VMAP
IMPACT REPORT
2022

Virginia Mental Health
Access Program

Contents

Letter from the Medical Director

Recently, I was at a roundtable on children's mental health with Virginia's Governor, First Lady, and Secretary of Health and Human Resources. Around the room were many people who represented various domains related to providing pediatric mental health care including primary care providers, nurses, psychiatrists, psychologists, social workers, counselors, parents, youth, mental health facility staff, and hospitals. The following day I attended meetings with two different payers, one Medicaid and one private. Separately, both asked me, *"How do we help?"* We discussed the possibilities of new types of payment models to help relieve the workforce shortage and assist primary care clinicians with meeting this unprecedented demand for care.

I was so heartened by the efforts of so many to help our youth who are in need. Reporters have recently been asking me - *"Is the youth mental health crisis over now that the pandemic is better? Are we getting back to normal?"* Sadly, the answer is no… our young people are still suffering. Suicide is still the second leading cause of death for young people ages 10 – 24. In recent years, more adolescents died from suicide than from the next ten leading medical causes of adolescent deaths added together!

And, of course, we already had a youth mental health crisis pre-pandemic, which was worsened by the trauma of the last few years. So, getting back to *"normal"*, which one might define as *"pre-pandemic"*, is not actually the goal. We want to be better than that. We want our children to be as happy and healthy as they can possibly be. We must change the upward trajectories of the percentage of adolescents experiencing sadness or hopelessness, anxiety, and thoughts of hurting themselves. That should be our goal.

I am so proud of the Virginia Mental Health Access Program (VMAP) team who work hard to make this program a reality. Each and every one is working to be a part of the solution. Through training primary care providers, providing mental health consultation, and care navigation resources, we are reaching an unprecedented number of children and their families. By expanding our work to include services for our very youngest, under five years old, we are working even further upstream to address the behavioral and mental health of our state's future generation.

There is more work to do. To strengthen our mental health care system, we need to:

- **Prevent** childhood trauma and care for our youth in a trauma-informed way;
- **Promote** skill building, focusing on the concepts of resilience and relational health;
- **Pay** appropriately for mental health services to sustain those who are doing this important work;
- **Partner** together to address the workforce shortage; and
- **Provide** services in an equitable and accessible way by addressing social determinants of health.

In my various meetings about children's mental health, I am always struck by the dedication to and passion for working towards solutions to help children, adolescents, and their families. It makes me optimistic that we will get through this with a stronger and more sustainable mental health care system for everyone. By working together with those who care for children, you will see in our impact report how VMAP continues to make a difference. Slowly but surely, every day is better when a VMAP team member cares for another child, helps another parent, trains another provider, and builds another connection, thereby strengthening our collective ability to provide services to those who are in need.

Thank you so much for your ongoing support and doing your part to improve the lives of Virginia's children and families every day!

Warmly,

Sandy Chung, MD, FAAP
VMAP Medical Director
& Founder

Acknowledgements

Acronyms

AAP . . . . American Academy of Pediatrics

CAP . . . . Child and Adolescent Psychiatrist

CME . . . . Continuing Medical Education

CRM . . . . Customer Relations Management

DBHDS . . . . Department of Behavioral Health and Developmental Services

FTE . . . . Full-Time Equivalent

HRSA . . . . Health Resources and Services Administration

LMHP . . . . Licensed Mental Health Professional

MOC . . . . Maintenance of Certification

MSV . . . . Medical Society of Virginia

MSVF . . . . Medical Society of Virginia Foundation

NPI . . . . National Provider Identifier

PCP . . . . Primary Care Provider

QED . . . . Quasi-Experimental Design

REACH PPP . . . REACH Institute's Patient-Centered Mental Health in Pediatric Primary Care

SDOH . . . . Social Determinants of Health

VA-AAP . . . . Virginia Chapter of the American Academy of Pediatrics

VDH . . . . Virginia Department of Health

VMAP . . . . Virginia Mental Health Access Program

Executive Summary

VMAP was strategically designed in 2018 to address pediatric mental health challenges occurring in the Commonwealth of Virginia through a multi-tiered and culturally responsive lens. Engaging a wide range of operating partners, funding stakeholders, and income streams that total over **$7.2 million**, VMAP now offers a scalable model that helps **mitigate the shortage of Virginia's pediatric mental health workforce** through **improving primary care providers' (PCP) understanding of assessing, treating, and managing pediatric mental health conditions**. VMAP offers a variety of services tailored to PCPs seeing patients age 21 and under offering same-day mental health consultations and care navigation services, as well as a suite of tailored and specialized pediatric mental health trainings that provide Continuing Medical Education (CME) or Maintenance of Certification (MOC) credit to participants. Additionally, VMAP's marketing and outreach campaigns disseminate knowledge of its services to PCPs resulting in:

1,053 PCPs registered for VMAP	**225% increase** in registered providers from 2020 through 2022	**60% increase** in new users visiting the VMAP website in 2022

THE VMAP LINE

The VMAP Line employs over **35 staff**, including child and adolescent psychiatrists (CAP), licensed mental health professionals (LMHP), and care navigators, across **seven hospitals** and Community Service Boards (CSB) throughout VMAP's **five regional hubs**.

Since the VMAP Line opened in August 2019 it has:

Received **3,886** calls from PCPs	Completed **2,799** mental/behavioral health consultations[1]	Completed **2,036** care navigation requests[1]	Served **3,360** Virginia pediatric patients[2]

According to post-VMAP Line surveys*:
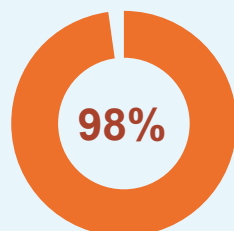
98% of PCPs found their behavioral health consultation *Very helpful* or *Extremely helpful*
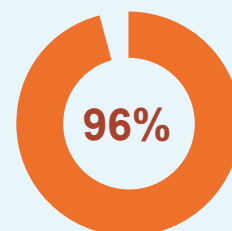
96% of PCPs indicated they were *Extremely likely* to use the VMAP Line again

*VMAP received 113 post-VMAP Line surveys.

[1]Please note more than one service (CAP consultation, LMHP consultation, and care navigation) can be requested in a single call.

[2]This is how many patients VMAP has served directly through their provider calling the VMAP Line. However, VMAP is estimated to currently reach hundreds of thousands of Virginia children through their PCPs, which is roughly estimated using the number of providers trained by VMAP combined with the average patient panels of pediatric-serving PCPs.
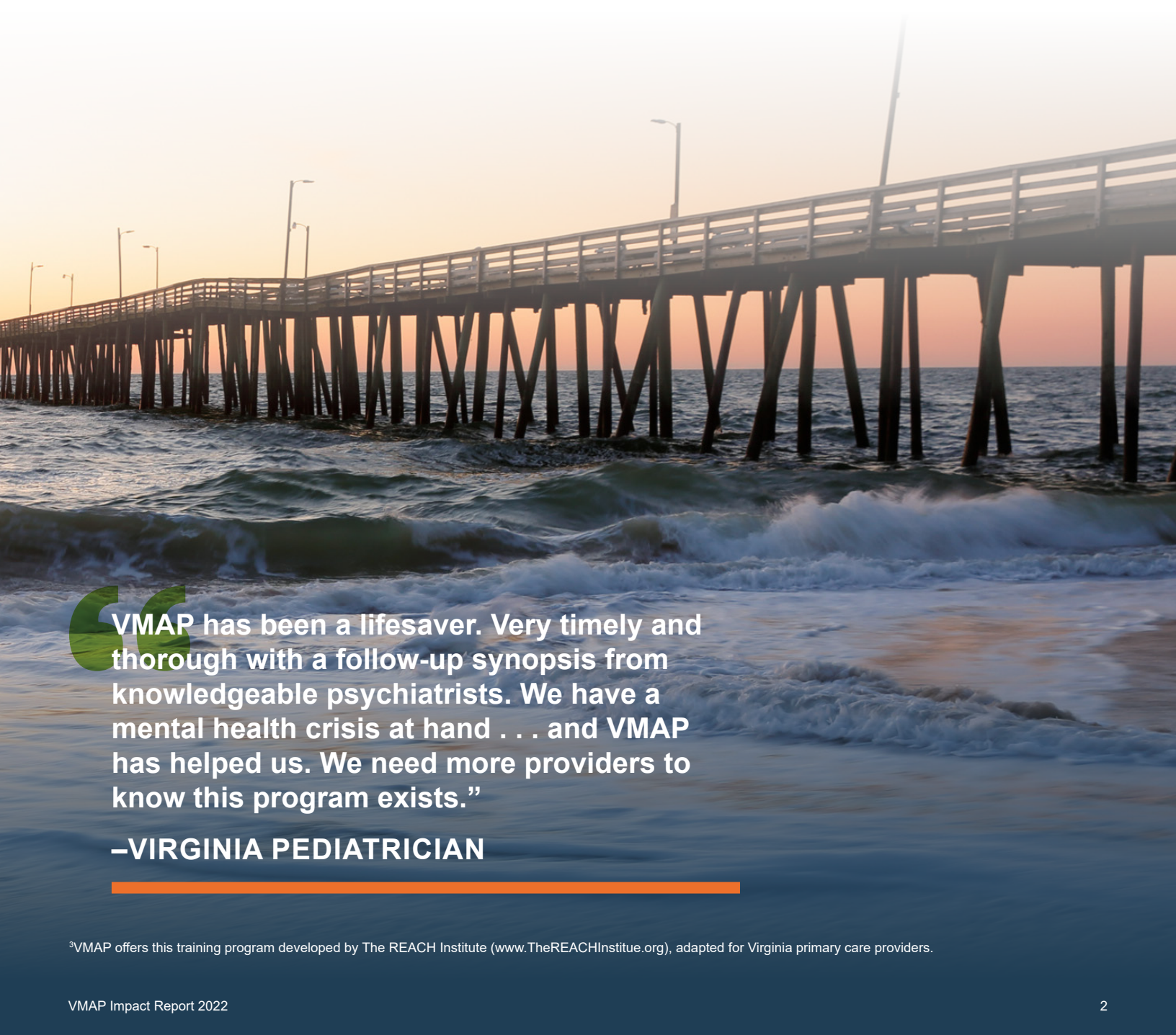
PROVIDER EDUCATION

VMAP offers a variety of pediatric mental health training and educational opportunities for PCPs through: 1) VMAP REACH Patient-Centered Mental Health in Pediatric Primary Care[3] (REACH PPP), 2) VMAP Project ECHO, and 3) VMAP QI Initiatives. **Since 2019 VMAP has:**

- ▸ **Executed 34** courses
- ▸ **Trained 831** PCPs through **22,083** hours of training
- ▸ **Seen 1,591** downloads of the VMAP Guidebook since it was published in June 2022

EVALUATION AND IMPACT

As part of the implementation process, VMAP conducts ongoing evaluation efforts in a variety of ways to assess and measure programmatic impact on providers. Using VMAP Line data, pre- and post-assessment data from trainings, and provider surveys, VMAP has triangulated significant findings that demonstrate **VMAP-using providers are better equipped to assess and treat pediatric mental health than other providers**.

> **"VMAP has been a lifesaver. Very timely and thorough with a follow-up synopsis from knowledgeable psychiatrists. We have a mental health crisis at hand . . . and VMAP has helped us. We need more providers to know this program exists."**
>
> **–VIRGINIA PEDIATRICIAN**

[3]VMAP offers this training program developed by The REACH Institute (www.TheREACHInstitue.org), adapted for Virginia primary care providers.

Funding and Partners

2022 Funding

- $445,000
- $170,000
- $6,800,000
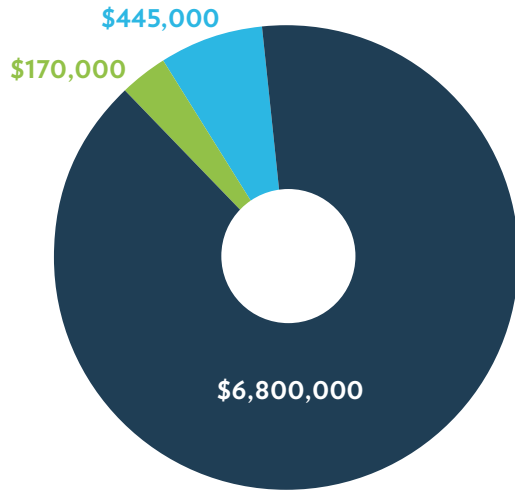
● **State General Funds** (via DBHDS)   ● **HRSA** (via VDH)

● **Other Funding** (grants, foundations, etc.)

Funding Utilization

6.15%

Provider education & training — 20.06%

MSVF Admin — 11.26%

Communications, Outreach & Engagement — 3.43%

Technology & Data — 6.99%

58.25% State Infrastructure, VMAP Line, and Hub Operations
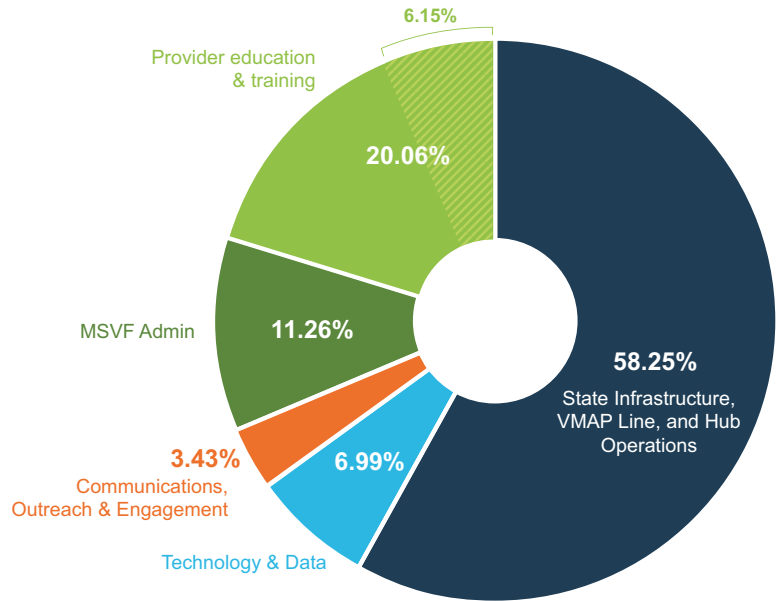
Funding Stream: ● State/DBHDS/MSVF   ◇ HRSA/VDH/VA-AAP

Partners and Funders

Virginia Department of Behavioral Health & Developmental Services

MSV℠ FOUNDATION

VDH VIRGINIA DEPARTMENT OF HEALTH — Protecting You and Your Environment

Virginia Chapter — INCORPORATED IN VIRGINIA — American Academy of Pediatrics — DEDICATED TO THE HEALTH OF ALL CHILDREN®

UVA Children's

INOVA HEALTH SYSTEM

The REACH Institute

VCU Health

OLD DOMINION UNIVERSITY®

STATE COUNCIL OF HIGHER EDUCATION FOR VIRGINIA

CENTRA

Mount Rogers COMMUNITY SERVICES

Healthy Minds FAIRFAX — Supporting Emotional Wellness in Youth and Families

Greater Lynchburg Community Foundation

CHKD

UNITE US

Past: Cigna — JENKINS FOUNDATION

What is VMAP?

VMAP is a statewide initiative that helps healthcare providers take better care of children and adolescents with mental health conditions through provider education and increasing access to child psychiatrists, psychologists, social workers, and care navigators.

How VMAP Works

VMAP ensures more children and adolescents have access to providers who are better equipped to manage their mental health.

Virginia Mental Health Access Program

Provider Education

Several education opportunities for primary care providers on screening, diagnosis, management, and treatment of pediatric mental health conditions.

REACH PPP

QI Projects

Project ECHO

Guidebook

The VMAP Line

Connects primary care providers to regional hubs that offer pediatric mental health consultation and care navigation to support patients 21 and under.

Child and adolescent psychiatrists

Licensed mental health professionals (psychologists and/or social workers)

Care navigators

HOW DOES VMAP WORK?

PCP Mental Health Education

PCP Calls VMAP

Regional Hub Team Completes Intake

Child Psychiatry Consult

Child Psychology Consult

Care Navigation

VMAP LINE'S 5 REGIONAL HUBS

Children's National Hospital

INOVA HEALTH SYSTEM

UVA Children's

VCU Health

Mount Rogers COMMUNITY SERVICES

CENTRA

CHKD

North *Launched October 2020*
East *Launched January 2021*
Southwest *Launched July 2021*
Central *Launched August 2021*
West *Launched February 2022*
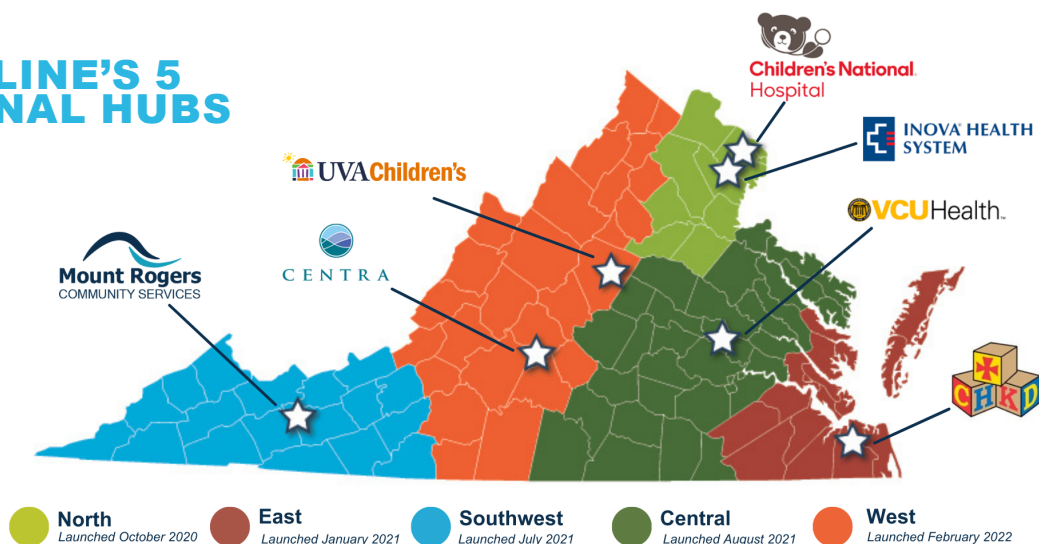
History

VMAP was created in **2018** by the Virginia Department of Health (VDH), in partnership with the Virginia Chapter of the American Academy of Pediatrics (VA-AAP), through a $445,000 Health Resources and Services Administration (HRSA) grant which helped: (1) establish a part-time VMAP Line offering PCPs consultations with CAPs, and 2) create VMAP's first pediatric mental health education programs for PCPs.

2019

$1.2 million in state funding was awarded to expand the VMAP Line to 40 hours a week and begin implementation of VMAP's regional hub model in the Northern and Eastern regions of the state. This would bring enhanced services to the VMAP line for those regions, including access to real-time consultation with local LMHPs and CAPs, and care navigation services for PCP patients and families.

2020

MSVF was contracted by the Department of Behavioral Health and Developmental Services (DBHDS) to serve as administrator of the program. VMAP then received an additional $4.2 million in state funding to continue expanding its provider education and regional hub services statewide.

2021

VMAP expands statewide through tripling its pediatric mental health education offerings and launching regional hubs throughout the state so that PCPs seeing patients 21 and under anywhere in Virginia can access regionally based VMAP services.

2022

An additional $1.4 million was awarded to VMAP in July 2022 through the Virginia General Assembly to expand VMAP to add services for PCPs caring for young children (age 0–5) through specialized training, consultation, and resource support.[4]

[4] Please note that "age 0–5" in this report refers to patients who are 0 to 5 years of age.

Internal Evaluation Data Collection

The evaluation process to assess VMAP impact and outcomes employs multiple data collection tools and techniques across various programmatic components to synthesize a wide range of findings. The main VMAP data sources compose the fundamental basis for all program-specific findings, outcomes, and significance testing used to measure VMAP goal attainment. **Please note that the percentages reported in this document are rounded to the nearest whole number and as a result, in some instances, may not equal 100% exactly.**
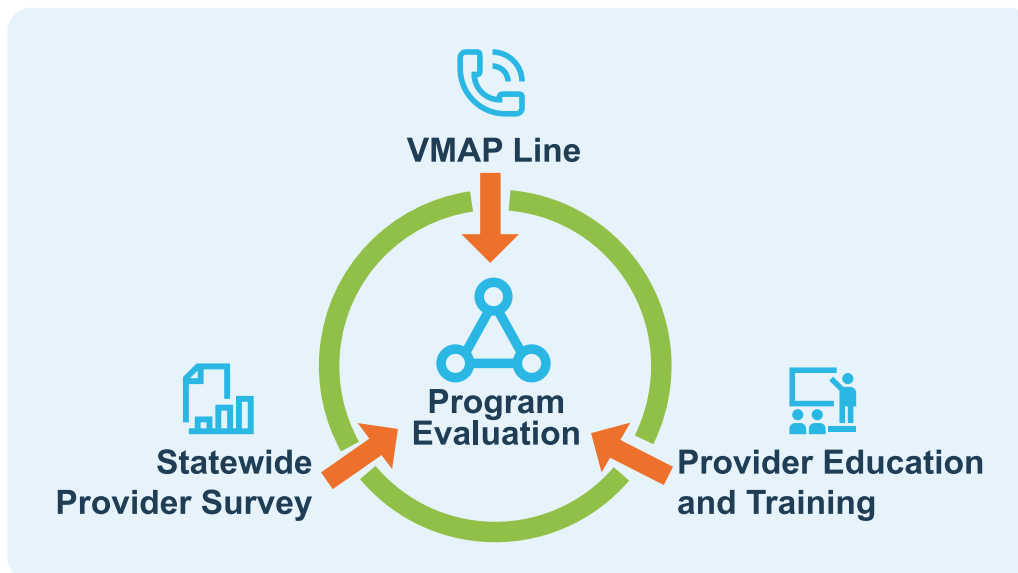
VMAP Line. Regional hub services accessed via the VMAP Line help PCPs better serve their patients by offering expert guidance on how to manage pediatric mental health. PCPs access VMAP's regional hub services by calling the VMAP Line and/or registering for VMAP, where they can consult with a CAP or LMHP, or receive care navigation services.

All longitudinal comparisons (i.e., year over year) made when referring to CAP, LMHP, and care navigation services include VMAP Line data beginning when it opened in August 2019 through December 2022. For this report and all future VMAP Impact Reports, Year 1 includes all calls from August 2019 through July 2020, Year 2 includes all calls from August 2020 through December 2021, and Year 3 includes all calls from January 2022 through December 2022. These time frames are also pertinent to provider education and training longitudinal trends.

Provider Education and Training. Three VMAP-sponsored trainings compose the core of VMAP provider education efforts: 1) VMAP REACH PPP, 2) VMAP Project ECHO, and 3) QI Initiatives. These trainings administer pre- and post-assessments to measure participants' change in perception, understanding, and confidence addressing several different types of pediatric mental health conditions and disorders. For more information regarding VMAP-sponsored trainings designed to help providers better serve their patients, visit Section IV.6.

VMAP Statewide Provider Survey. The VMAP team, in collaboration with its stakeholders and collaborating partners, implemented its first statewide survey to measure providers' (e.g., pediatricians, family medicine physicians, nurse practitioners, etc.) knowledge and capacity to assess and treat pediatric mental health concerns. This survey follows a Quasi-Experimental Design (QED) framework, allowing the comparison of providers' self-perceived abilities based on VMAP participation and exposure. Contextual knowledge around the design, administration, and analysis of the survey can be found in Section V.

Implementation, Operational Growth, and Programmatic Findings

The model on which VMAP is implemented has continued to expand to better serve Virginia's pediatricians and other PCPs who attend to youth age 21 and under. As VMAP received additional funds to expand services statewide and launched hubs in each region, it simultaneously implemented a variety of marketing strategies and intentional efforts to increase VMAP registration and overall exposure to providers throughout Virginia. Noticeable increases include: 1) calls to the VMAP Line, 2) consultations with VMAP mental and behavioral health professionals (i.e., CAPs, LMHPs), 3) care navigation requests, 4) types and number of pediatric mental health education offered to PCPs throughout the year. Additionally, processes surrounding VMAP leadership, internal communication, collaboration, and data collection have been streamlined to better serve the needs of Virginia providers, VMAP funders, and relevant stakeholders.

Early Childhood Expansion

In summer 2022, VMAP launched an early childhood expansion initiative to begin to address the mental and behavioral health needs of PCPs treating Virginia's youngest patients, specifically those age 0-5 years.

The early childhood expansion focuses on several key markers:

▸ **Extensive shortage** of developmental-behavioral pediatricians.[5]

▸ **15% of children** are impacted by developmental/behavioral concerns.[5]

▸ PCPs see children **at least 12 times** for well-child visits before the age of five.[6]

▸ PCPs seek **supports for recognizing and responding** to infant and early childhood mental health conditions.[6]

▸ In Virginia, wait times for autism screening and diagnosis can be **12–18 months**, causing families to lose critical intervention time.

▸ PCPs reported **needing training and resources** to support this population's needs.

To address this need, VMAP is scaling its existing VMAP Line to include an early childhood hub to help PCPs with patients age 5 and under, and expanding VMAP provider education into specialized early childhood topics. VMAP continues to conduct deeper analyses that specifically pertain to patients age 0–5 using data collected via the VMAP Line and education assessments to inform this expansion project, future programmatic changes, and provider education needs. To advise on this new initiative, VMAP has implemented an early childhood committee with clinical and subject matter experts.

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[5] Bridgemohan, C., Bauer, N. S., Nielsen, B. A., DeBattista, A., Ruch-Ross, H. S., Paul, L. B., & Roizen, N. (2018). A workforce survey on Developmental-Behavioral Pediatrics. Pediatrics, 141(3). https://doi.org/10.1542/peds.2017-2164
[6] Hagan, J. F., Shaw, J. S., & Duncan, P. M. (2017). Bright futures: Guidelines for health supervision of infants, children, and adolescents. Bright Futures/American Academy of Pediatrics.

Adding Specialization to VMAP Line

VMAP began adding multiple early childhood physicians (e.g., early childhood CAPs, developmental/behavioral pediatricians) to the VMAP Line. These early childhood physicians are available to consult with PCPs on patients age 0–5. By the end of 2022, VMAP had part time coverage of early childhood physicians available via the VMAP line. In 2023, VMAP will increase this coverage to 40 hours a week so that Virginia PCPs will have access to these early childhood specialists at all normal operating hours to help with their youngest patients.

Scaling Project ECHO Curriculum

VMAP launched its first specialized *Project ECHO* cohort using a tailored curriculum focused on early childhood topics. *VMAP Project ECHO: Birth-5 Deeper Dive* addresses infant and early childhood mental health problems as they present for busy primary care practices. Twenty-eight providers completed the first cohort in November 2022, and a second cohort will run in 2023.

Additionally, VMAP planned and recruited for a second early childhood *ECHO* to launch in 2023, *VMAP Project ECHO: Systems of Care for Kids*. This cohort will educate on community interventions and referral options for PCPs supporting families with young children.

Of the **3,886 VMAP Line calls**, **8%** were for patients age 0–5.

Of the **2,799 VMAP Line consults**, the percent of patients age 0–5 increased from **6%** in Year 1 to **9%** in Year 3.

Of the **2,036 care navigation calls** since November 2020, **9%** are for patients age 0–5.

Operational Updates

In 2022 VMAP transitioned all data collection for the VMAP Line to a Customer Relations Management (CRM) platform that allows real-time program management, data visualization, and reporting. This new custom-designed system provides a more streamlined, integrated approach that better meets the needs of the entire program and relevant stakeholders. After launching the new platform for the VMAP Line in 2022, VMAP began work on integrating its provider education program data into the existing VMAP Line data. This merge will be finalized in 2023.

As VMAP provider education continued to grow, VMAP added an Education Manager to the Implementation Team in 2022. This role supports development, coordination, and outreach of all VMAP educational programs across multiple agencies and team members.

VMAP Strategic Plan 2021—2024

GOAL 1 **Scaling**	GOAL 2 **Demonstrating Impact**	GOAL 3 **Quality Assurance**
VMAP services are available and accessible in all five regions of the Commonwealth.	Implement a framework for measuring and reporting data to demonstrate impact and inform equitable operational decision making.	Develop process by which VMAP will measure, analyze, and evaluate performance to drive continuous and equitable quality improvement.
GOAL 4 **Enhancing**	GOAL 5 **Brand Awareness**	GOAL 6 **Sustainability**
Expand target populations, partnerships, and resource delivery approaches to equitably achieve scale across the Commonwealth's diverse communities.	VMAP is the known source for increasing Mental Health accessibility among providers serving children and adolescents in the Commonwealth.	Implement financing strategies for continued enhancement of access and impact across the Commonwealth.

Leadership and Committees

Executive and Leadership Team

The Leadership Team meets quarterly and consists of staff and physician leads around the state who facilitate the various elements of the program. VMAP's Executive Team sits on the Leadership Team and meets in between quarterly leadership meetings.

Care Navigation Regional Advisory Committees

These committees provide regional communication between community mental health services and VMAP's Regional Hub teams in order to share local service updates, discuss community concerns and trends related to mental and behavioral health, and explore advocacy opportunities. Community service boards, private mental health programs, family advocates, and other providers are represented. VMAP has active advisory committees in its Northern, Eastern, and Central regions and will be adding advisory groups to the remaining regions in 2023.

Equity Advisory Committee

The Equity Advisory Committee supports the program by broadening perspectives, strengthening outreach, and advocating for underserved populations. The committee advises on policies and programming that intentionally promotes racial, economic, and access equity within VMAP services and beyond.

Research and Publication Committee

The Research and Publication Committee was formed in 2022 and is focused on sharing VMAP's successes through a variety of conference presentations and journal manuscripts on a regional, state, and national scale.

Provider Education Workgroup

The Provider Education Workgroup consists of internal and external stakeholders who advise and support VMAP's educational programs, curriculum, and planning. This workgroup was the primary driver of the development and publication of the VMAP Guidebook in 2022.
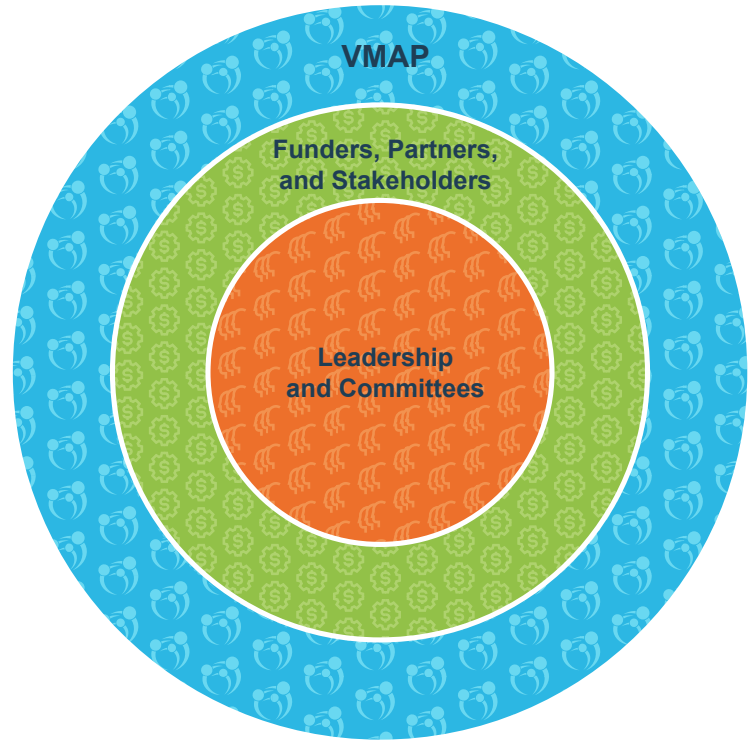
Marketing and Outreach

VMAP implemented a strategic marketing plan in 2022 to define the strategies used to engage its audience and to achieve specific program goals by December 2023. The plan includes key performance indicators, identifies VMAP's stakeholders, outlines content initiatives and strategies tailored to the various regions in the state, and defines key messaging to promote consistent language across all marketing and outreach efforts.

VMAP's audience can be characterized by four main groups: 1) PCPs treating children and adolescents, 2) stakeholders (e.g., government agencies, youth and family advocates, funding partners, medical associations, and VMAP staff), 3) media, and 4) patients and families.

VMAP is engaged in the following social media channels and has increased page followers across all accounts since January 2022 through December 2022.

Facebook	Twitter	LinkedIn	Instagram
37%	**125%**	**37%**	*Launched in May 2022 - still establishing baseline*

Scan the QR code to follow VMAP,
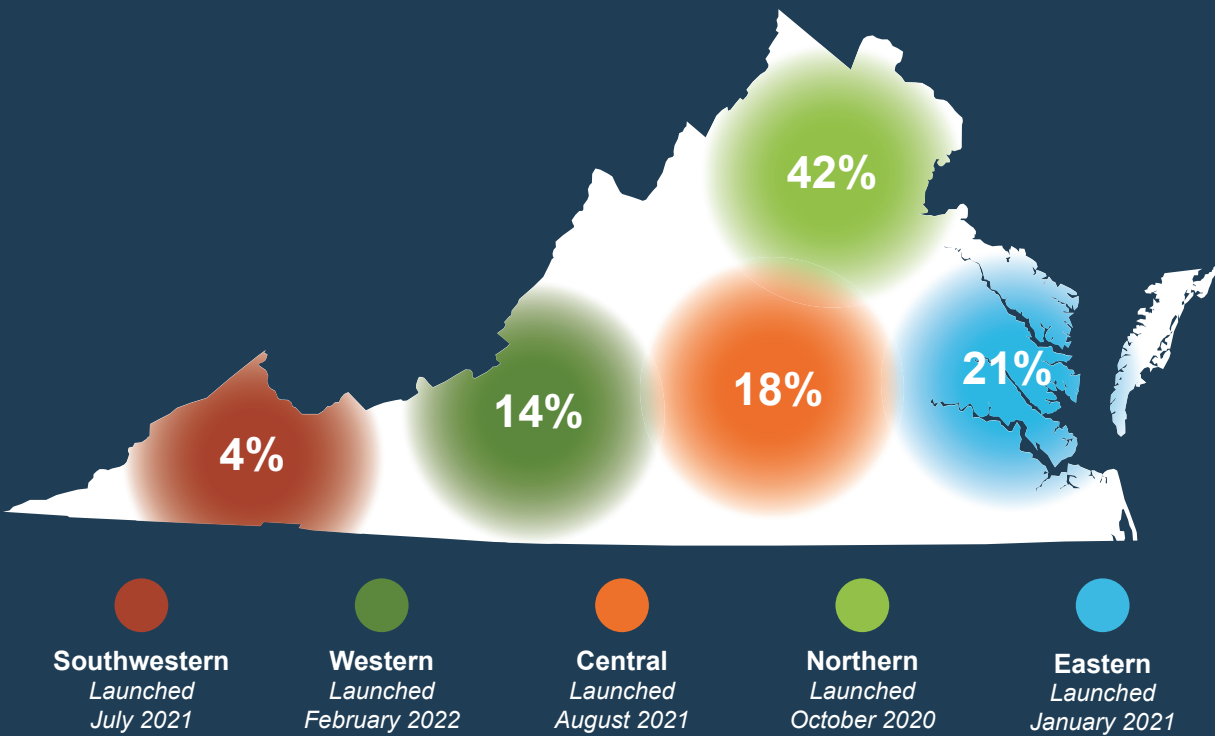and tag us through @VMAPVA

Provider Registration

Formal registration with VMAP is recommended and is beneficial to providers for many reasons. First, having provider information in VMAP's data system streamlines and expedites the intake process when a PCP calls the VMAP Line. Second, registered providers receive program updates and information including upcoming VMAP educational opportunities. Third, registration helps the VMAP Implementation Team and state funders understand VMAP's reach and opportunities for future outreach.

VMAP views provider registration and engagement as a multi-tier process. In 2022, VMAP staff presented at 12 events throughout the state, opportunities that generate interest in VMAP and often lead to newly registered providers. Additionally, LMHP teams engage with PCPs in their region to share information about the program and regularly provide "Lunch and Learn" events at practices. Provider registration across the state is largely reflective of population density. VMAP has a special focus on establishing an equitable foothold of registered providers in the more rural areas of Virginia as it has expanded regional hubs statewide. By the end of 2022 VMAP had 1,053 registered providers, 38% of whom registered in 2022. Of all providers registered with VMAP, 75% are physicians and 21% are nurse practitioners. Most providers registered (85%) with VMAP specialize in pediatrics. VMAP's last two regions to launch saw significant growth in 2021 and 2022, with the Western region increasing provider registration by 154% between Year 1 (n=43) and Years 2 and 3 (n=109), and the Southwestern region increasing 218% between Year 1 (n=11) and Years 2 and 3 (n=35).

Registered Provider Representation Across Virginia

Southwestern	Western	Central	Northern	Eastern
Launched July 2021	*Launched February 2022*	*Launched August 2021*	*Launched October 2020*	*Launched January 2021*

Of VMAP's **1,053** registered providers,
38% registered in 2022.

Of all providers registered with VMAP...

21% Nurse Practiioners	75% Physicians

The remaining types of providers registered (4%) include PAs and providers who select 'other.'

Education and Training

In partnership with VA-AAP, VMAP offers a wide range of educational and training opportunities to Virginia providers on child and adolescent mental and behavioral health. Providers who wish to receive CME or MOC credits may pay a reduced rate for some VMAP education opportunities. In addition to trainings that offer providers CME or MOC credits such as VMAP REACH PPP, VMAP Project ECHO, and QI Initiatives, other resources such as the VMAP Guidebook and several VMAP-sponsored webinars and discussion forums provide a diverse set of opportunities to bridge knowledge gaps among Virginia's practicing clinicians.

Virginia Chapter
INCORPORATED IN VIRGINIA
American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN®
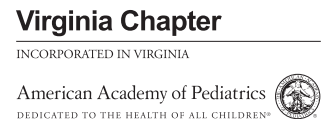
To date, VMAP's education has trained **831 participants** through **22,083 education hours** across **701 unique providers**. Additionally, 96 providers have participated in at least two VMAP educational programs, and six have participated in all three VMAP educational programs.

	VMAP Education in 2022	VMAP Education All Time
Total Trained	**246**	**831**
VMAP REACH PPP	138	471
VMAP Project ECHO	95	247
QI Initiative	13	113

VMAP Trained Recognition for Providers

VMAP launched a recognition program in Fall 2022 to recognize provider completion of one or more of VMAP's intensive mental health educational programs. This recognition indicates completion of at least 20 hours of VMAP training in pediatric mental health and demonstrates individual and practice commitment to improving their ability to serve the mental health needs of their patients. Providers are sent a digital badge they can display on their websites or personal pages.

REACH PPP

VMAP offers REACH PPP (Patient-Centered Mental Health in Pediatric Primary Care), developed by The REACH Institute (www.TheREACHInstitute.org) and adapted for Virginia PCPs. This program increases clinicians' comfort with assessing, diagnosing, and treating pediatric mental health concerns through a **dynamic three day, 16-hour interactive course**. It's followed by a 6-month, case-based distance learning program in which participants join 12 bi-monthly conference calls with local primary care and child/adolescent psychiatry experts to learn how to manage pediatric mental health issues encountered in daily practice. Participants also receive custom-designed toolkits with guides, assessment instruments, dosing and side effect charts, medication comparison tables, and handouts for patients and parents.

"If you are a pediatrician, family doctor, NP, or PA in Virginia that sees kids, **you absolutely must take the VMAP REACH PPP training**. It is state funded and low cost, with an enormous return on investment — changing the lives of children."

Alexis Aplasca
DBHDS Chief Clinical Officer & Participant

For each course, the VMAP REACH PPP education team administers three separate assessments over a 6-month period aimed at triangulating participants' shift in knowledge and comfort addressing pediatric mental and behavioral health. Since the VMAP REACH PPP training program began collecting assessment data in 2020, there have been 402 participants who have completed at least one of the two assessments offered.[7] Each assessment asks respondents to rate themselves across nine specific mental and behavioral health conditions *(see to the right)* within the following four contexts:

The nine specific mental and behavioral health conditions include:

ADHD	Autism and Autistic Spectrum Disorder
Anxiety Disorders	
Major Depressive Disorders	Suicide Risk
Bipolar Disorder	Aggression
Conduct Disorder	Comorbid Psychiatric Disorders

Knowledge in assessing and diagnosing	Comfort in assessing and diagnosing
Knowledge in treating	**Comfort in treating**

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[7] In some instances, VMAP REACH PPP participants completed a post- or 6-month post-assessment but not a pre-assessment. This causes disparate numbers between those that complete the assessments and total participants.
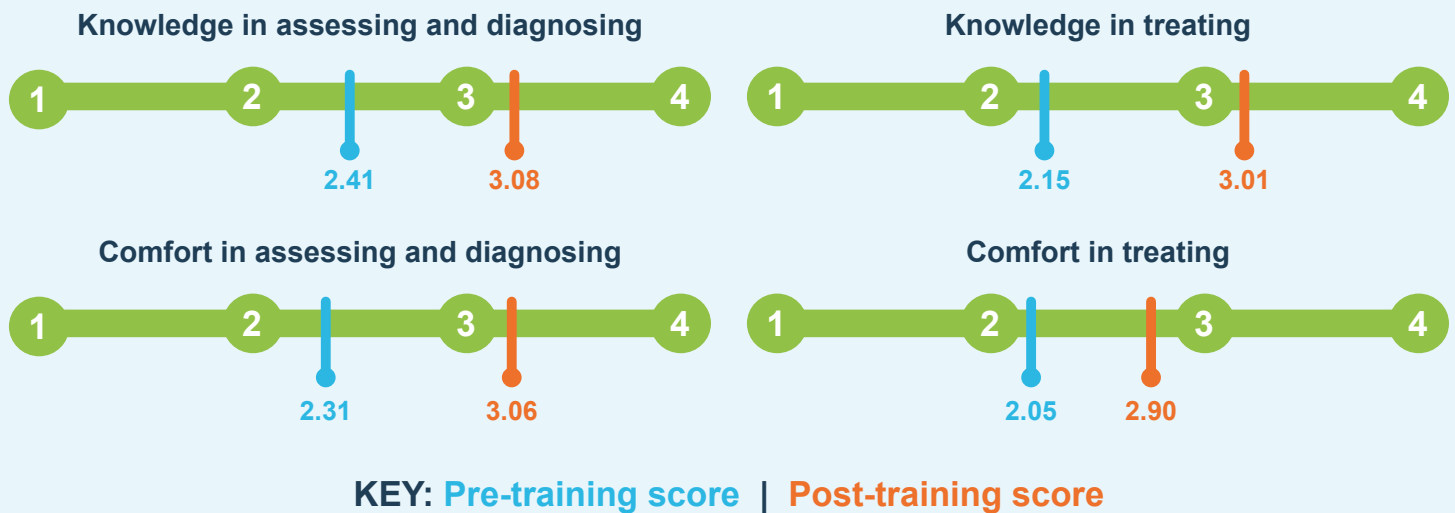
> "It's clear that this [VMAP REACH PPP] is **a very valuable experience**. It's something that me and my independent small practice would not have been able to afford without the support of VMAP."
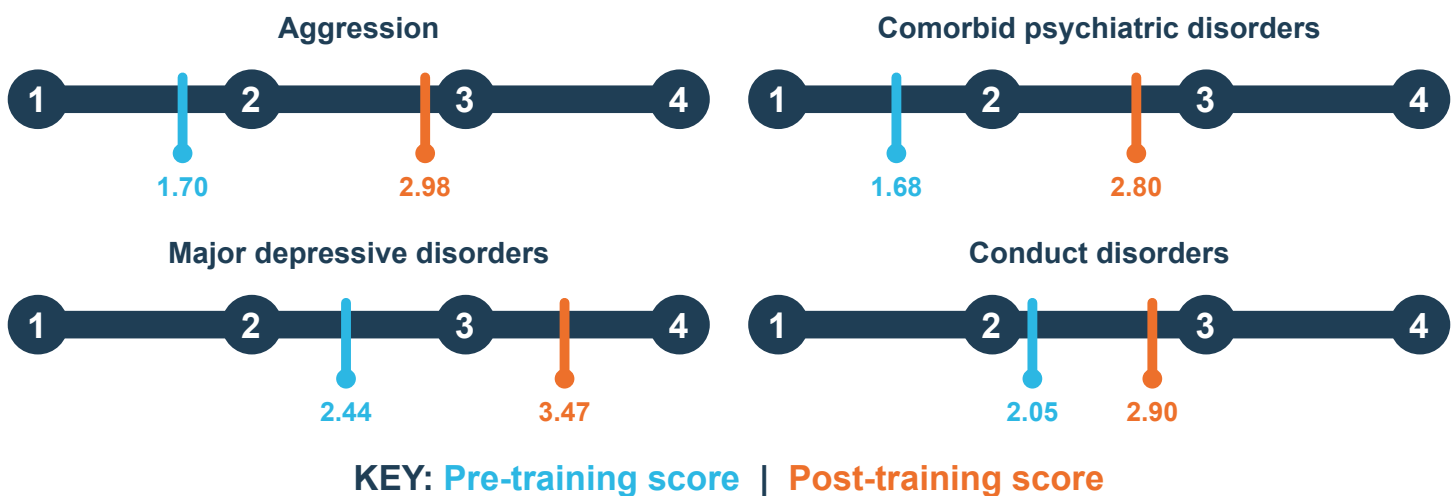>
> **Virginia Family Medicine Physician**

To better understand participant knowledge and comfort levels within each assessment, as well as how those levels change over time, the VMAP REACH PPP assessments employ a 4-point Likert scale to measure each of the nine mental and behavioral health conditions: *1 – Not at all, 2 – Small amount, 3 – Moderate amount,* and *4 – Great deal*. Only participants who completed the pre- and post-assessments were used to measure the training's impact on providers' understanding regarding the nine mental and behavioral health conditions (*n*=254).

After aggregating the mean scores of each of the nine mental and behavioral health conditions across the four contexts individually, statistically significant increases from pre-assessment to post-assessment scores were observed across Years 1 through 3:

Knowledge in assessing and diagnosing

1 — 2 — 3 — 4
2.41   **3.08**

Knowledge in treating

1 — 2 — 3 — 4
2.15   **3.01**

Comfort in assessing and diagnosing

1 — 2 — 3 — 4
2.31   **3.06**

Comfort in treating

1 — 2 — 3 — 4
2.05   **2.90**

KEY: Pre-training score | Post-training score

In Year 3 alone, pre- and post-assessment scores (*n*=97) found the most noticeable increases in provider understanding were generally within the context *Knowledge in treating mental and behavioral health conditions*. The most statistically significant increases between pre- and post-assessment scores within this context were for *Aggression* (1.70 to 2.98), *Comorbid psychiatric disorders* (1.68 to 2.80), *Major depressive disorders* (2.44 to 3.47), and *Conduct disorders* (1.60 to 2.63).

Aggression

1 — 2 — 3 — 4
1.70   **2.98**

Comorbid psychiatric disorders

1 — 2 — 3 — 4
1.68   **2.80**

Major depressive disorders

1 — 2 — 3 — 4
2.44   **3.47**

Conduct disorders

1 — 2 — 3 — 4
2.05   **2.90**

KEY: Pre-training score | Post-training score

Project ECHO

VMAP's Project ECHO helps PCPs integrate best practices in pediatric and adolescent mental and behavioral health care into their practice via monthly didactics and case-based virtual learning sessions. Project ECHO is a lifelong learning and guided practice model that revolutionizes medical education and increases workforce capacity to provide best-practice specialty care and reduce gaps in care. The heart of the Project ECHO model is its hub-and-spoke knowledge-sharing networks, led by an interdisciplinary team of experts who conduct virtual clinics with participant providers. In this way, participants learn to provide excellent specialty care to patients in their own communities. VMAP offers Project ECHO on pediatric mental and behavioral health year round, organized in regional and topic-based cohorts of participants to facilitate resource and knowledge-sharing.

> "I am **so thankful for this time** and for everyone involved in VMAP Project ECHO. It was an excellent learning experience."
>
> **Virginia Provider**

In 2022 (Year 3) VMAP Project ECHO completed four cohorts that trained 95 providers on a variety of pediatric mental health topics. Participants are asked to complete pre- and post-assessments, aimed to measure understanding and utilization across a variety of topics; for instance, providers' self-perceived confidence in assessing and managing patients, frequency in applying behavioral health screening tools, and providers' ability to access reliable community and family resources. In year 3, 52 participants completed a post-assessment.

Participants who completed the post-assessment in Year 3 were asked to indicate their confidence level in assessing and managing specific mental and behavioral health conditions for children or adolescents using a 5-point Likert scale: *1 – Not at all confident, 2 – Slightly confident, 3 – Somewhat confident, 4 – Fairly confident, 5 – Completely confident.*[9] The conditions which reported the highest percentage of participants who selected either *Fairly confident* or *Completely confident* regarding their ability to assess included *Depression* (90%), *ADHD age 6–12* (89%), and *ADHD age 13 and older* (85%). Similar trends were discovered when reporting the ability to manage *ADHD age 6–12* (85%), *ADHD age 13 and older* (81%), and *Anxiety* (81%).

Participants who completed a post-assessment (*n*=52) in Year 3 were also asked *"Which level of care best reflects your ability to diagnose pediatric mental health symptoms?"* with nearly two-thirds (60%) indicating *Intermediate care* and one-quarter (27%) indicating *Advanced care*. Additionally, participants were also asked, *"Which level of care best describes your ability to manage pediatric clinical care?"* with three-quarters (75%) selecting *Intermediate care* and eight percent selecting *Advanced care.*

Perceived Ability to Diagnose and Manage Pediatric Mental Health Symptoms, 2022

Which level of care best reflects your ability to diagnose pediatric mental health symptoms?
- Intermediate care: 60%
- Advanced care: 27%

Which level of care best describes your ability to manage pediatric mental health clinical care?
- Intermediate care: 75%
- Advanced care: 8%
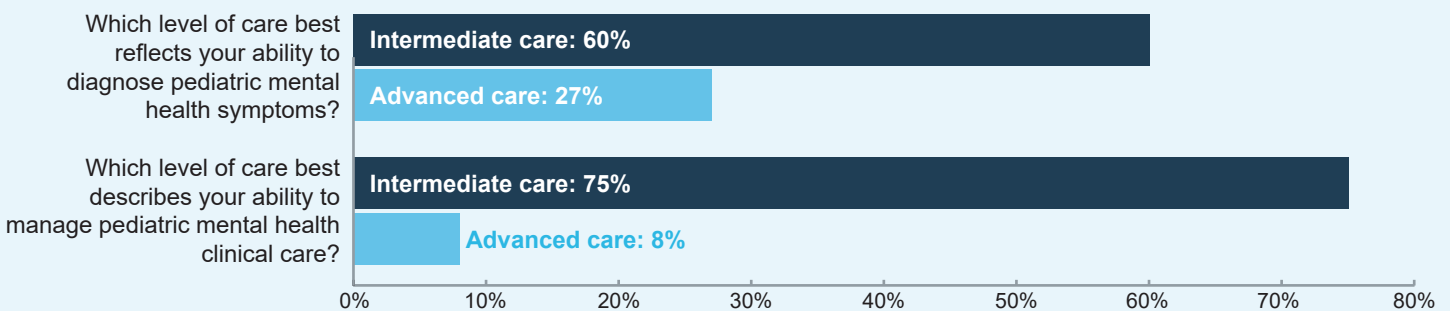
Perceived Change in Screening Tool Usage, 2022

	Pre	Post
GAD-7 (anxiety)	46%	63%
SCARED (anxiety)	71%	85%
ASQ (suicidality)	34%	48%

The frequency in which screening tools are employed at least once a month by Project ECHO participants increased over time as indicated by pre- and post-assessment responses in Year 3. The most significant changes can be found for the GAD-7, in which the percentage of providers who used the screening tool increased from 46% to 63%, SCARED 71% to 85%, and ASK Suicide Question (ASQ) 34% to 48%.[9]
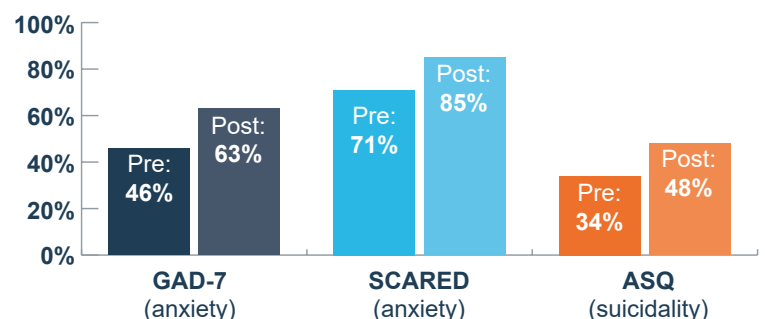
[8] Due to the rollout of new instruments, some pre- and post-assessment comparisons cannot be made in this Impact Report but will be made in future reports.

[9] It should be noted that this question is presented in a 4-point Likert scale (*1: Never, 2: 1 time per month, 3: 2-5 times per month,* and *4: 6 times a month or more*) but was recalculated to a binary format for analysis in which the respondent 1) never used the screening tool or 2) had used the screening tool.

In terms of how helpful the VMAP Project ECHO training was among those who completed the post-assessment in Year 3, 79% and 73% found it to be either *Very helpful* or *Extremely helpful* in improving their ability to diagnose pediatric mental health symptoms or manage their pediatric mental health problems, respectively.

VMAP Project ECHO Helpfulness, 2022

Improved my ability to diagnose pediatric mental health symptoms.
Very helpful or *Helpful*: 79%

Improved my ability to manage pediatric mental health problems.
Very helpful or *Helpful*: 73%

0% 10% 20% 30% 40% 50% 60% 70% 80%
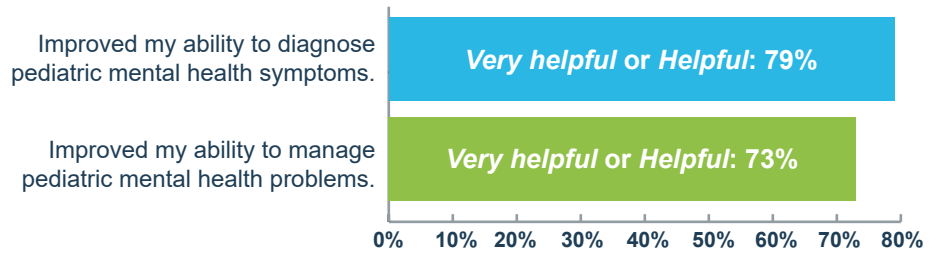
QI Initiatives

VMAP's 2022 QI Initiative was designed to improve provider screening for social and emotional drivers of health in children age 0–5 using the SEEK form and other social/emotional screening tools. Through collaboration, providers treating children and adolescents work together to improve screening, management, and referral processes. Participants work with a QI coach for guided improvement work.

As reported in the 2022 Screening Quality Improvement Final Report in December 2022, over **550 patient visits** were impacted by this QI Initiative across all participating practices, and **428 SEEK screens** were completed, with **67 of those positive**. Practices that identified causes of positive screens were able to make specific and informed referrals for those patients. Positive SEEK screens saw *Food insecurity* (19) and the *Other* category (20) as being the top two reasons, with the *Other* category including "poison control", "smoke alarms", and "tobacco use".

"I personally learned a lot from this project and certainly feel that it was **a game-changer for me and my office**. It was very organized, very educational, and very well done."

Virginia Pediatrician

The targeted outcome for this project – generating referrals for positive SEEK screens – was achieved. Families with positive SEEK screens consistently received referrals or linkages to community resources. All practices saw improvement regarding their ability to implement or increase SEEK and social/emotional screenings.

Guidebook

Published in June 2022, the VMAP Guide for Promoting Child and Adolescent Behavioral and Mental Health in Primary Care (VMAP Guidebook) is a compilation of evidence-based practices, up-to-date resources, and practical knowledge specifically geared toward pediatric and adolescent healthcare providers.

"Excellent resource [VMAP Guidebook]! So happy to have **all of that information** in one place!"
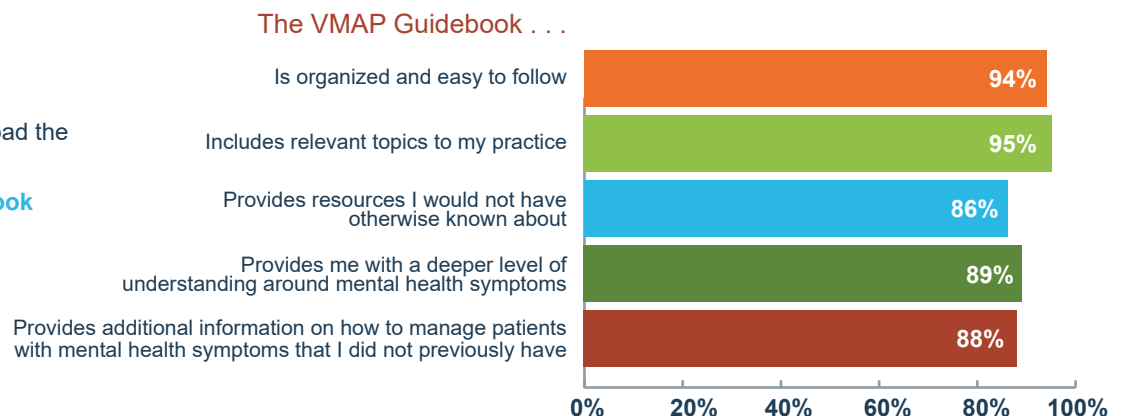
Virginia PA

The VMAP Statewide Provider Survey gathered data surrounding respondents' awareness, utilization, and overall perceptions of the VMAP guidebook and its ability to support their work with children who have mental and behavioral health concerns. Of the 374 respondents in the VMAP Statewide Provider Survey, 42% (*n*=157) reported being aware of the VMAP Guidebook, and of the 157 providers who were aware of it, 59% (*n*=93) indicated using it in their work. Providers who used the VMAP Guidebook in their work were asked additional questions surrounding the organization, framework, and applicability of the document using a 5-point Likert scale: *1 – Do not agree, 2 – Slightly agree, 3 – Somewhat agree, 4 – Mostly agree, 5 – Strongly agree.*

Scan the QR code to download the VMAP Guidebook!
www.VMAP.org/guidebook

VMAP Guidebook Feedback, 2022

The VMAP Guidebook . . .

Is organized and easy to follow — 94%

Includes relevant topics to my practice — 95%

Provides resources I would not have otherwise known about — 86%

Provides me with a deeper level of understanding around mental health symptoms — 89%

Provides additional information on how to manage patients with mental health symptoms that I did not previously have — 88%

0% 20% 40% 60% 80% 100%

Note: these percentages include "Mostly Agree" and "Strongly Agree" response options.

VMAP-Sponsored Education and Other Events

VMAP has received additional funds from professional organizations and associations to facilitate educational offerings for their associated providers. Additionally, it also provides other outreach, presentations, seminars, and tables with relevant provider groups and interested stakeholders on an ongoing basis. VMAP has led numerous talks and/or education sessions with the following groups:

State Council of Higher Education for Virginia (SCHEV)	National Association of Pediatric Nurse Practitioners (NAPNAP)	Virginia Community Healthcare Association (VCHA)
Virginia Task Force on Primary Care (VTPC)	Virginia Academy of Family Physicians (VAFP)	Virginia Association of Community-Based Providers (VACBP)
National Network of Child Psychiatry Access Programs (NNCPAP)	Virginia Academy of Physician Assistants (VAPA)	Virginia Health Care Foundation (VHCF)
Virginia Council of Nurse Practitioners (VCNP)	Virginia Association of Free and Charitable Clinics (VAFCC)	

In 2022, VMAP was contacted by members of SCHEV requesting a mental health training for clinicians practicing at Virginia college and university student health centers. After a survey was sent out to these university health center clinicians (e.g., family medicine physicians, nurse practitioners, PAs, etc.), it was determined that their greatest need for this learning opportunity centered around managing anxiety. In June 2022, two VMAP faculty members facilitated a 90-minute virtual webinar for SCHEV titled *Managing Anxiety in College-Aged Youth*, in which 62 providers attended and received CME credit.

SCHEV Webinar Feedback, 2022

When asked in a post-webinar survey:

70%

Almost 70% of participants said the webinar increased their *Ability in assessing and diagnosing anxiety in college-aged youth* **a Significant or Very significant amount**

100%

100% of participants said the overall quality of the webinar was ***Very good* or *Excellent***

In 2023, VMAP is planning two new education events including the VAFP Winter Family Medicine Weekend where VMAP will facilitate two separate continuing education sessions on *Managing Anxiety in College-Aged Youth* and *Addressing the Barriers to Pediatric Mental Health*.

In April 2023, VMAP will attend the UVA Children's and the UVA Department of Pediatrics 43rd Annual Birdsong Pediatric Conference. The VMAP education team was asked to design a 2-hour workshop including four separate sessions focusing on distinct mental health topics:

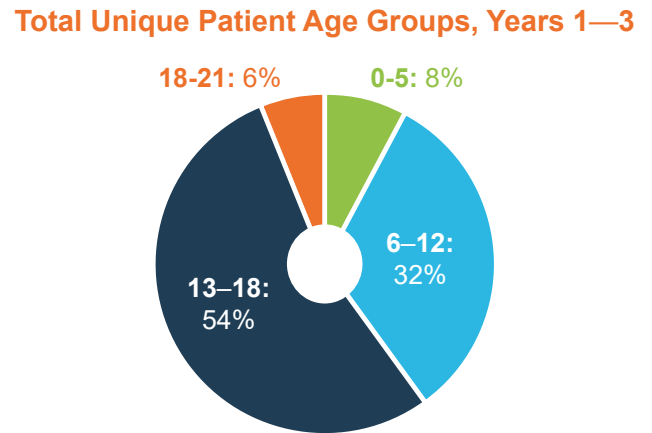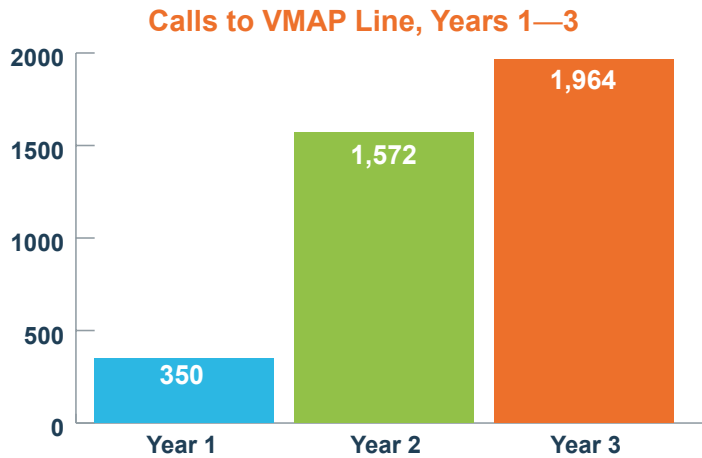|	
1 Teen suicidality and safety planning	2 Approaches to aggression in the preschool and the older child
3 Anxiety and depression pharmacology in teenagers	4 Choosing the best assessment tool

Participants will rotate through all four sessions, each led by a PCP and a behavioral health clinician.

VMAP Line

The VMAP Line operates weekdays during regular business hours (9am–5pm). When PCPs call the VMAP Line, they are typically connected with a VMAP LMHP or care navigator in their region. PCPs also have the option to schedule a call at a time most convenient to them through VMAP's website. After providing some brief intake information regarding patient needs, PCPs are connected to consultation support or resources. Consultations with a CAP or LMHP occur within 30 minutes of PCP request, and care navigation support is initiated with families within 2 business days. PCPs also receive follow-up communication regarding any recommendations.

There have been **3,886 calls** since the VMAP Line began, with 350 in Year 1, 1,572 in Year 2, and 1,964 in Year 3. Across **3,360 unique patients**, the most common age group represented is that of 13–18-year-olds (54%) and 6–12-year-olds (32%). There has been an increased presence of unique patients in the 0–5 age range, starting at 6% in Year 1, 7% in Year 2, and 9% in Year 3.[10]

Calls to VMAP Line, Years 1—3

Total Unique Patient Age Groups, Years 1—3

- 18-21: 6%
- 0-5: 8%
- 6–12: 32%
- 13–18: 54%

Total Calls
3,886

Total Unique Providers Across VMAP Line 767

Total Unique Patients 3,360

Provider Type

- PA: 2%
- Other: 2%
- NP: 18%
- Physician (MD, DO): 78%
- Pediatrics: 89%
- Family Practice: 7%
- Medicine & Pediatrics: 2%
- Other: 2%

Insurance Status

- Tricare: 5%
- Uninsured: 2%
- Medicaid: 38%
- Private: 55%
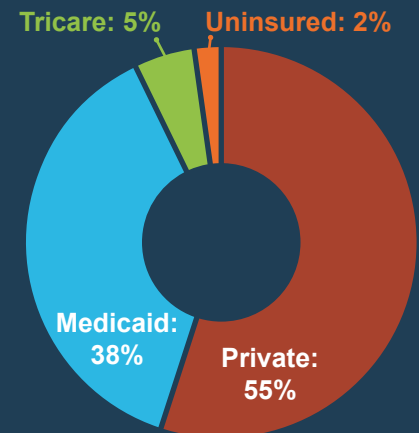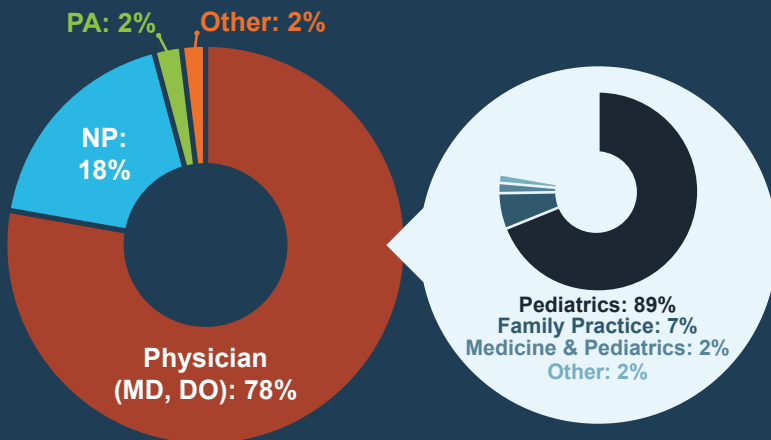
[10] Patient "age at intake" is calculated in VMAP's data system using the first date in which a patient is referenced by the provider calling for the first time.

VMAP Line Consultations

Of the 3,886 VMAP Line calls, 2,799 consultations with CAPs and/or LMHPs have been provided to Virginia PCPs since the VMAP Line opened in August 2019, with 316 in Year 1, 1,301 in Year 2, and 1,182 in Year 3.[11] Of the 113 post-VMAP Line surveys, **96% of providers** reported they were *Extremely likely* to use the VMAP Line for consultation again.
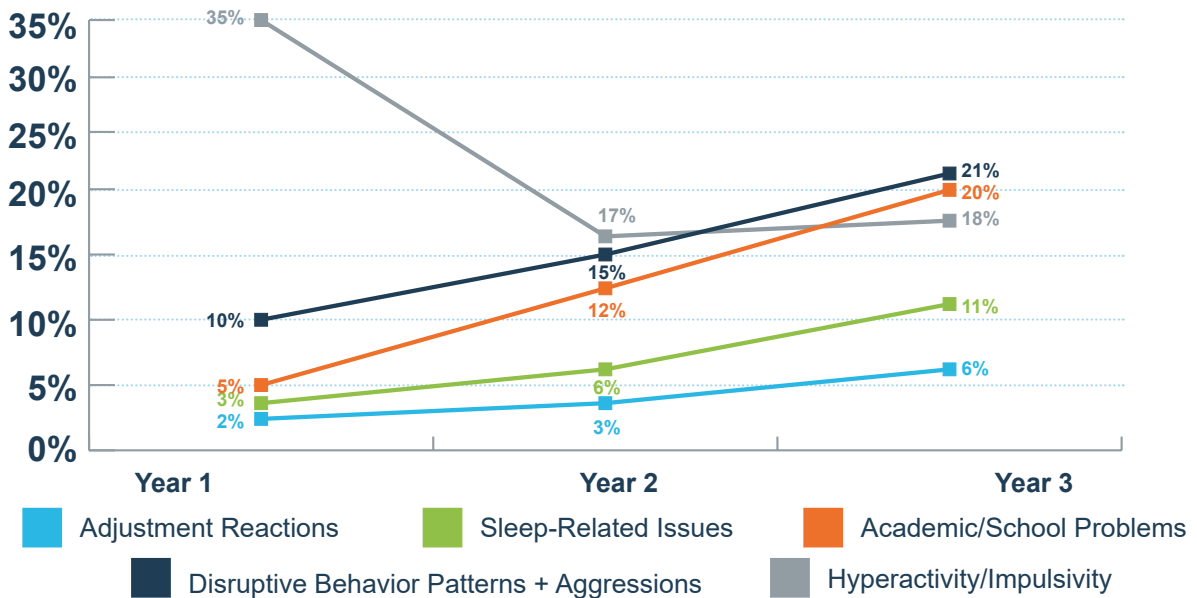
As part of the CAP and LMHP consultation process, providers are asked to share specific concerns they have for the patient they are calling to support. Across all VMAP Line consultations, there have been statistically significant increases in the prevalence of providers reporting a concern across five of the possible 26 options over the past three implementation years:

Provider Concerns for Patient Trends, 2020 — 2022

Legend:
- Adjustment Reactions
- Sleep-Related Issues
- Academic/School Problems
- Disruptive Behavior Patterns + Aggressions
- Hyperactivity/Impulsivity

Nearly **one-third of providers (30%)** across all **2,799 VMAP Line consultations** indicated a **general safety concern for their patient**. Furthermore, there has been an increase in providers reporting a general safety concern, at 24% in Year 1, 31% in Year 2, and 30% in Year 3.

Providers report the screening tools they used for each patient they call about in the VMAP Line, which is tracked across every consultation. Across the 2,799 consultations provided in Years 1 through 3, the percentage of providers who reported having used a *Depression, Anxiety,* or *ADHD* screening tool for that patient was 40%, 33%, and 12%, respectively. When observing screening tool usage longitudinally from Year 1 through Year 3, a statistically significant increase can be seen for each:

Provider Screening Tool Usage Trends, 2020 — 2022

Legend:
- ADHD
- Anxiety
- Depression

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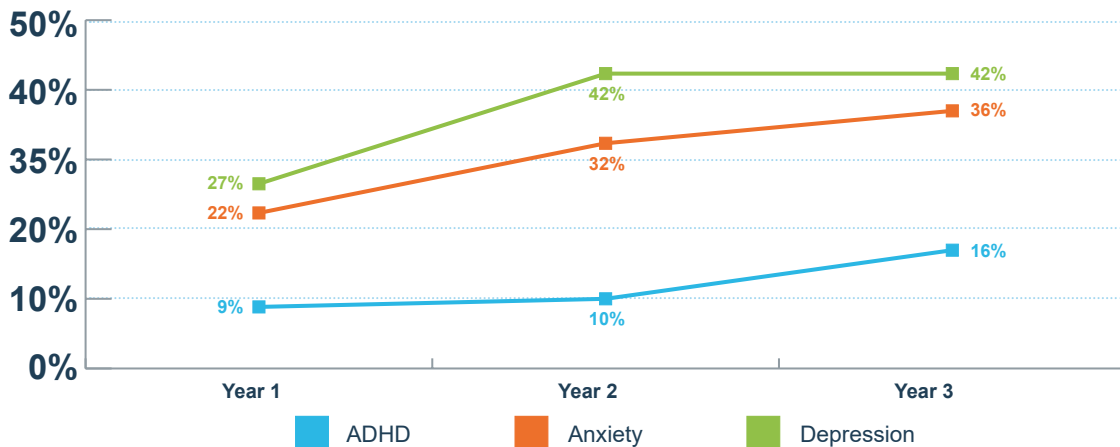
[11] Please note that time frames for each of the three years are as follows:
Year 1 (August 2019 - July 2020), Year 2 (August 2020 — December 2021), and Year 3 (January 2022 — December 2022).

Care Navigation Case Overview

A total of **2,036 calls** for care navigation have been received since the VMAP Line began offering these services in November 2020, and have significantly increased year over year beginning with 10 in Year 1, 685 in Year 2, and 1,341 in Year 3.

When looking at all care navigation calls, nearly two-thirds (59%) represent *Females*, an 18-percentage-point difference compared to *Males* (41%). Additionally, there was an even distribution between patients insured through *Private* (49%) or *Medicaid* (45%) insurance. The age groups most predominantly called about in care navigation include: *11–15* (44%), *16–18* (23%), and *6–10* (19%).
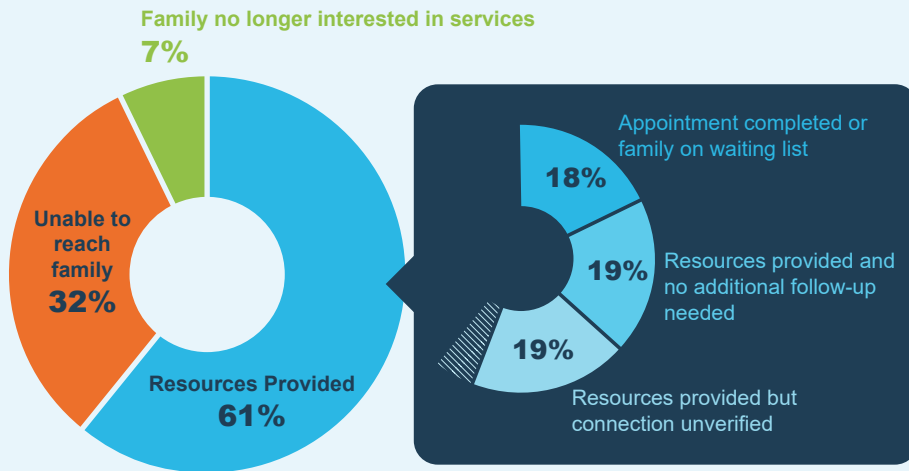
Of the 2,036 care navigation cases, **three-quarters (78%) resulted in the care navigator providing resources** directly to *Both PCP and Family*. In terms of the types of referrals provided, the most common included *Counseling/Therapist* (45%), *Non-VMAP psychiatrist* (29%), and *Psych testing* (6%). Nearly three-quarters (70%) of all care navigation cases were closed by the end of 2022, and of those closed cases 61% received resources. In 32% of the closed cases, navigators were unable to reach the family but provided resources directly to the PCP. In 7% of closed cases, families reported no longer being interested in services when contacted.

It should be noted that care navigation is a fluid process that requires flexibility on the part of providers, families, and VMAP hub teams. Because care navigation is a family-directed process and individual needs can change over time, data surrounding some care navigation outcomes should be interpreted with caution. Data points, including type of referral, follow-up status, and completion status, are all subject to change in future reports. This should be considered when observing longitudinal trends.
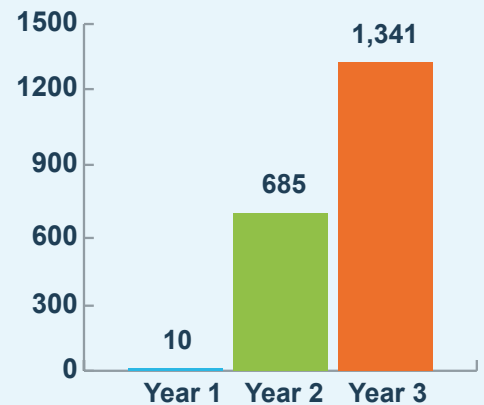
> "The care navigation system is fabulous, they reach out to families right away, and the families have been very satisfied."
>
> **Virginia PA**

Care Navigation Outcomes

Family no longer interested in services **7%**

Unable to reach family **32%**

Resources Provided **61%**

Appointment completed or family on waiting list **18%**

Resources provided and no additional follow-up needed **19%**

Resources provided but connection unverified **19%**

Care Navigation Requests

Year 1: 10
Year 2: 685
Year 3: 1,341

Of the cases in which the care navigator identified barriers for the family connecting to resources (*n*=134), the most commonly reported barriers included *Mental health needs lower priority (due to other social determinants of health taking priority such as housing, food, or other factors)* (40%), *Resource availability issue* (34%), and *Insurance/Financial issues* (15%):

Barriers to Care Navigation Referrals, 2022*

Barrier	%
Lower Priority/Too Busy	40%
Resource Availability Issue	34%
Insurance or Financial Issues	15%
Referral Provider Unresponsive	8%
Resource Quality Issue	8%
Transportation-Location Issues	8%
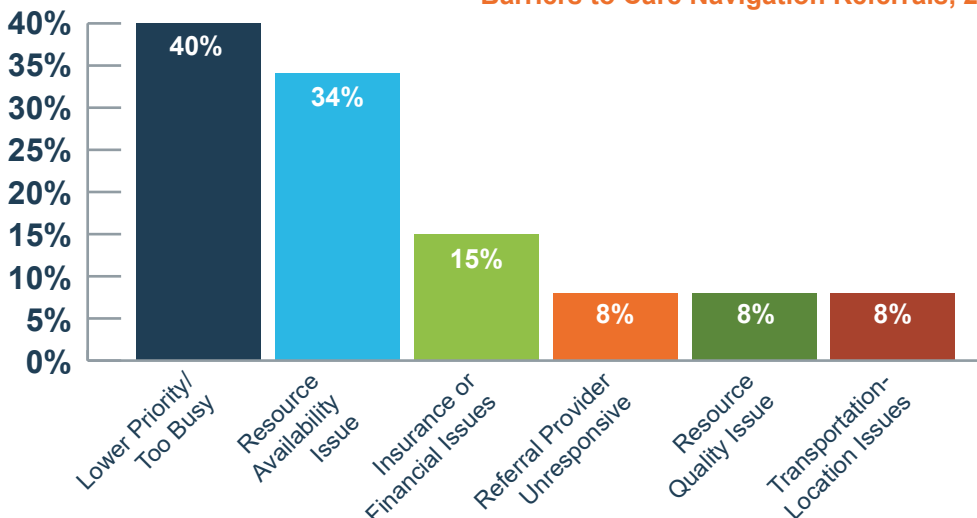
Barriers Reported <5%

Referrals are not Necessary: 2%
Other Logistical Issues: 2%
SDOH Issues: 1%
No Reason Given: 1%

Please note that percentages don't equal 100% due to the question being a "Select all that apply" format.

Quantitative Correlation and Impact Study

VMAP has experienced significant growth across several key metrics (e.g., provider registration, total number of calls to VMAP line, etc.) through 2022. While these metrics are important for continually assessing VMAP's scalability, the analyses of these metrics are limited in that they do not measure the impact VMAP services have on participating providers. As a result, the evaluation team has developed ways to make comparisons between VMAP and non-VMAP participating providers on select criteria using existing and newly developed data collection techniques to draw deeper conclusions regarding programmatic impact.

"VMAP has been an invaluable resource to me as a clinician as well as to my patients. I feel lucky to be practicing in Virginia because so many providers in other states do not have access to a similar program. Thank you."

Virginia Pediatrician

VMAP Project ECHO and VMAP Line

The VMAP evaluation team is capable of measuring and assessing differences between participating and non-participating Project ECHO providers within the parameters of VMAP Line consultations through the 10-digit National Provider Identification (NPI) number. The pre- and post-assessments offered through Project ECHO actively assess a participants' confidence level in evaluating and managing patients with various mental and behavioral health conditions (e.g., ADHD, anxiety, substance use, etc.) as well as an overall ability to administer screening tools or identify support for their patients in need. VMAP is then able to measure differences in Project ECHO–trained providers who call the VMAP line, compared to non-Project ECHO–trained providers also calling VMAP.

General findings show that VMAP Project ECHO participants:

Make up **one-quarter (27%)** of VMAP Line calls for consultation

Are **less likely to need a medication or crisis consultation** when calling the VMAP Line

VMAP Project ECHO participants who also utilize the VMAP Line for consultation show significant differences from their peers by:

Demonstrating **significantly higher rates** of screening tools utilization

Reporting **greater confidence in assessing and managing** behavioral health conditions
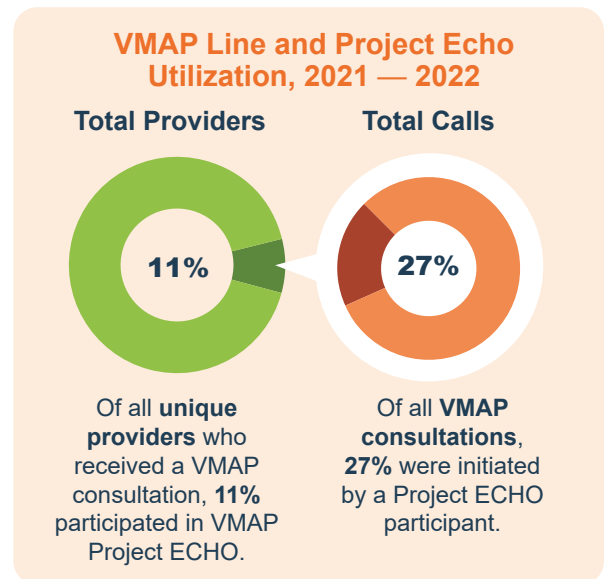
Overlap in VMAP Project ECHO and VMAP Line Consultation

Project ECHO participants compose nearly one-quarter of VMAP Line consultations. Of the 144 Project ECHO assessment completers since 2021, 86% (*n*=120) had included an NPI in their completed ECHO assessments, which allowed them to be matched with the VMAP Line consultation data. Of the Project ECHO assessment completers who could be matched with the VMAP Line consultation data (*n*=120), over two-thirds (63%) had received a consultation at least once. Inversely, 11% (*n*=70) of all unique providers who had received a VMAP consultation in Years 1 through 3 could be linked to having participated in Project ECHO. Concerning the total number of consultations provided by the VMAP Line, 27% (*n*=752) of these were for a provider who had participated in Project ECHO.

Project ECHO participants are significantly less likely to identify a *Medication consultation* or a *Crisis consultation* as their reason for needing a consultation. There were statistically significant differences between Project ECHO participants and non-Project ECHO participants regarding the reasons for receiving a VMAP Line consultation. Across all 2,799 VMAP Line consultations, Project ECHO participants reported significantly fewer calls in which they cite a *Medication consultation* (80% compared to 85%) or a *Crisis consultation* (6% compared to 8%) as the reason for calling VMAP:

VMAP Line and Project Echo Utilization, 2021 — 2022

Total Providers

11%

Of all **unique providers** who received a VMAP consultation, **11%** participated in VMAP Project ECHO.

Total Calls

27%

Of all **VMAP consultations**, **27%** were initiated by a Project ECHO participant.

Differences in Reasons for Requesting a VMAP Line Consultation by Project ECHO Participation Status, 2019 — 2022

Legend:
- VMAP Project ECHO Participants
- Non-VMAP Project ECHO Participants

Medication Consultation (*n*=2,330): 80% / 85%
Crisis Consultation (*n*=207): 6% / 8%
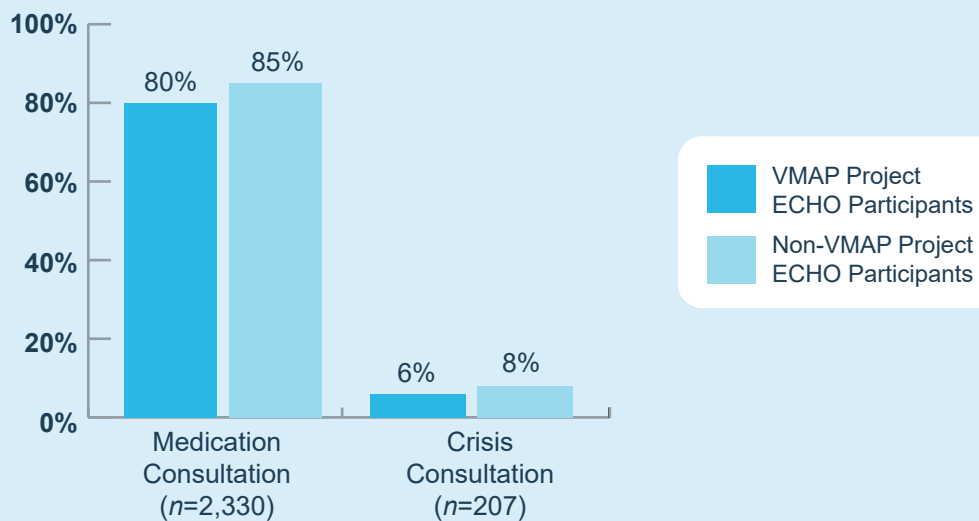
Screening Tool Usage Based on VMAP Line and VMAP Project ECHO Participation

VMAP Line users who had also participated in Project ECHO were more likely to report using a screening tool than VMAP Line users who have not participated in Project ECHO. VMAP Line users who participated in Project ECHO consultation had significantly higher rates using screening tools for *Anxiety* (e.g., SCARED, GAD-7), *Suicide* (e.g., SAD PERSONS, CSPI-2), *General mental health* (e.g., PSC-17, PSC-35, SDQ, HEADSSS), and *Depression* (e.g., PHQ-2, PHQ-9, SMFQ, BDI, CDI) than their counterparts who had not participated in Project ECHO:

Screening Tool Usage by VMAP Project ECHO Participation Status, 2019 — 2022
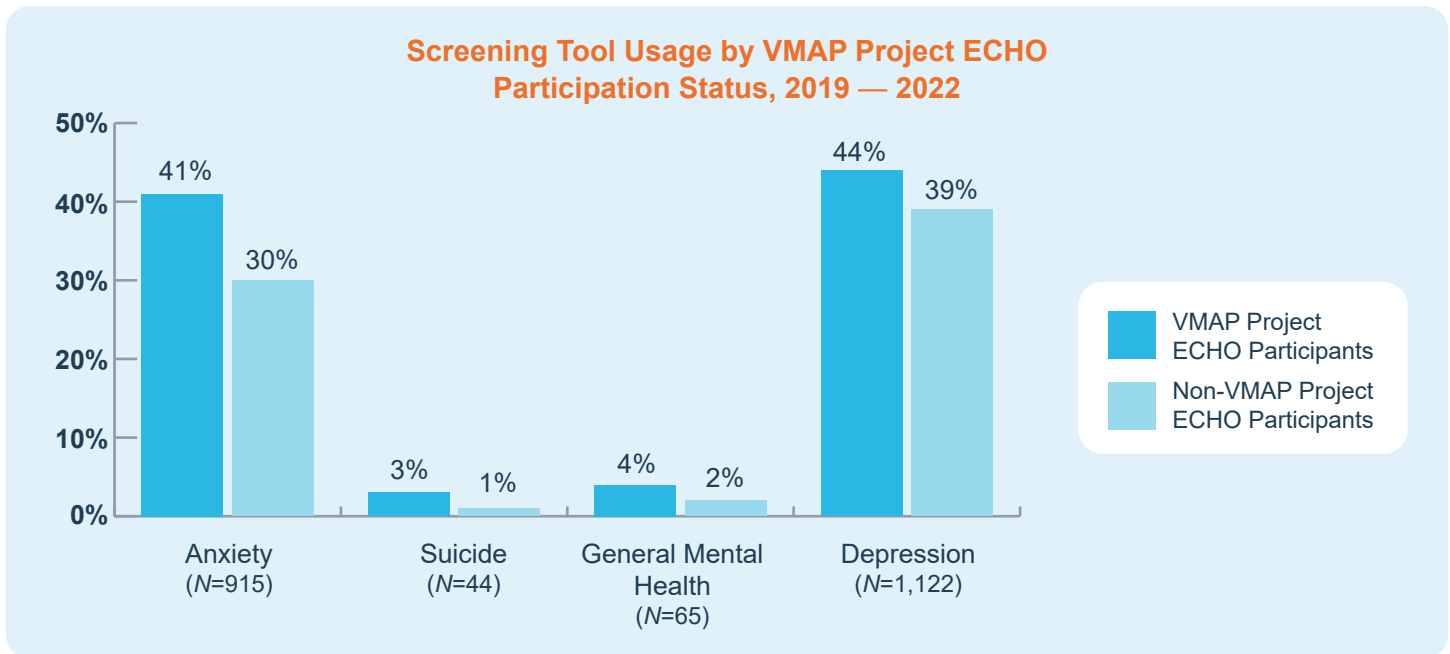
Project ECHO participants who had also received a VMAP Line consultation had significantly higher rates using specific screening tools than Project ECHO participants who had not received a VMAP Line consultation. Statistically significant correlations regarding screening tool usage, as reported in the VMAP Project ECHO post-assessment data, were found based on the participant's history of receiving a VMAP Line consultation. Of all Year 2 and Year 3 Project ECHO participants who had provided their NPI (*N*=120), those that received a VMAP Line consult (*n*=75) were significantly more likely to have used the *SCARED* (96%) and *PSC-17* (72%) screening tools as listed in the Project ECHO post-assessment than those that had not received a consult (*n*=45), at 74% and 41%, respectively:[12]

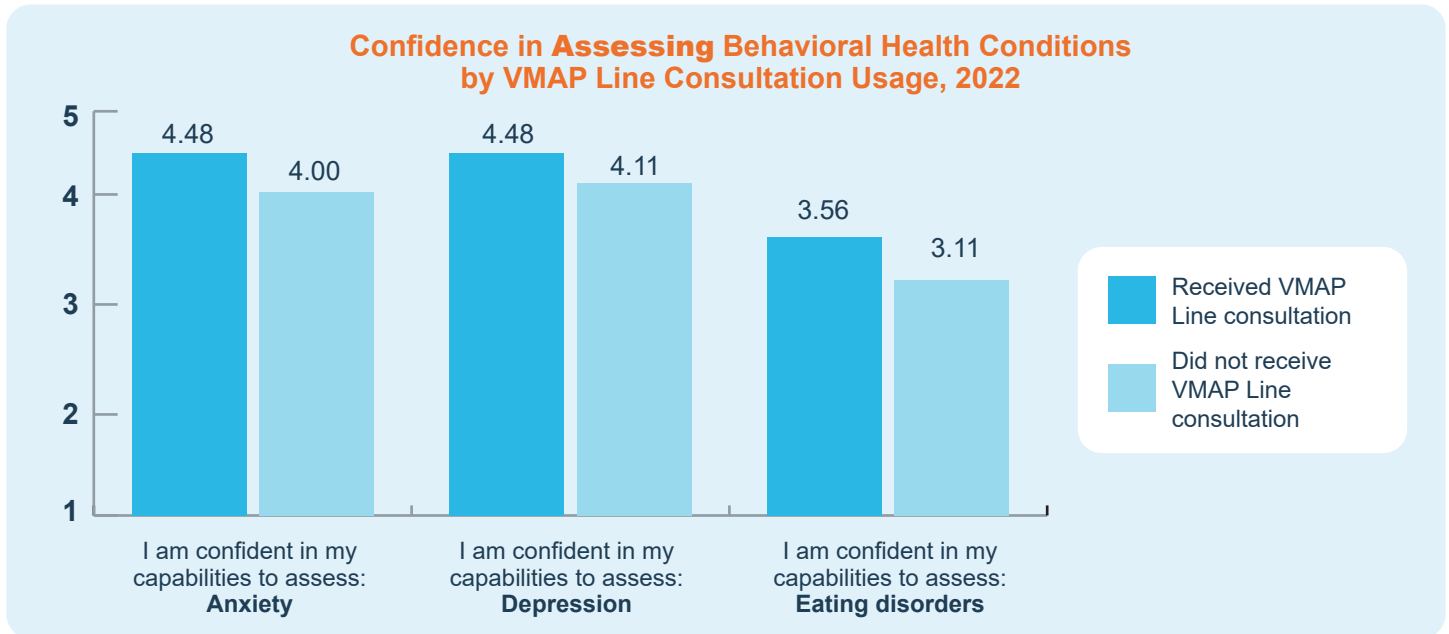## Screening Tool Utilization by VMAP Line Usage, 2020 — 2022

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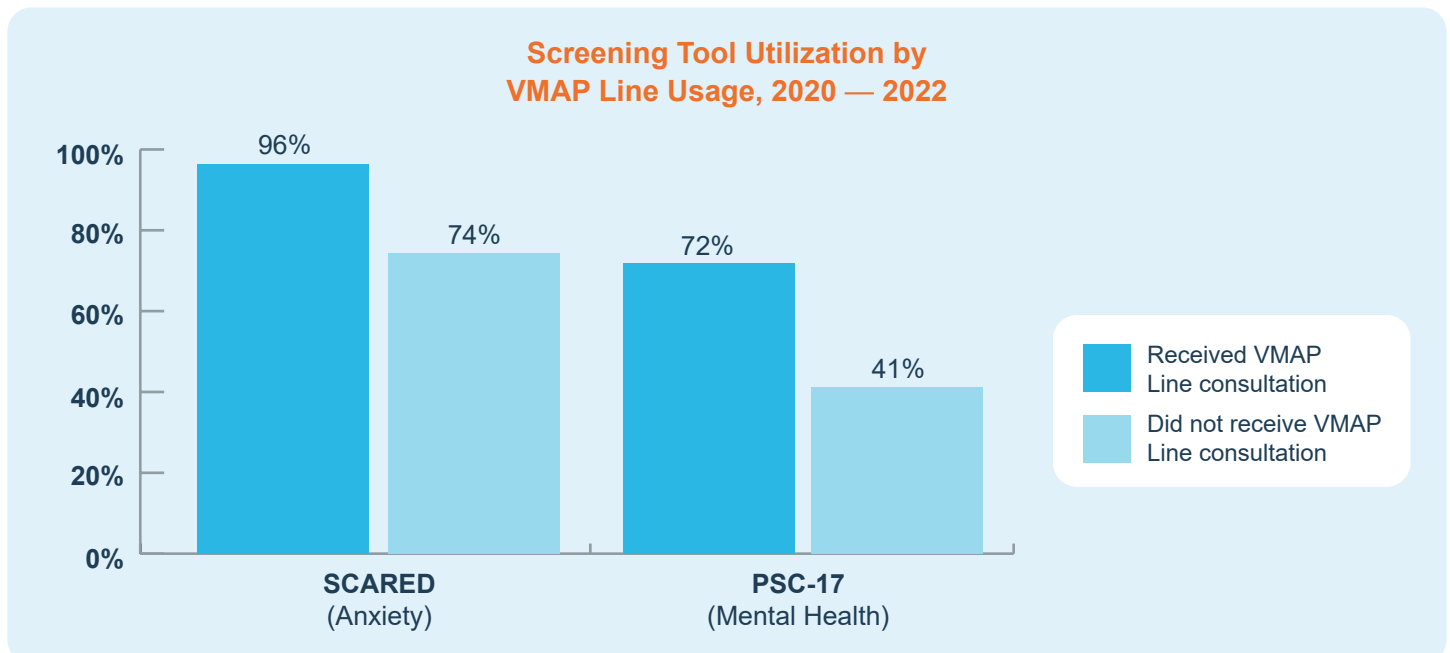
[12] It should be noted that this question is presented in a 4-point Likert scale (*1 – Never, 2 – 1 time per month, 3 – 2–5 times per month,* and *4–6 times a month or more*) but was recalculated to a binary format for analysis in which the respondent 1) never used the screening tool or 2) had used the screening tool.
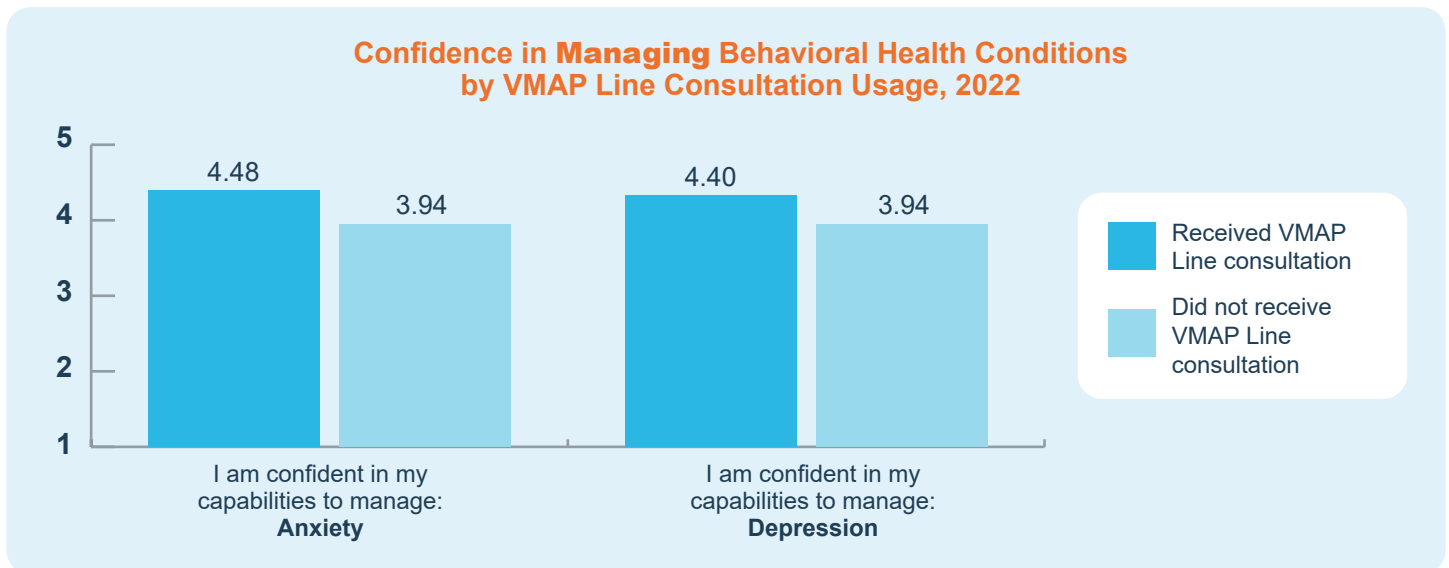
Competency in Assessing and Managing Mental Health Conditions

Participants who completed the Project ECHO post-assessment in Year 3 were asked to indicate their confidence level in assessing and managing 12 behavioral health conditions for children or adolescents using a 5-point Likert scale: *1 – Not at all confident, 2 – Slightly confident, 3 – Somewhat confident, 4 – Fairly confident, 5 – Completely confident.*

Project ECHO participants who had received a VMAP Line consultation reported significantly higher levels of confidence than their peers who had not received a consultation in assessing anxiety, depression, and eating disorders. Of the 77 respondents who completed a Project ECHO post-assessment in Year 3, 56% (*n*=43) included an NPI that could be matched with VMAP Line data. Of the 43 respondents that included an NPI, 58% (*n*=25) received a VMAP Line consultation and 42% (*n*=18) had never received a consultation. Participants who had received a VMAP consultation perceived themselves to be more confident than their peers in assessing mental and behavioral health conditions, exhibiting statistically significant differences across three of the 12 behavioral health conditions:

Confidence in Assessing Behavioral Health Conditions by VMAP Line Consultation Usage, 2022

	Received VMAP Line consultation	Did not receive VMAP Line consultation
I am confident in my capabilities to assess: **Anxiety**	4.48	4.00
I am confident in my capabilities to assess: **Depression**	4.48	4.11
I am confident in my capabilities to assess: **Eating disorders**	3.56	3.11

Project ECHO Participants who received a VMAP Line consultation reported significantly higher levels of confidence than their peers who had not received a consultation in managing anxiety and depression. Project ECHO participants who had received a VMAP consultation perceived themselves to be more confident than their peers who had not received a VMAP Line consultation according to the Project ECHO data, exhibiting statistically significant differences across two of the 12 mental and behavioral health conditions:

Confidence in Managing Behavioral Health Conditions by VMAP Line Consultation Usage, 2022

	Received VMAP Line consultation	Did not receive VMAP Line consultation
I am confident in my capabilities to manage: **Anxiety**	4.48	3.94
I am confident in my capabilities to manage: **Depression**	4.40	3.94

VMAP Statewide Provider Survey

The VMAP implementation team created a new survey that was administered between December 1 and December 31, 2022, that measured providers' general knowledge and capacity in assessing and treating the mental health of child and adolescent patients in a multitude of contexts. This survey was distributed to providers (e.g., pediatricians, family medicine physicians, nurse practitioners, PAs) across Virginia via VMAP, the Medical Society of Virginia (MSV), VA-AAP, and the broader VMAP stakeholder base. A total of 431 responses were initially collected and 374 were used in analysis after data cleaning. In this section, there are two groups being analyzed:

VMAP Users
Providers who reported completing a VMAP training or had previously called the VMAP Line.

Non-Users
Providers who reported not participating in either VMAP service.

General findings show that VMAP users:

Perceive themselves to be **more knowledgeable and confident** about *mental health assessment processes* than non-users
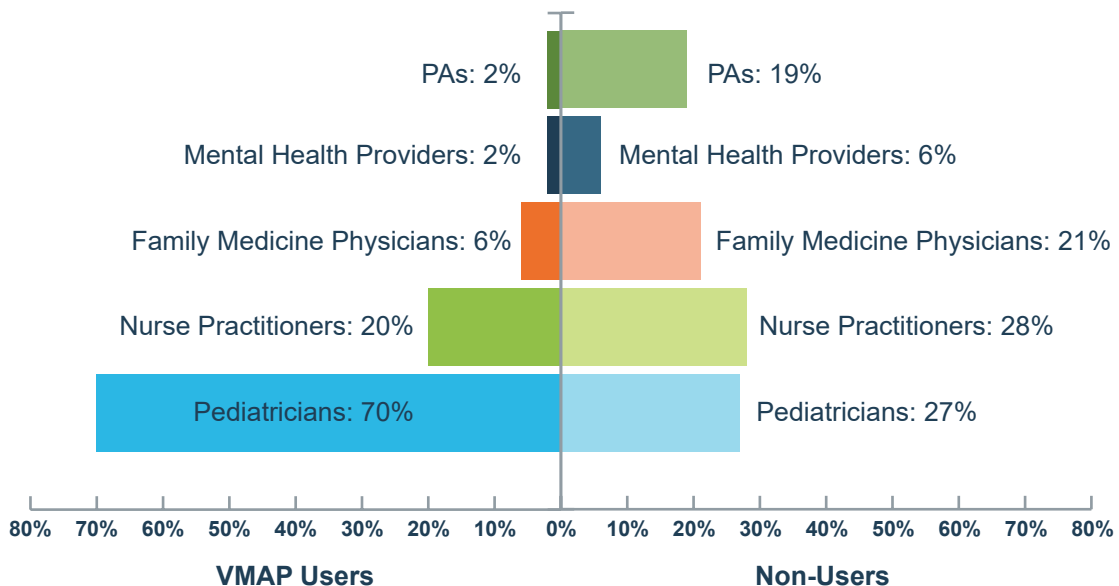
Perceive themselves to be **more knowledgeable and confident** about *mental health treatment options* than non-users

Respondent Demographics

Of the 374 responses used for analysis, nearly two-thirds (62%) had reported having participated in either a VMAP-sponsored training (e.g., VMAP REACH PPP, VMAP Project ECHO, QI Initiative) or had previously called the VMAP Line. Over one-third (39%) of all respondents indicated they practiced in the Northern region, followed by the Central (22%), Eastern (16%), Western (16%), and Southwest (7%) regions. Pediatricians made up over one-half (54%) of the total responses, followed by nurse practitioners (23%) and family medicine physicians (11%).

It should be noted that VMAP users (*n*=232) were mostly composed of pediatricians (70%), nurse practitioners (20%), and family medicine physicians (6%). Non-users (*n*=141), however, were mostly composed of nurse practitioners (28%), pediatricians (27%), family medicine physicians (21%), and PAs (19%). While some comparisons made in this section seek to isolate and strictly compare pediatricians between VMAP users and non-users, all other analyses should be interpreted with caution due to the difference in representation among providers.

Provider Type Breakdown by VMAP Usage In VMAP Statewide Survey, 2022

PAs: 2% | PAs: 19%
Mental Health Providers: 2% | Mental Health Providers: 6%
Family Medicine Physicians: 6% | Family Medicine Physicians: 21%
Nurse Practitioners: 20% | Nurse Practitioners: 28%
Pediatricians: 70% | Pediatricians: 27%

80% 70% 60% 50% 40% 30% 20% 10% 0% 10% 20% 30% 40% 50% 60% 70% 80%

VMAP Users | **Non-Users**

Self-Perceived Knowledge and Confidence in *Assessing* Mental Health

All providers were asked about their overall knowledge regarding mental health assessment for their pediatric patients. Providers were specifically asked, *"How knowledgeable are you regarding mental health assessment processes (e.g., screening and diagnosis)?"* using the following 4-point Likert scale: *1 – Not knowledgeable, 2 – Slightly knowledgeable, 3 – Moderately knowledgeable, 4 – Very knowledgeable.*

VMAP users perceive themselves to be more knowledgeable about mental health assessment processes than non-users. VMAP users (*n*=232) had a significantly higher self-perceived score for this item at 3.31, compared to non-users (*n*=141) at 3.02. When isolating this analysis to only pediatricians, the VMAP pediatrician users (*n*=162) continued to report statistically significant higher self-perceived ratings than the non-user pediatricians (*n*=38) at 3.36 and 2.95, respectively.

Providers' Overall Knowledge in Mental Health Assessment Processes by VMAP Participation, 2022

*How knowledgeable are you regarding mental health assessment processes?*
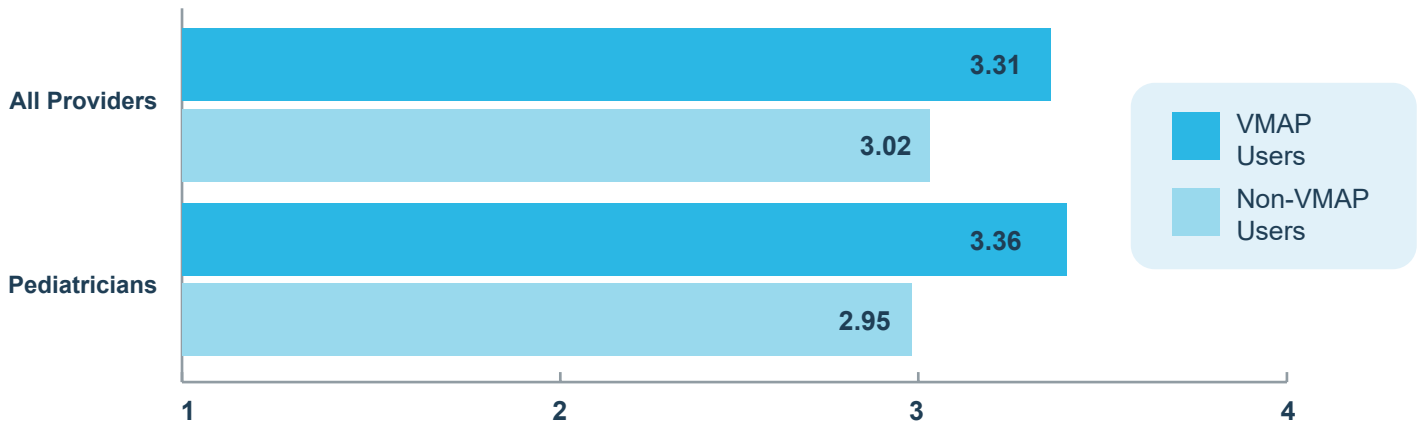
Providers were also asked about their overall agreement level regarding their confidence in assessing patient mental health for eight specific items using a 5-point Likert scale: *1 – Do not agree, 2 – Slightly agree, 3 – Somewhat agree, 4 – Mostly agree, and 5 – Strongly agree.* The items are as follows:

1. Through **direct observation** (e.g., patient appearance, patient behavior, patient description of emotional state, etc.)
2. By collaborating with an **external support network** (e.g., help line, curbside consultant, calling VMAP Line, etc.)
3. Because of **previous training(s)** that I have completed
4. Because I can seek advice from my **colleagues and peers**
5. With assistance from **mental health professionals** (e.g., child psychologists, licensed mental health professionals, etc.)
6. Utilizing **appropriate screening tools** for assessing patient mental health
7. By utilizing resources **designed to help diagnose** patients
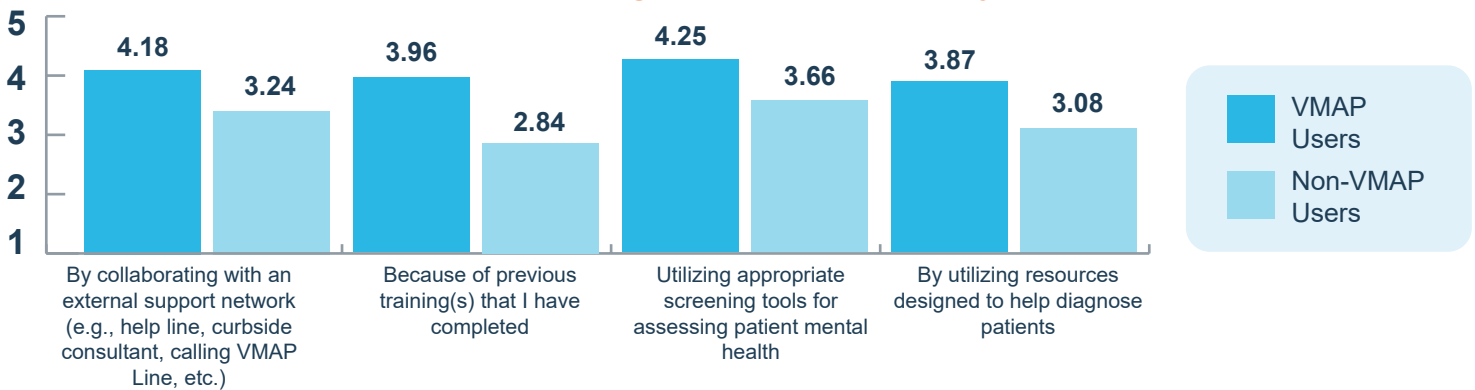8. By **administering screening tools** for patients who are considered Limited English Proficiency (LEP)

VMAP users exhibited significantly higher confidence levels regarding specific mental health assessment processes than non-users. When comparing all provider responses, VMAP users had higher self-reported confidence ratings across each of the eight items listed above, with six of those eight items implying a statistically significant difference. The items with the most statistically significant differences between VMAP users (*n*=232) and non-users (*n*=141) included *providers' ability to assess patient mental health* in the following ways:

Providers' Confidence in Assessing Patient Mental Health by VMAP Participation, 2022
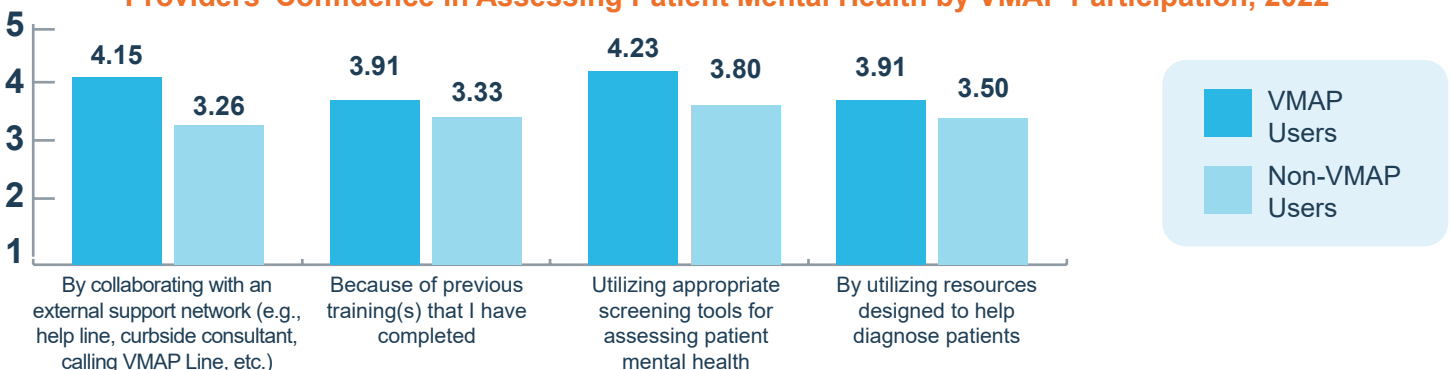
Pediatricians who are VMAP-users exhibited significantly higher confidence levels regarding specific mental health assessment processes than non-user pediatricians. When comparing only pediatrician responses, VMAP users (*n*=162) again had higher self-reported confidence ratings across each of the eight items listed above compared to non-users (*n*=38), with six of those eight items implying a statistically significant difference. The items with the most statistically significant differences between the VMAP users and non-users included *providers' ability to assess patient mental health* across the following:

Pediatricians' Confidence in Assessing Patient Mental Health by VMAP Participation, 2022

| Item	VMAP Users	Non-VMAP Users
By collaborating with an external support network (e.g., help line, curbside consultant, calling VMAP Line, etc.)	4.18	3.24
Because of previous training(s) that I have completed	3.96	2.84
Utilizing appropriate screening tools for assessing patient mental health	4.25	3.66
By utilizing resources designed to help diagnose patients	3.87	3.08

Self-Perceived Knowledge and Confidence in *Treating* Mental Health

All providers were asked about their overall knowledge regarding mental health treatment for their pediatric patients. Providers were specifically asked "*How knowledgeable are you regarding mental health treatment options for patients?*" using the following 4-point Likert scale: *1 – Not knowledgeable, 2 – Slightly knowledgeable, 3 – Moderately knowledgeable, 4 – Very knowledgeable.*

VMAP users perceive themselves to be more knowledgeable about mental health treatment options than non-users. VMAP users (*n*=232) had a significantly higher self-perceived score for this item at 3.08, compared to the non-users (*n*=141) at 2.83. When isolating this analysis only to pediatricians, VMAP users (*n*=162) continued to report significantly higher self-perceived ratings than non-users (*n*=38) at 3.62 and 3.08, respectively:

Providers' Overall Knowledge of Mental Health Treatment Options by VMAP Participation, 2022
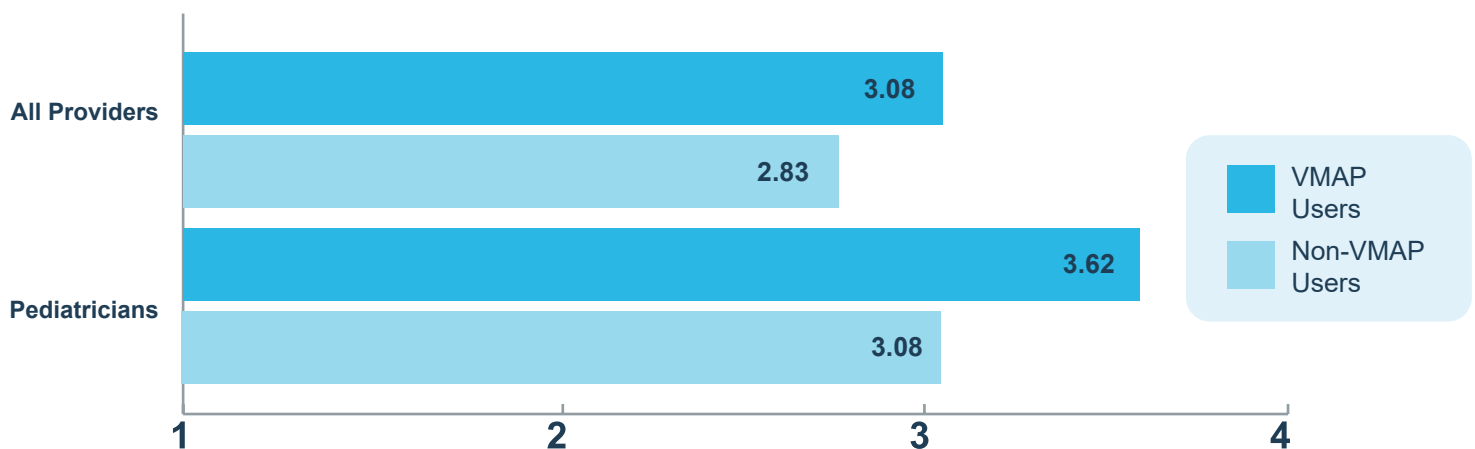
| Group	VMAP Users	Non-VMAP Users
All Providers	3.08	2.83
Pediatricians	3.62	3.08

Providers were also asked about their overall agreement level regarding their confidence in treating patient mental health for the following three items using a 5-point Likert scale: *1 – Do not agree, 2 – Slightly agree, 3 – Somewhat agree, 4 – Mostly agree, and 5 – Strongly agree*. The items are as follows:

1. Utilizing **evidence-based methods**
2. By **utilizing resources** designed to help treat pediatric patients
3. Through **seeking out consultation** with behavioral health specialists

VMAP users exhibited significantly higher confidence levels regarding specific mental health treatment options than non-users. When comparing all provider responses, VMAP users (*n*=232) had higher self-reported confidence ratings across two of the three items listed above, both of which implied a statistically significant difference between the VMAP users and non-users (*n*=141). The items with a statistically significant difference between the two groups included *providers' ability to treat a patient's mental health* utilizing the following:

Providers' Confidence in Treating Patient Mental Health by VMAP Participation, 2022
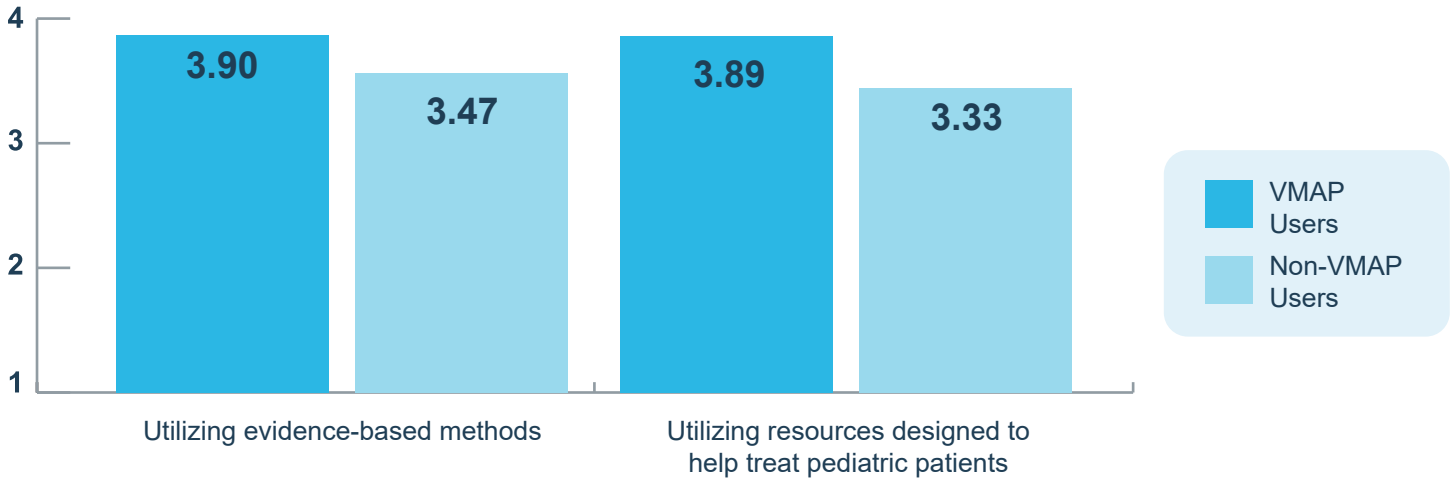
Pediatricians who were VMAP users also exhibited significantly higher confidence levels regarding specific mental health treatment options than non-user pediatricians. When comparing only pediatrician responses, VMAP users (*n*=162) had higher self-reported confidence ratings across all three items than non-users (*n*=38). All three items displayed statistically significant difference between the two groups when analyzing *providers' ability to treat a patient's mental health* through the following methods:

Pediatricians' Confidence in Treating Patient Mental Health by VMAP Participation, 2022
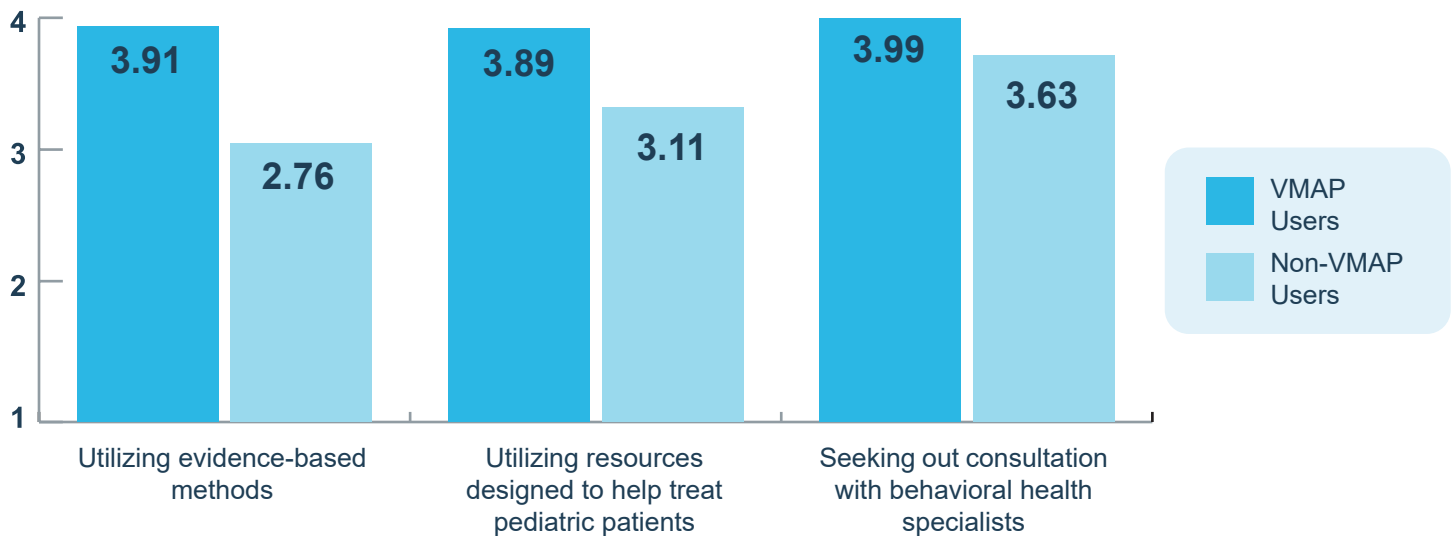
Interest in Behavioral Health Topics

In addition to delving deeper into the statistical impact VMAP services have had on providers throughout the state, the implementation team used the provider survey to learn what behavioral health topics providers are interested in learning more about. Providers were asked to select five out of a possible 17 topics they were most interested in learning more about at the time they completed the survey.

VMAP users were significantly less interested in learning about *Depression* or *Anxiety* and more interested in learning about *Eating disorders* and *Preschool aggression* than non-users. When observing all providers (*n*=373), the topics providers expressed most interest in learning more about included *Depression* (51%), *Autism/Pervasiveness developmental disorder* (51%), *Anxiety* (48%), and *Eating disorders* (48%). When comparing VMAP users (*n*=232) and non-users (*n*=141), however, statistically significant differences regarding the percentage of providers choosing these topics were discovered. For example, VMAP users were significantly less likely to prioritize learning about *Depression* (42%) or *Anxiety* (40%) when compared to non-users for the same topics, at 65% and 60%, respectively. This finding serves as a potential indicator that VMAP users have already learned about these topics through VMAP at some point, thus their minimized interest. VMAP users, however, were significantly more likely to have selected *Eating disorders* (56%) and *Preschool aggression* (42%) when compared to non-users for the same topics, at 35% and 23%, respectively.

Providers' Interest in Learning About Behavioral Health Topics by VMAP Participation, 2022

Topic	VMAP Users	Non-VMAP Users
Depression	42%	65%
Anxiety	40%	60%
Eating disorders	56%	35%
Preschool aggression	42%	23%
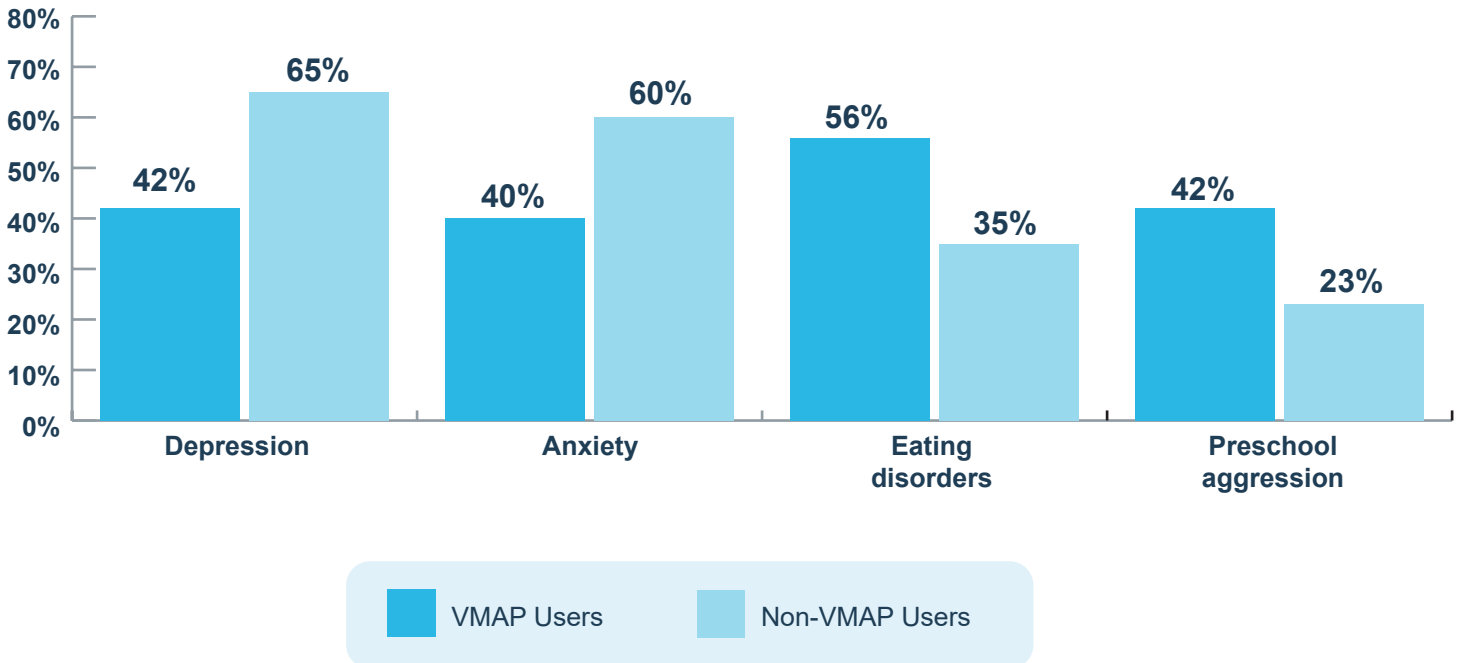
2023 and Beyond – Advocacy for Continued Expansion

In the 2023 General Assembly, the MSVF General Assembly team advocated for additional funding for VMAP to expand in two key areas:

1

Complete implementation of early childhood (age 0–5) intervention and prevention in primary care through training, consultation, and resource support.

2

Expand VMAP to include services for PCPs and obstetricians who care for pregnant and postpartum mothers.

Budget amendments were filed in the House and Senate for $7.9 million to expand VMAP to these areas. The Senate included the full amount for expansion in their budget. The House budget did not include any additional funding. Both the House and Senate must reconcile their budgets, and VMAP is currently waiting to hear on the status of this potential funding.

Staffing and Partners

Name	VMAP Role
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Brooke Bates	Care Navigator
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Tamara Palka, MD	CAP
Carl Petersen, DO	CAP
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Suzanne Welsh-Agnew	REACH PPP Staff
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Ally Singer Wright	Program Director

These staff are affiliated with the following partner organizations:

Carilion • Centra • Children's Hospital of the King's Daughters • Children's National Hospital • Inova Health System • Medical Society of Virginia Foundation • Mt. Rogers Community Services • Old Dominion University • UVA Children's • VCU Health • Virginia Chapter, American Academy of Pediatrics • Virginia Department of Behavioral Health and Developmental Services • Virginia Department of Health

The Virginia Mental Health Access Program (VMAP) is a statewide initiative that helps health care providers take better care of children and adolescents with mental health conditions through provider education and increasing access to child psychiatrists, psychologists, social workers, and care navigators.