident and capable of saving lives, which is a huge win. But it does not stop there. Participants suggest extending the training to more people - for example, to those who might come across a victim in workplaces, gas stations, restaurants, and even at home. Participants mention that they feel empowered to act proactively instead of waiting for relevant authorities to arrive for help.

The REVIVE! program has weathered challenges, notably the disruptions caused by the COVID-19 pandemic. The training pivoted to virtual platforms during the height of the pandemic. It subsequently returned to offering in-person training in late 2022 and 2023 for the Train-the-Trainer course and refresher training through virtual platforms, a flexible option for those who seek ongoing education.

Moreover, VACP's recent expansion into preventive measures, such as providing fentanyl testing strips, marks a proactive approach in addressing emerging risks. This expansion seeks to serve vulnerable populations, especially those in group-quarter settings such as university dormitories, correctional and rehabilitation centers, etc. and aligns with the evolving landscape of substance use in these places.

Our recommendations from previous reports have been heard. VACP's strategic response to concerns about geographic disparities in training events and the scale of opioid-related deaths showcases a commendable commitment to improvement. The current data-driven approach and targeted outreach efforts have significantly aligned training initiatives with the communities most affected.

Looking forward, the REVIVE! program is a success story empowering communities to combat the opioid crisis. We recommend VACP to continue focusing on both First Responders and lay person trainings, leveraging data insights and community engagement to further refine and expand the reach of the REVIVE! program.



## References

- Jablonski, Amy. (2023). UR plans to change inaccessibility of Narcan. Retrieved from The Collegian: <https://www.thecollegianur.com/article/2023/11/ur-plans-to-change-inaccessibility-of-narcan> on 12/14/2023.
- Siegel, Marc. (2023). *Virginia is building a national model to address teen mental health*. Retrieved from The Hill: <https://thehill.com/opinion/healthcare/4227634-virginia-is-building-a-national-model-to-address-teen-mental-health/> on 12/4/2023.
- Rappe, Molly. (2018). Fentanyl test strips prove useful in preventing overdoses. Retrieved from News from Brown: <https://www.brown.edu/news/2018-10-18/fentanyl> on 12/4/2023.
- Virginia Department of Health. (2023a). Drug Overdose and Related Health Outcomes. [Data set]. <https://www.vdh.virginia.gov/drug-overdose-data/> accessed 9/6/2023.
- Virginia Department of Health. (2023b). Forensic Epidemiology. Quarterly Drug Death Report. [Data set]. <https://www.vdh.virginia.gov/medical-examiner/forensic-epidemiology/> accessed 10/5/2023.
- Virginia Secretary of Health and Human Resources. (2023). Behavioral Health Plan: About Right Help Right Now. Retrieved from Virginia Secretary of Health and Human Resources website: <https://www.hhr.virginia.gov/behavioral-health/> on 12/4/2023.
- Vogelsong, Sarah. (2022). *Youngkin Proposes \$230 million behavioral health overhaul*. Retrieved from Virginia Mercury: <https://www.virginiamercury.com/2022/12/14/youngkin-proposes-230-million-behavioral-health-overhaul/> on 12/4/2023.

## Appendix: Participant Survey Questionnaire

### Basic Rescuer Program:

1. Quality of Training Content (5 pt. Likert scale)
2. Satisfaction with Instructor (5 pt. Likert scale)
3. Quality of Training Facilities (5 pt. Likert scale)
4. Comfortable administering naloxone? (y/n)

### Train-the-Trainer Program:

1. Quality of Training Content (5 pt. Likert scale)
2. Satisfaction with Instructor (5 pt. Likert scale)
3. Quality of Training Facilities (5 pt. Likert scale)
4. Comfortable administering naloxone? (y/n)
5. Comfortable conducting training? (y/n)

### Train-the-Trainer Program:

1. Date of train the trainer course you attended (mm/dd/yyyy)
2. Was your participation in the training mandatory or voluntary?
  - a. If voluntary, what was the reason you chose to attend the training?
3. What was your overall satisfaction with the training? (5 pt. Likert scale)
4. What was your overall satisfaction with the training content? (5 pt. Likert scale)
5. Did you learn new information during the training? (y/n)
6. What was your overall satisfaction with the trainer? (5 pt. Likert scale)
7. After completing the training, did you feel comfortable with administering Naloxone nasal spray?
  - a. If not, why? (open-ended)
8. Would you recommend the training to others? (y/n)
9. How could this training be improved?
10. What were your feelings prior to the training about administering Naloxone in the event of an opioid overdose?
11. What are your feelings now about administering Naloxone in the event of an opioid overdose?
12. Have you administered Naloxone in response to an opioid overdose since attending the training? (y/n)
  - a. If yes, how many individuals have you administered Naloxone to?
  - b. If yes, how many individuals showed an improved response after receiving Naloxone?
13. Is there anything else you would like to share? (open-ended)