Modular Approach to Therapy for Children with Anxiety, Depression, Trauma, or Conduct Problems
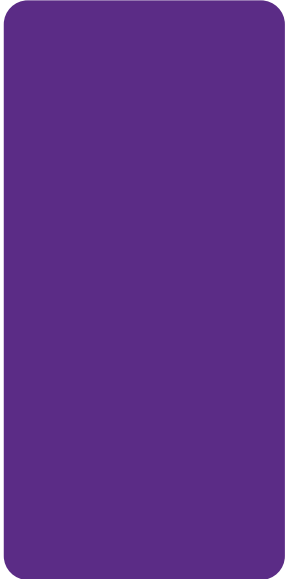
CONNECTICUT'S EVIDENCE-BASED
TREATMENT COORDINATING CENTER

CHDI® Child Health and Development Institute

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CONTENTS

I. EXECUTIVE SUMMARY

The Modular Approach to Therapy for Children with Anxiety, Depression, Trauma, and Conduct problems (MATCH-ADTC) is an evidence-based treatment for four common behavioral health concerns among children: anxiety, depression, posttraumatic stress, and behavior problems. The MATCH-ADTC Coordinating Center ("Coordinating Center"), is located at the Child Health and Development Institute (CHDI). Funded by the Connecticut (CT) Department of Children and Families (DCF), the goal of the Coordinating Center is to expand access to high-quality, evidence-based outpatient behavioral health treatment for children experiencing anxiety, depression, trauma, and/or conduct problems. The Coordinating Center supports a network of 23 MATCH-ADTC providers throughout Connecticut and provides training, credentialing, implementation support, site-based consultation, data collection and reporting, and ongoing quality improvement.

This report summarizes the work of the Coordinating Center during fiscal year 2022 (July 1, 2021 through June 30, 2022) and includes some trends across the years of the initiative. This year MATCH-ADTC providers continued to be impacted by the COVID-19 global pandemic, including reported high rates of staff turnover and workforce shortages. Despite the challenges, providers demonstrated strong results with MATCH-ADTC in access, quality, and outcomes.

KEY FINDINGS FY22:

Anxiety was the most common treatment protocol used in FY22, received by **38%** of children, an increase compared to **29%** in FY21

38 new clinical staff were trained to deliver MATCH-ADTC

505 children received MATCH-ADTC, *a decrease from last year, in part due to workforce challenges* **2 in 3 MATCH-ADTC** trained clinicians saw a case in the year

Black youth accounted for **9.9% of children receiving MATCH-ADTC** despite being **15.1% of the overall OPCC population**
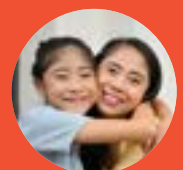
Children receiving MATCH-ADTC generally had similar rates of completing treatment and improvement regardless of race, ethnicity, and gender

Most children with clinically high symptoms at baseline experienced remission.

82.1% had improvement on at least one assessment measure

Caregivers **(94%)** and children **(89%)** reported **high satisfaction** with treatment

KEY RECOMMENDATIONS:

- **Increase the number of children seen** in MATCH-ADTC by establishing specific agency-level expectations for the number of children who should receive MATCH-ADTC each year.

- **Develop strategies** to assist agencies in entering data into PIE to reduce data burden and improve clinical workflow. Data burden is often identified as a reason why children are not receiving MATCH-ADTC or not being counted in the system; these efforts will ensure that all children being seen in MATCH are entered and an accurate number of MATCH cases is reported.

- **Develop data reports** that can be used in site-based consultation to help agencies monitor any disparities or inequitable trends in access to MATCH-ADTC.

- **Ensure each agency has in-house expertise** by having supervisors at each agency complete the MATCH Associate Consultant training and consultation program.

- **Highlight the appropriateness and effectiveness** of MATCH-ADTC for children with anxiety; as outpatient agencies continue to see increases in the rate and severity of anxiety, sharing the successes within the MATCH-ADTC protocol might help agencies better identify children who might benefit and engage them in treatment.
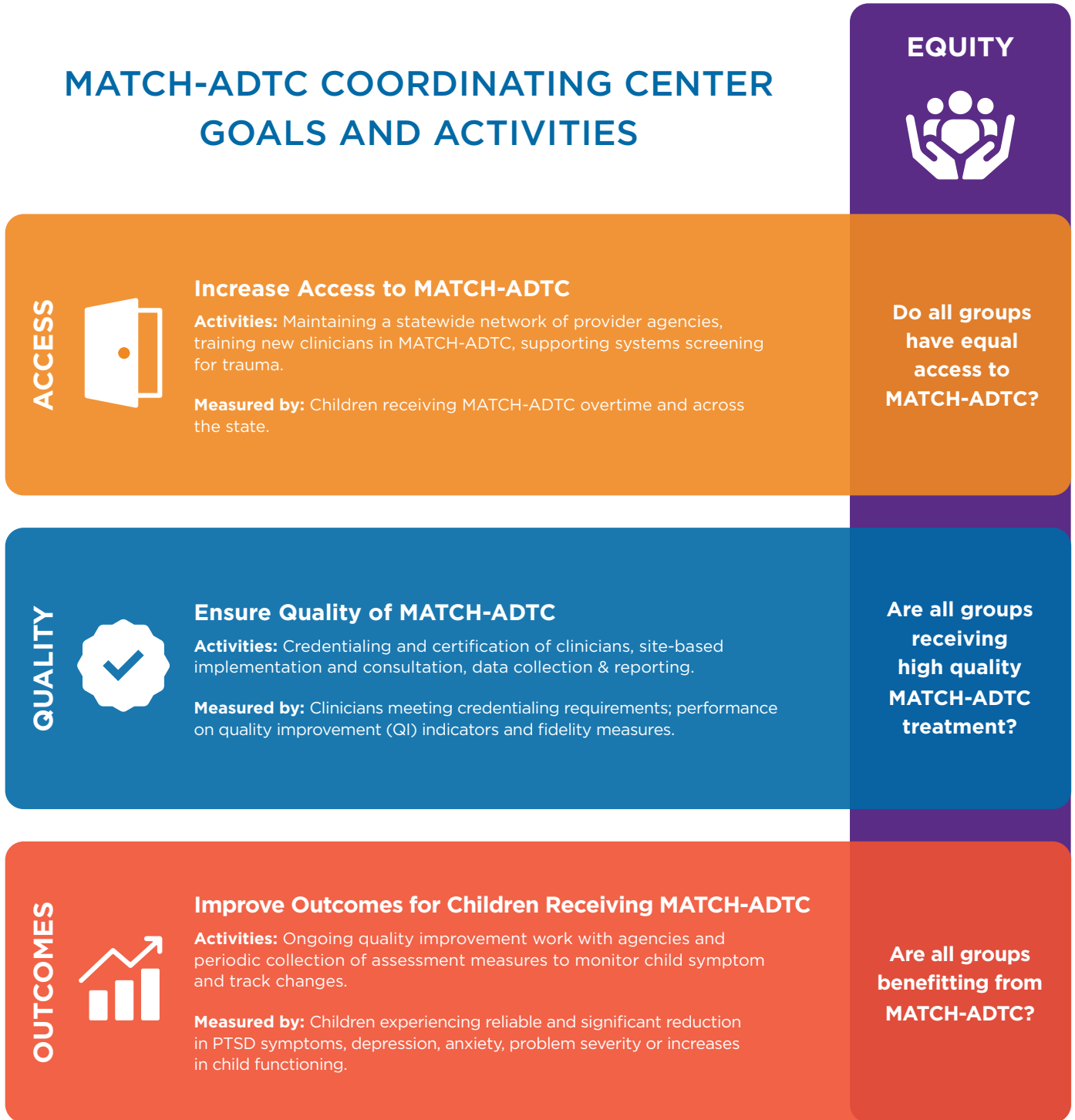
II. INTRODUCTION

Children and adolescents seeking treatment often experience a variety of co-occurring problems and the course of treatment may need to change over time. Most treatments address one problem area at a time, although comorbidity and changing clinical needs commonly occur in practice. MATCH-ADTC is an evidence-based treatment to treat four common behavioral health concerns among children: anxiety, depression, posttraumatic stress, and behavior problems. Appropriate for children 6-15 years of age, MATCH-ADTC is comprised of 33 modules (e.g., praise, rewards, etc.) representing treatment components that are frequently included in cognitive behavioral therapy (CBT) protocols for depression, anxiety (including post-traumatic stress), and behavioral parent training for disruptive behavior. MATCH-ADTC is designed to address broad practitioner caseloads, comorbidity, and changes in treatment needs during episodes of care, creating a foundation for successful outcomes.

The MATCH-ADTC Coordinating Center ("Coordinating Center") is funded by the Connecticut Department of Children and Families (DCF) and located at the Child Health and Development Institute (CHDI) of Connecticut. Beginning in 2013 in a partnership with the model developers at Harvard University, MATCH-ADTC has been disseminated across the state through a series of Learning Collaboratives. The Coordinating Center provides centralized support for the statewide network of 23 MATCH-ADTC providers. The figure below illustrates the goals and primary activities of the Coordinating Center.[1] This report focuses on performance during FY 22 and is framed.

1. A detailed accounting of these activities during FY22 can be found in Appendix A.

Figure 1. Goals and Activities of the Coordinating Center

MATCH-ADTC COORDINATING CENTER GOALS AND ACTIVITIES

EQUITY

ACCESS

Increase Access to MATCH-ADTC

Activities: Maintaining a statewide network of provider agencies, training new clinicians in MATCH-ADTC, supporting systems screening for trauma.

Measured by: Children receiving MATCH-ADTC overtime and across the state.

Do all groups have equal access to MATCH-ADTC?

QUALITY

Ensure Quality of MATCH-ADTC

Activities: Credentialing and certification of clinicians, site-based implementation and consultation, data collection & reporting.

Measured by: Clinicians meeting credentialing requirements; performance on quality improvement (QI) indicators and fidelity measures.

Are all groups receiving high quality MATCH-ADTC treatment?

OUTCOMES

Improve Outcomes for Children Receiving MATCH-ADTC

Activities: Ongoing quality improvement work with agencies and periodic collection of assessment measures to monitor child symptom and track changes.

Measured by: Children experiencing reliable and significant reduction in PTSD symptoms, depression, anxiety, problem severity or increases in child functioning.

Are all groups benefitting from MATCH-ADTC?

III. ACCESS TO MATCH-ADTC IN CONNECTICUT

The first goal of the Coordinating Center and the statewide MATCH-ADTC initiative is to increase access to MATCH-ADTC in Connecticut. This begins with ensuring MATCH-ADTC is available by maintaining a provider network that serves many areas of the state and training new clinicians in the model. The total number of children and families receiving MATCH-ADTC, along with their demographics and characteristics, is a way of monitoring the reach of the model and the state's progress in providing MATCH-ADTC to the children who most need treatment.

Availability Across the State

In FY22, Connecticut's MATCH-ADTC network consisted of 21 provider agencies and three private practices. Figure 2 shows the location of MATCH-ADTC sites across the state and Table 1 shows the trends in access over the past four years as well as cumulative totals. Since FY14, there have been 273 clinicians that have provided MATCH-ADTC. There were 182 clinicians on a MATCH-ADTC team during FY22; of these, 120 (66.3%) saw at least one MATCH-ADTC case, which is a decrease from last FY (77.2%). On average, outpatient providers had 7 clinicians (range 1 – 15) on their MATCH-ADTC clinical teams.

During FY22 there were 44 MATCH credentialed clinicians who were active in the model. Of the 182 clinicians on a MATCH-ADTC team, 36 (19.8%) left in the fiscal year. To address attrition, 38 new clinical staff were trained in MATCH-ADTC during the year. To support high quality delivery of services, 13 clinical staff attended booster training and 12 clinicians were credentialed. Additionally, 5 staff completed MATCH-ADTC Associate Consultant training to be able to provide in-house consultation to newly trained MATCH-ADTC clinicians.
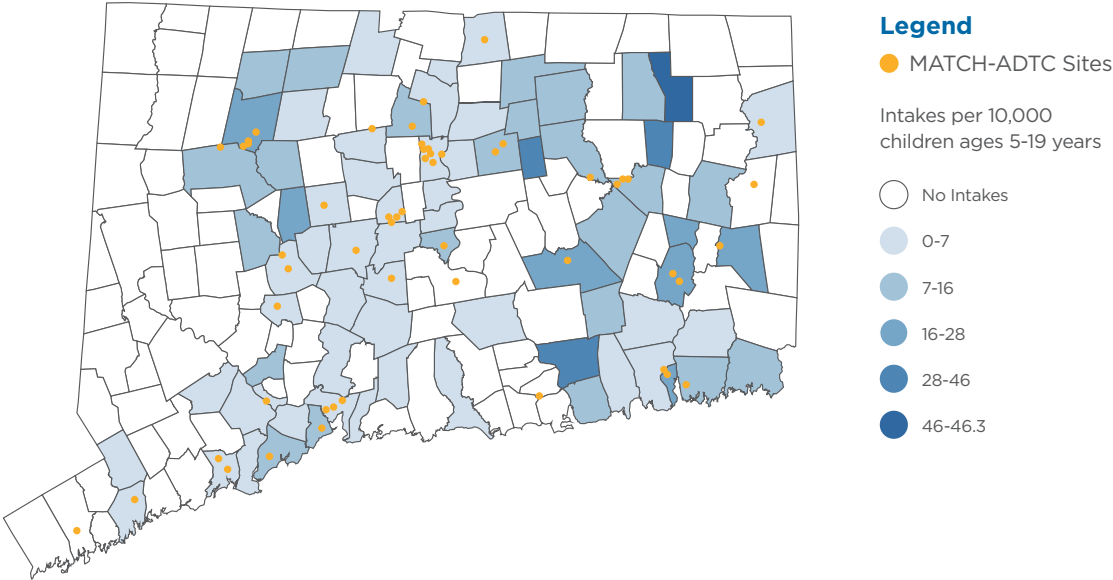
Figure 2. Map of MATCH-ADTC sites and children served

Legend

- MATCH-ADTC Sites

Intakes per 10,000 children ages 5-19 years

- No Intakes
- 0-7
- 7-16
- 16-28
- 28-46
- 46-46.3

Table 1. Trends in MATCH-ADTC Provider Network

	FY18	FY19	FY20	FY21	FY22	Cumulative Since 2014
Providers of MATCH-ADTC	20	19	23	23	24	25
New MATCH-ADTC Clinicians	56	54	40	37	38	363
Clinicians Providing MATCH-ADTC	113	137	116	132	120	273
# Newly Credentialed/Certified	14	20	5	9	12	119

Children Receiving MATCH-ADTC

In FY22, 505 children received MATCH-ADTC. This number represents a decrease from the previous year (595) (see Figure 3). This is likely due in large part to the recruitment and retention challenges in the workforce of behavioral health care providers. The magnitude of this issue seemed unprecedented within provider organizations resulting in high turnover in direct care, supervisory, and leadership positions. During that time, agencies continued telehealth services and in-person treatment sessions to maintain quality and access to care.

Figure 3. Children served by fiscal year
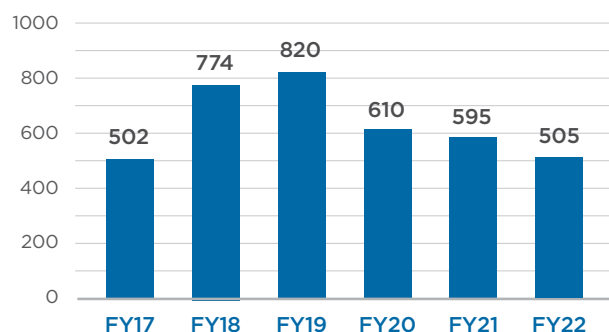
To support sustainability of the model and increase access, two MATCH Associate Consultants successfully completed the Train-the-Trainer collaborative to become trainers in MATCH. The train-the-trainer model equips the Associate Trainer to facilitate MATCH trainings directly to the clinicians within their agency. This approach allows providers to address the high rates of staff turnover and meet the increasing demand for training and clinical consultation. To date, 2,839 children have received MATCH-ADTC since FY14.

Child Demographics

Table 3 contains demographic information for children receiving MATCH-ADTC in FY22, as well as comparisons to those served in outpatient services (as reported by the Provider Information Exchange [PIE] system) and the general CT population. Demographic results are similar to FY 21. Comparing OPCC and MATCH-ADTC numbers, there are two trends to note. A lower percentage of Black youth receive MATCH-ADTC (9.9%) compared to general OPCC services (15.2%) and the opposite is the case for White youth (52.9% OPCC and 61.2% MATCH-ADTC). There also is a lower percentage of Spanish-speaking youth served in MATCH-ADTC (3.4%) compared to OPCC (10.4%) and the overall state population (13.7%).

Throughout this report, indicators of access, quality, and outcomes are reported by demographic groups. Social and community context is highly related to service receipt and outcomes. Racism is part of that context that research has shown leads to inequities. Recognizing this, special consideration is given in this report to comparisons across racial and ethnic groups.

Table 2. Characteristics of Children Receiving MATCH-ADTC, with Comparisons (n=505)				
	MATCH-ADTC		OPCC[2]	CT pop[3]
	n	%	%	%
Sex (Male)	204	40.4	49.0	51.3
Race				
American Indian or Alaska Native	0	0.0	0.4	0.4
Asian	1	0.2	1.1	4.6
Black or African American	50	9.9	15.1	12.8
Native Hawaiian or Pacific Islander	1	0.2	0.2	0.1
White	309	61.2	52.9	66.3
Other Race/Ethnicity (Includes Multiracial/Ethnic)	28	5.5	2.9	15.8
Not Reported	116	23.0	27.4	N/A
Hispanic, Latino, or Spanish (Any Race)[4]	187	37.0	35.7	25.3
Age (Years)				
Under 6 Years	12	2.4	9.3	30.1
6–11 Years	220	43.6	42.6	32.8
12–17 Years	270	53.5	48.1	37.1
Child's Language[5]				
Spanish	17	3.4	10.4	13.7
Neither Spanish or English	0	0.0	2.2	8.0
Missing Language Data	209	41.4	6.3	N.A
Caregiver's Language				
Does Not Speak English	52	10.3	N/A	N/A
Child Welfare and Juvenile Justice Involvement				
Child Welfare Involvement During Treatment	56	11.1	11.4	N/A
JJ Involvement During Treatment	1	0.2	0.7	N/A

2. OPCC data comes from DCF's PIE system and includes children that received MATCH-ADTC; therefore, differences between MATCH-ADTC and OPCC might actually be of a greater magnitude if we were looking at OPCC excluding those receive MATCHADTC.

3. American Community Survey 2019 1 year estimates. Caution should be used with comparison to OPCC and MATCH-ADTC child demographics. Census race categories do not exclude Hispanic, therefore OPCC and MATCH racial demographics mirror the Census. Census language is only available by language spoken, not primary language. Age is percentage of children 0-17 years.

4. We recognize there are alternate terms for describing ethnicity. This report uses "Hispanic" and "Latino" to remain consistent with the way it is reported in the data system, which reflects the terminology in the U.S. Census.

5. Used Primary Language Inside of Home for child primary language.

# IV. QUALITY: CONSULTATION AND CLINICAL IMPLEMENTATION

Quality Improvement & Model Implementation

Cases are reported while they are active and open, but most of the QI reporting and fidelity monitoring is calculated based on children that complete treatment in a given period. In FY22, 329 children had a MATCH-ADTC episode that ended. For children discharged from MATCH in FY22, the mean number of visits was 17.3 (SD=14.38) and the average length of stay was 8.6 months (SD=6.47). For those completing MATCH, on average, clinicians spent 60.7% of time with children alone, 12.5% of time with caregivers alone, and 26.9% of time with children and caregivers together. Most children (96%) receiving MATCH-ADTC in the fiscal year had a measure of baseline symptoms, 68.1% had at least one first and last version of a child symptom assessment, and 7.6% had data on caregiver symptoms.

Quality Improvement Indicators

The MATCH-ADTC quality improvement (QI) indicators are all percentage-based: engagement (% attending four or more session), consistent care (% averaging 2 visits per month), complete assessment data (% with data at two time periods), and symptom improvement (% with reliable change from first to last assessment). They are calculated over six-month performance periods as shown in Figure 4. Three out of four statewide QI benchmarks were met throughout FY22: engagement, completing assessment data, and symptom improvement. Consistent care increased 12 percentage points between PP1 and PP2 and was nearly met in PP2.

Figure 4. Quality Improvement in FY22
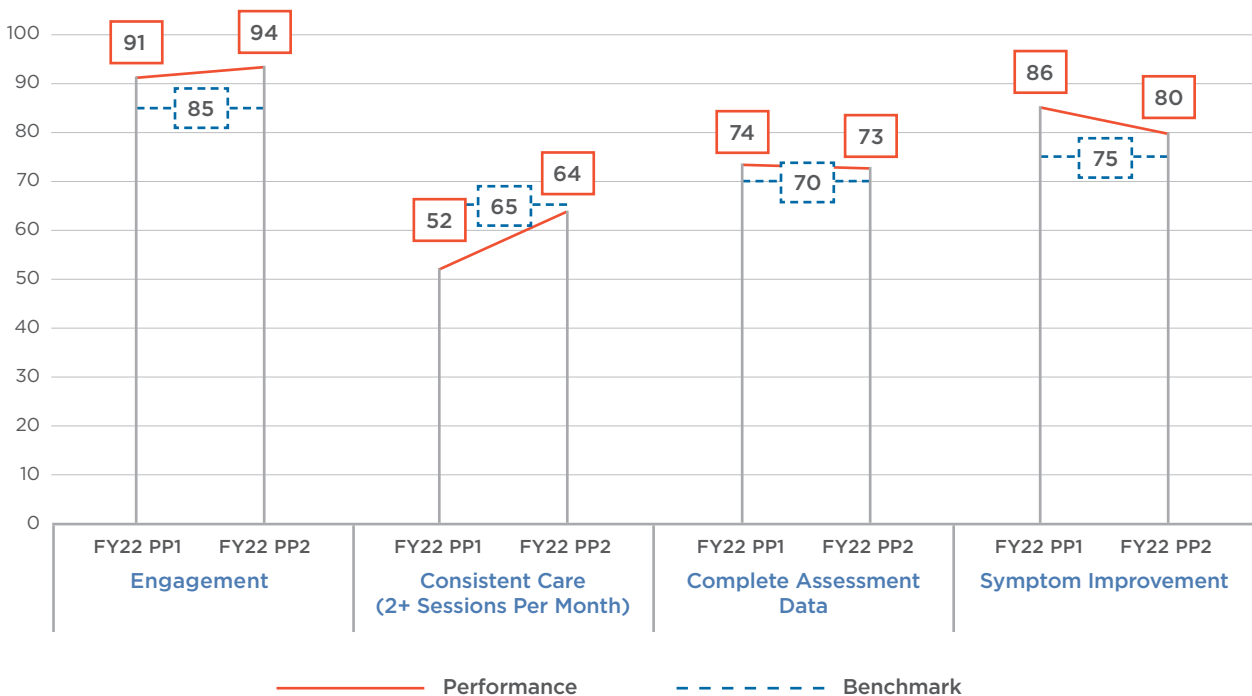
Top Problem Assessment

Of the 505 MATCH-ADTC treatment episodes open in FY 22, 88.5% of caregivers identified at least one top problem to work on during treatment, and 94.1% of children identified at least one top problem. Figures 5 and 6 below show the general topic areas of the top problem areas for children and caregivers.
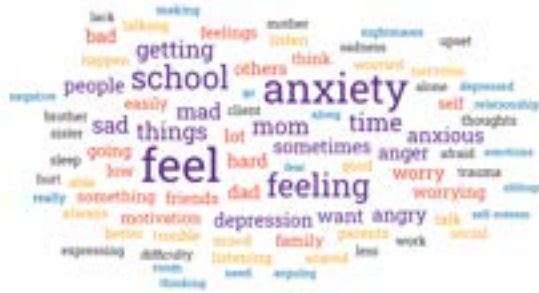
Figure 5. Child Reported Top Problems

Figure 6. Caregiver Reported Top Problems

Primary Protocol Area

Children completing MATCH-ADTC were most often treated with the Anxiety (123) or Depression (93) protocol areas (see Figure 7 below). Trauma (64) and conduct (53) were less common. **This fiscal year, there was a 31% increase in the percentage of children in the anxiety protocol area (38%) compared to the previous year (29%).**

Figure 7. Primary Protocol Area (PPA) by age and sex (n=321)

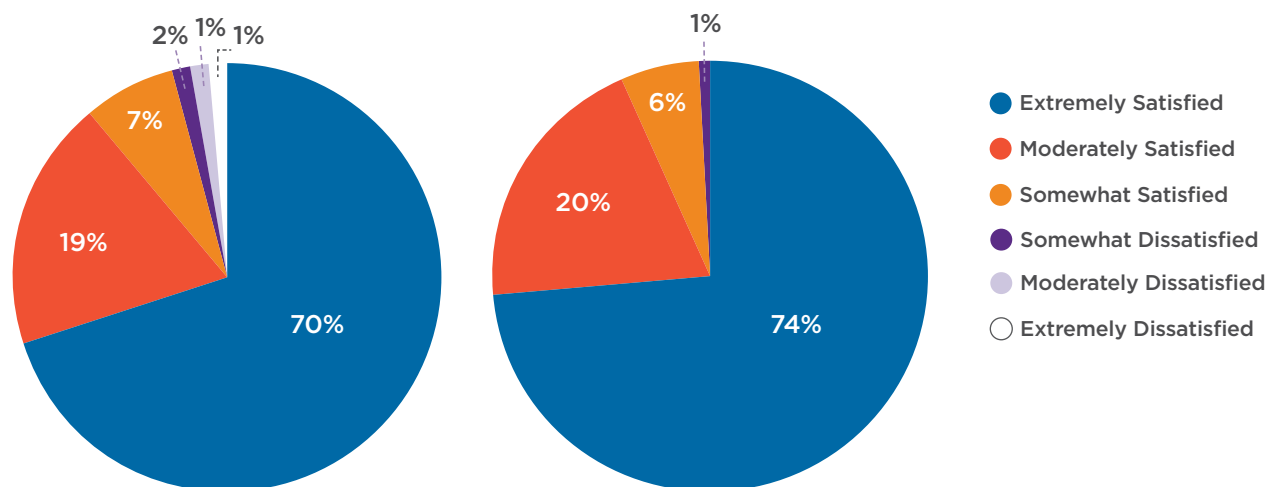Legend: ● Anxiety ● Depression ● Trauma ● Conduct
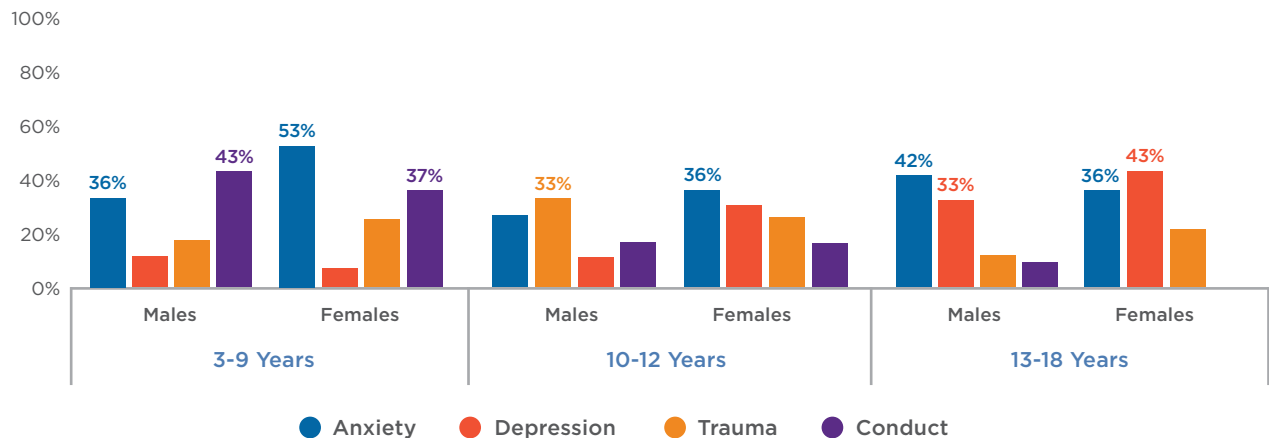
Satisfaction

Satisfaction data was collected from 44.2% of children and 52.3% of caregivers. Caregivers report high levels of satisfaction with MATCH-ADTC treatment. Children whose clinicians reported treatment completion at discharge were significantly more likely to have a satisfaction measure (74%) compared to those discharged for other reasons (39%) such as family termination or a higher level of care. Response rates were similar across demographic groups (age, sex, race/ethnicity). The responses to both measures are illustrated in Figures 8 and 9 below with 89% of children and 94% of caregivers indicating mostly or very satisfied with treatment.

Figures 8 & 9. Satisfaction Categories, Child-Report (left) Caregiver-Report (right)

- ● Extremely Satisfied
- ● Moderately Satisfied
- ● Somewhat Satisfied
- ● Somewhat Dissatisfied
- ● Moderately Dissatisfied
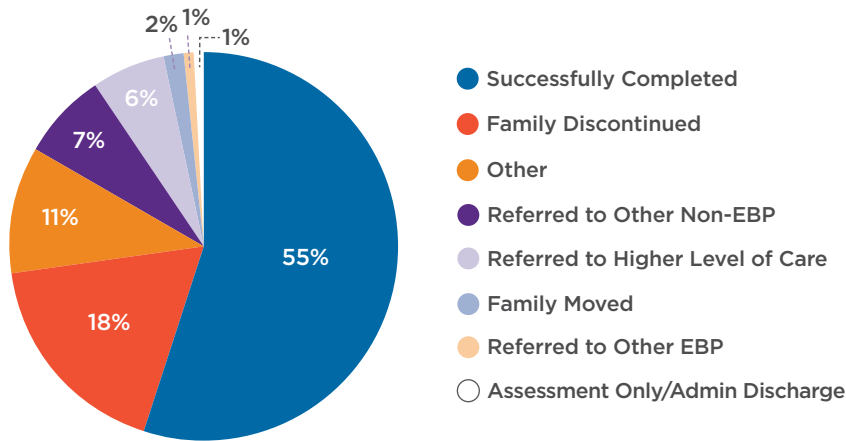- ○ Extremely Dissatisfied

V. OUTCOMES: IMPROVEMENT FOR CHILDREN RECEIVING MATCH-ADTC

Discharge Reason

During the fiscal year, 329 children ended their MATCH-ADTC treatment episode. Clinicians rated half of children (55%) ending treatment as "completing all EBP requirements." Children who did not complete all EBP requirements were most likely to not complete due to family discontinuing treatment (see Figure 10). **No differences were found across demographic groups (age, sex, or race/ethnicity) in rates of successful completion.**[6] These results are different from the previous two fiscal years where Hispanic children were significantly less likely to complete compared to White children.

Figure 10. Reasons for Discharge in FY22

- ● Successfully Completed
- ● Family Discontinued
- ● Other
- ● Referred to Other Non-EBP
- ● Referred to Higher Level of Care
- ● Family Moved
- ● Referred to Other EBP
- ○ Assessment Only/Admin Discharge

55%
18%
11%
7%
6%
2%
1%
1%

Clinical Global Impressions Scale

The Clinical Global Impressions Scale (CGI) Severity and Improvement scales were introduced in FY21 and were increasingly used in FY22. These are brief items that rate the child's severity at the start and end of treatment as well as amount of overall improvement at the end of treatment. They are not symptom-specific and they are completed by the clinician, unlike the assessments presented in the next section that measure specific symptoms by child and caregiver report. The CGI provides a high-level measure of changes in severity and overall improvement. On the CGI-Severity, 45.9% of clients changed from a more severe to a less severe category during the course of treatment (see Figure 11). **There were no differences by sex or race** as demonstrated in Figure 12. Further, **clinicians reported improvement for 85.9 percent of MATCH-ADTC clients** using the CGI.

6. Details on the statistical tests for all reported analyses can be found in Appendix B
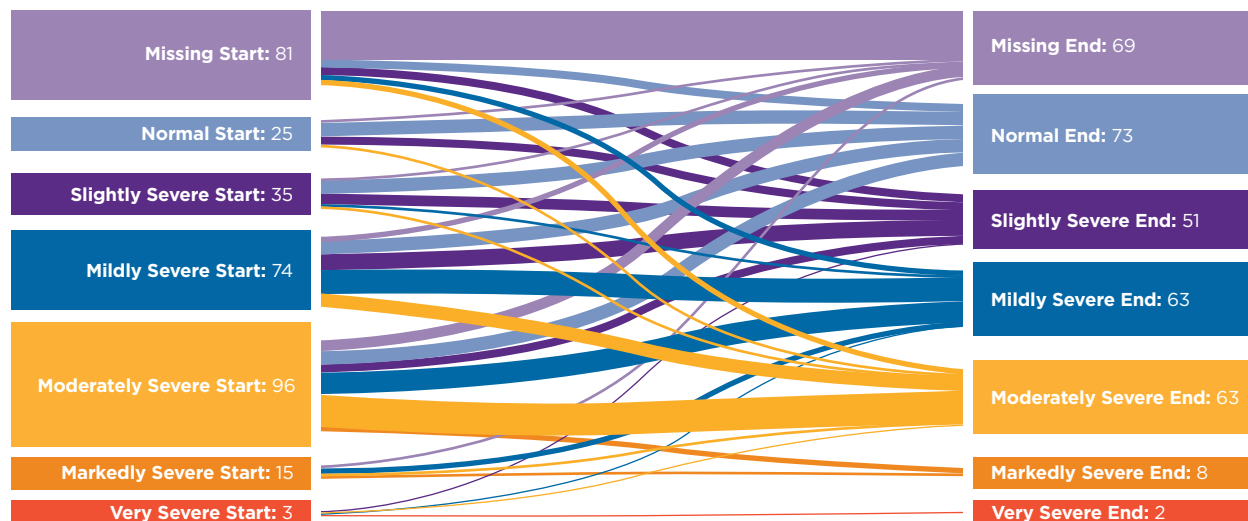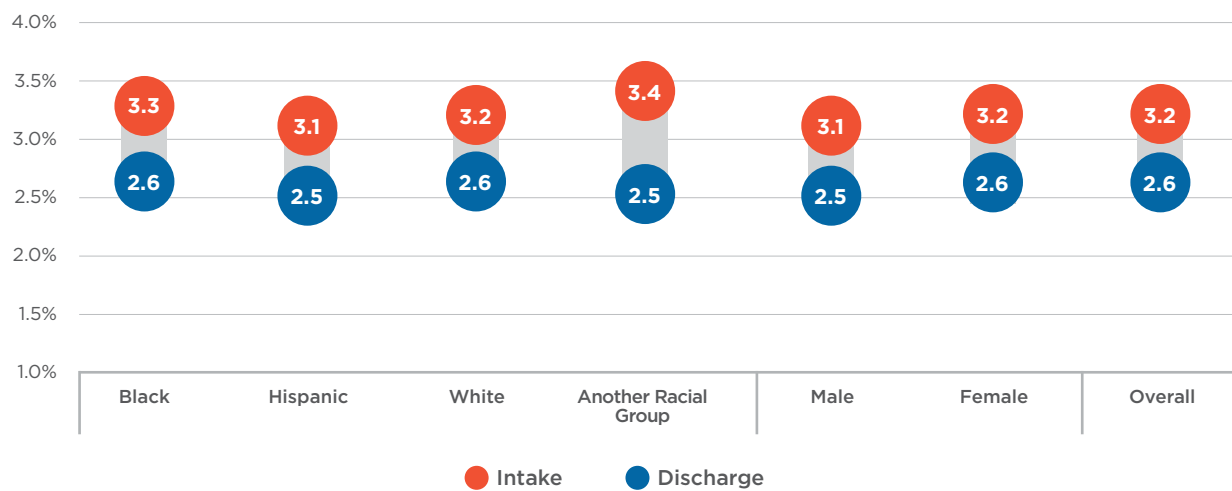
Figure 11. CGI Severity at Start/End of Treatment

Missing Start: 81	Missing End: 69
Normal Start: 25	Normal End: 73
Slightly Severe Start: 35	Slightly Severe End: 51
Mildly Severe Start: 74	Mildly Severe End: 63
Moderately Severe Start: 96	Moderately Severe End: 63
Markedly Severe Start: 15	Markedly Severe End: 8
Very Severe Start: 3	Very Severe End: 2

Figure 12. CGI Severity at Intake and Discharge by Subgroup

	Black	Hispanic	White	Another Racial Group	Male	Female	Overall
Intake	3.3	3.1	3.2	3.4	3.1	3.2	3.2
Discharge	2.6	2.5	2.6	2.5	2.5	2.6	2.6

● Intake ● Discharge

Symptom Improvement

Children receiving MATCH-ADTC were assessed initially on problem severity, functioning, and one other symptom category (e.g., anxiety, depression), each with available child and caregiver report versions. Clinicians then selected the most appropriate measures to use periodically; this means not every child was re-assessed on every measure. When children were assessed at two or more time points, change scores were calculated. Children completing MATCH-ADTC demonstrated significant reductions in anxiety, post-traumatic stress, and problem severity symptoms, and improvements in functioning. The details on the change scores, effect sizes, and rates of remission are shown for all measures in Table 4. **For children receiving MATCH-ADTC, 82.1% experienced reliable change on at least one measure.** The highest rates of reliable change and remission were in anxiety symptoms followed by post-traumatic stress symptoms.

Table 4. Descriptives and change scores for all assessment measures

| Assessment Name	Construct Measured	Above Cutoff	Intake Mean (S.D.)	Last Mean (S.D.)	Change Score	T-Score	Effect Size (Cohen's D)	Remission
CPSS V Child		33	23.8	14.54	-9.28**	-6.24	Medium	24/33
(n=98)		33.67%	(13.56)	(12.6)			-0.63	72.7%
CPSS V Caregiver	Trauma Symptoms	20	21.72	12.15	-9.01**	-6.03	Medium	16/20
(n=76)		26.3%	(12.88)	(9.56)			-0.69	80.0%
YCPC		-	18.25	13.55	-	-	-	-
(n=8)		-	(10.63)	(20.07)			-	-
PROMIS Child		15	24	15.85	-8.15**	-4.87	Medium	15/15
(n=39)	Anxiety Symptoms	38.5%	(7.84)	(8.04)			-0.77	100.0%
PROMIS Caregiver		17	26.03	15.06	-10.97**	-5.66	Large	16/17
(n=29)		58.6%	(8.83)	(7.20)			-1.05	94.1%
SMFQ Child		26	10.26	7.09	-3.16*	-2.85	Small	15/26
(n=43)	Depressive Symptoms	60.5%	(6.03)	(5.26)			-0.43	58%
SMFQ Caregiver		n/a	9.69	6.59	-2.73	-1.60	Small	n/a
(n=26)			(5.24)	(6.49)			-0.31	
Ohio Problem Severity Child		44	21.68	16.25	-5.13**	-4.51	Small	24/44
(n=115)	Severity of Internalizing/ Externalizing Behaviors	38.26%	(11.44)	(11.76)			-0.42	54.54%
Ohio Problem Severity Caregiver		68	21.53	14.68	-6.48**	-6.85	Small	46/68
(n=194)		35.05%	(12.70)	(11.54)			-0.49	67.64%
Ohio Functioning Child		23	55.84	62.41	6.57**	5.97	Medium	22/23
(n=120)	Child's Adjustment and Functioning	19.17%	(12.48)	(10.00)			0.54	95.65%
Ohio Functioning Caregiver		44	53.67	58.42	4.75**	5.819	Small	27/44
(n=201)		21.89%	(13.42)	(13.14)			0.41	61.36%

Effect sizes were derived using Cohen's D as follows: .2 = small, .5 = medium, .8 = large
**Indicated significance. Response rates for YCPC too low for significance testing.

Clinical Improvements Across Groups

In addition to documenting the overall rates of symptom reduction and functional improvement, it is important to monitor if any subgroups are experiencing disproportionate outcomes. An analysis was done to look at the effect of demographics (age, race/ethnicity, sex) on any reliable symptom improvement across all measures. This is shown in Figure 13. **Consistent with the previous FY, for overall symptom improvement, there were no significant differences across subgroups.**

Figure 13. Reliable Change on Any Measure, Across Groups
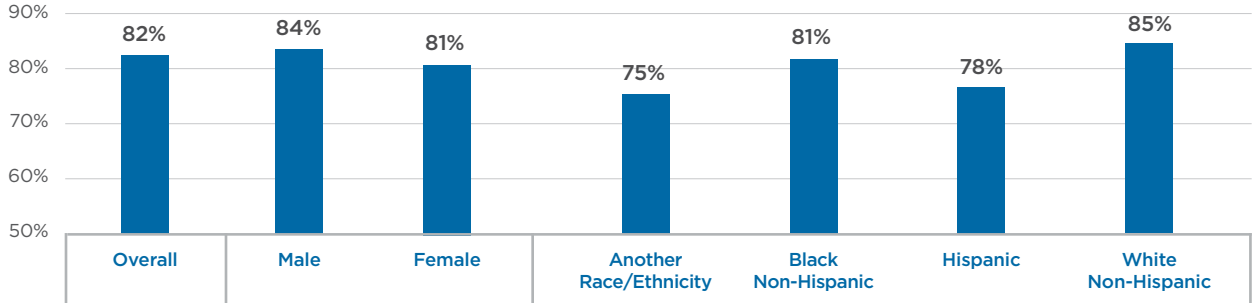
While there were not differences across groups in overall likelihood of experiencing change, it is still important to explore if there are differences in the magnitude of change. To analyze this, multiple regressions were done on Problem Severity and Functioning change scores, controlling for trauma exposure, initial symptom scores, and discharge reason. For child-reported Ohio scores, **Hispanic children reported significantly lower reductions by about 5 points in Problem Severity** compared with their White peers. No differences were found on the caregiver-report for Problem Severity or on either report of Functioning.

VI. SUMMARY AND RECOMMENDATIONS

MATCH-ADTC is available across the state for children living with anxiety, depression, trauma, and/or conduct symptoms. This year we saw an increase in the proportion of children receiving MATCH for anxiety (29% FY21 vs. 38% FY22), a trend that mirrors literature on the effects of COVID-19 on children's mental health.[7] There were 505 children receiving MATCH-ADTC in FY22, which is a decrease from previous years. Smaller MATCH team sizes compared to pre-pandemic levels, and a reduction in the percentage of active MATCH clinicians who saw at least one case (77% FY21 vs. 65% FY22) may explain the decline in children served between FY20 (610), FY21 (595), and this FY (505). Data burden is also likely a factor as additional assessments and session information is required and entering this into PIE can be a barrier; this might also mean children are receiving MATCH-ADTC treatment but are not counted in the numbers as their information is not captured in the data system.

Anecdotally, providers have been reporting high staff turnover due to pandemic related stress, trauma, and secondary traumatic stress, a trend we began to see in FY21 and continued in FY22. Agency leadership received on-going guidance identifying tools and strategies to monitor and ensure effective model delivery, with an emphasis on implementation support. Recognizing the number of children receiving MATCH-ADTC slightly decreased from last year may be due to the pandemic related workforce challenges and stressors and continued implementation support would benefit our network of providers conducting MATCH-ADTC treatment.

Despite these challenges, MATCH-ADTC demonstrated strong outcomes. Children with critically high symptoms at baseline experienced high levels of remission for the following symptom types: post-traumatic stress (73% child-report, 80% caregiver report) and problem severity (54% child, 68% caregiver). Children with anxiety measures experienced the highest levels of remission (100% child, 94% caregiver), though rates of using the anxiety measure were low. Continuing to encourage clinicians to utilize the PROMIS with children with anxiety will give a better picture of symptom improvement in MATCH-ADTC.

It is important to examine outcomes by race/ethnicity and other demographic differences where longstanding inequities in behavioral health services exist. Comparing the population served in OPCCs to those receiving MATCH-ADTC, lower percentages of Black youth and Spanish-speaking youth received MATCH-ADTC. Once children did begin MATCH-ADTC treatment, most analyses revealed no differences across racial/ethnic and other demographic groups for MATCH-ADTC. Except for the problem severity symptoms, rates of improvement were largely comparable across groups, after controlling for successful completion. This year, Hispanic children were just as likely to complete MATCH compared to their White counterparts, an improvement in equitable treatment that may have been a result of educating the provider network about disparities identified in MATCH treatment from the previous year. Training clinicians who represent communities of color is important in engaging children and families of color who may benefit from MATCH-ADTC. Multicultural perspectives remain vital for engaging and sustaining diverse families in treatment and will continue to be an essential focus for equitably engaging across cultures.

7. Nearchou, F. et al. (2020). Exploring the Impact of COVID-19 on Mental Health Outcomes in Children and Adolescents: A Systematic Review. International Journal of Environmental Research and Public Health 17(22),8479. https://doi.org/10.3390/ijerph17228479

Recommendations

Based on the trends noted in this report, the following goals and recommendations are made for continued support of the MATCH-ADTC statewide network in FY23:

Increase the number of children receiving MATCH:

- Establish expectations on the number of children agencies clinicians should use MATCH-ADTC with each year, taking into consideration other EBTs they might be practicing.

- Monitor MATCH-ADTC caseloads for clinicians to ensure those trained are maintaining their MATCH-ADTC clinical skills and continuing to deliver the model with children and families.

- Develop strategies to assist agencies in entering data into PIE to reduce data burden and improve clinical workflow. Data burden is often identified as a reason why children are not receiving MATCH-ADTC or not being counted in the system; these efforts will ensure that all children being seen in MATCH are entered and an accurate number of MATCH cases is reported.

- Establish in-house expertise within each agency with an emphasis on building agency capacity to ensure equitable access to all children and families in need of MATCH services.

- Establish strategies to identify and overcome barriers to recruitment and retention, along with access to resources for improving workforce development for clinicians and agencies delivering EBTS.

Ensure equitable access to and experiences in MATCH-ADTC treatment for all children:

- Analyze and report on use of MATCH-ADTC within the overall outpatient system to understand which groups, either by race/ethnicity, primary language, sex or age, are more likely to receive MATCH-ADTC.

- Develop data reports that can be used in site-based consultation to help agencies monitor any disparities or inequitable trends in who is receiving MATCH-ADTC.

- Offer bilingual clinicians implementing MATCH, resources, and opportunities to collaborate and discuss engagement of Hispanic children and families in treatment; the lower rates of Hispanic children completing MATCH-ADTC in previous years was not seen in FY22, perhaps attributable to these efforts.

- Explore inclusion of a racial trauma module or other adaptations to better address experiences of racism and discrimination in the MATCH-ADTC model.

Maintain high-quality in MATCH-ADTC service delivery:

- Establish an agency roll-out plan for new clinicians joining the MATCH team to ensure those trained are familiarized on the use of the PIE database, data collection, clinical consultation process, resources, and overall MATCH implementation to support quality care to the children and families served.

- Ensure supervisors at each agency complete the MATCH Associate Consultant training and consultation; high rates of staff turnover has meant many agencies lost this expertise so FY23 will focus on building agency capacity to support their MATCH teams.

- Collaborate with Harvard University to develop advanced training opportunities for MATCH Associate Consultants to support quality supervision and MATCH implementation.

Continuously Improve Outcomes for Children and Families:

- Highlight the appropriateness and effectiveness of MATCH-ADTC for children with anxiety; as outpatient agencies continue to see increases in the rate and severity of anxiety, sharing the successes within the MATCH-ADTC protocol might help agencies better identify children who might benefit and engage them in treatment.

- Provide training and resources to support clinicians in making data-driven decisions in treatment with an emphasis on the use of the symptom-specific assessments included to measure anxiety and depression symptoms. Increased use of these assessment tools supports data-driven decision making.

- Add assessment options to measure conduct symptoms in children. Currently there is no conduct-specific measure. Improvements on symptom-specific measures tend to be greater than on the more global Ohio scales.

- Develop a guide to address provider concerns and frequently asked questions about the CGI scale that adheres to data requirements and supports clinical best practices across outpatient services. Use the CGI scores on Severity and Improvement to compare outcomes in MATCH-ADTC to treatment as usual.

Conclusions

MATCH-ADTC continues to demonstrate strong and positive outcomes. Children completing MATCH-ADTC experience high levels of symptom improvement and these improvements were largely comparable across groups. The flexibility of the model and its ability to address the most common primary presenting problems provides a strong foundation for developing a model to improve care for all children in outpatient settings. At a time when the severity of behavioral health concerns is increasing amidst workforce shortages, MATCH-ADTC provides a structured approach to effectively and efficiently deliver needed treatment and improve outcomes for children and families.

VII. APPENDIX A: ACTIVITIES AND DELIVERABLES

The Coordinating Center has worked to support the MATCH-ADTC implementation goals through the following activities carried out in FY22.

1. Training, Consultation, & Credentialing

- Our contracted Harvard University trainer and Connecticut Associate Trainers provided two MATCH-ADTC trainings (14 days) in FY22 (38 new clinicians trained).

- Initiated one day MATCH-ADTC Booster Training for previously trained clinicians and 13 clinicians attended.

- In January 2022, 2 virtual sessions were provided to (5) MATCH supervisors to be trained as an in-house MATCH Associate consultants.

- MATCH-ADTC Associate Consultant Consultation started was initiated in March 2022 and (5) consultation meetings were conducted; consultation is scheduled to complete in the fall of FY23.

- MATCH (12) consultation calls were led by a MATCH Associate Trainer and Harvard University to newly trained MATCH clinicians.

- A cohort of two MATCH-ADTC trained individuals successfully completed the Train-the-Trainer Training resulting in one statewide level trainer and one agency level trainer.

- The Connecticut Associate Trainers conducted both MATCH-ADTC trainings in the Fall and Spring of FY22.

- Coordinated registration, attendance, and CEUs for MATCH-ADTC and OPCC trainings.

- Maintained a statewide MATCH-ADTC clinician credentialing process and requirements to increase the number of clinicians that complete all training and case requirements; 44 active clinicians were Connecticut credentialed by the end of FY22.

- Maintained a training record database to track training and consultation attendance of all MATCH-ADTC staff, as well as other credentialing requirements for all MATCH-ADTC clinicians; in FY22 there were 182 active clinicians.

- Convened fourteenth annual statewide EBP virtual Conference, an evolution of the original MATCH-ADTC Conference, for 395 unique attendees from community providers, DCF, CSSD staff, and other partners in the initiative.

2. Implementation Support, Quality Improvement, & Technical Assistance

- Produced reports for two QI performance periods based on developed MATCH-ADTC QI Indicators and Benchmarks.

- Utilized a QI process of implementation consultation based on emerging implementation science field and needs of agencies.

- Developed agency-specific QI plans using SMARTER Goals focused on agency performance on QI benchmarks and strategies to improve access, quality and service delivery.

- Provided 74 implementation consultation support meetings with providers to ensure sustainment of high-quality services.

- Implemented and convened 3 Coordinator meetings focusing on sharing implementation and successful meeting strategies.

- Provided updates to all MATCH-ADTC participants through a monthly Data Dashboard.

- Distributed additional MATCH-ADTC books, materials, and resources to all MATCH-ADTC teams.

3. Data Systems

- Provided enrollment assistance to providers when MATCH clinicians registered for the new clinician training.

- Continued improvements to the PIE system have been made based upon agency feedback and as possible with available funding.

- Maintained a public directory site that provides a searchable, public listing of MATCH-ADTC providers through EBP Tracker (tinyurl.com/ebpsearch).

- Maintained a map, public listing of MATCH-ADTC providers on CHDI's website.

- Monitored, maintained, and provided technical assistance for online data entry for all MATCH-ADTC providers in PIE.

- Provided site-based data assistance and reports as requested.

4. Agency Sustainment Funds

- Administered and distributed $319,610.48, in performance-based sustainment funds to agencies (32% of total contract funds) to improve capacity, access and quality care.

- While these financial incentives are intended to partially offset the increased agency costs of providing an evidence-based practice, agency leadership reports that they do not adequately cover the costs of providing MATCH-ADTC.

- Developed, executed, and managed contracts with each of the 23 MATCH-ADTC providers eligible for financial incentives to detail implementation expectations, data sharing, and financial incentive details.

VIII. APPENDIX B: REGRESSION TABLES

Table B1. Logistic regression analyses for predicting successful clinical discharge from selected background characteristics.

Predictors	N	β	SE	Wald	e^B(95% CI)
Hispanic	59	0.000	0.333	0.000	1.000 (0.521, 1.918)
Another Race Non-Hispanic	12	-0.104	0.624	0.028	0.902 (0.266, 3.060)
Black Non-Hispanic	19	0.660	0.543	1.477	1.935 (0.667, 5.614)
Sex (Male)	80	0.169	0.320	0.278	1.184 (0.632, 2.219)
Child Age	204	-0.031	0.053	0.345	0.969 (0.874, 1.075)
Trauma Exposure-THS Child	204	-0.039	0.059	0.434	0.962 (0.857, 1.080)
Trauma Exposure-THS Caregiver	204	-0.082	0.068	1.477	0.921 (0.806, 1.052)
Constant		1.013	0.703	2.077	2.754

*p<.05   As compared to White Non-Hispanic Females
**p<.01

Table B2. Multiple regression analyses of selected demographic variables on change in outcome scores.

Predictors	Change in Ohio Child Functioning			Change in Ohio Caregiver Functioning		
	β	SE	95% CI	β	SE	95% CI
Constant	-0.554	5.185	(-10.839, 9.732)	-9.143	4.145	(-17.328, -0.957)
Trauma Exposure	0.456	0.366	(-0.270, 1.181)	0.455	0.336	(-0.209, 1.119)
Hispanic	0.824	2.485	(-4.105, 5.754)	1.559	1.909	(-2.210, 5.328)
Another Race Non-Hispanic	11.432*	4.992	(1.529, 21.334)	0.037	3.855	(-7.575, 7.649)
Black Non-Hispanic	-0.740	4.138	(-8.948, 7.469)	-2.133	3.220	(-8.493, 4.227)
Sex (Male)	2.606	2.453	(-2.26, 7.471)	3.485	1.893	(-0.252, 7.223)
Child Age	-0.040	0.380	(-0.794, 0.714)	**0.591***	0.283	(0.032, 1.151)
Child Discharged as "Successful"	**6.428****	2.260	(1.946, 10.911)	**6.244****	1.748	(2.791, 9.696)
R^2	0.139			0.112		
F	2.334			2.908		

*p<.05   Note: Another Race Non-Hispanic group was small, so results should be interpreted with caution
**p<.01   and conclusions are not drawn about the significance for this group.

Table B3. Multiple regression analyses of selected demographic variables on change in outcome scores.

Predictors	Change in Ohio PS Child			Change in Ohio PS Caregiver		
	β	SE	95% CI	β	SE	95% CI
Constant	5.689	5.282	(-4.796, 16.174)	-0.189	4.941	(-9.950, 9.572)
Trauma Exposure	-0.071	0.373	(-0.811, 0.669)	-0.606	0.401	(-1.398, 0.185)
Hispanic	**5.312***	2.532	(0.286, 10.337)	1.106	2.275	(-3.388, 5.601)
Another Race Non-Hispanic	-9.352	5.086	(-19.447, 0.743)	4.933	4.595	(-4.145, 14.010)
Black Non-Hispanic	3.141	4.216	(-5.227, 11.51)	0.803	3.839	(-6.780, 8.387)
Sex (Male)	-1.854	2.499	(-6.814, 3.106)	-2.604	2.256	(-7.061, 1.853)
Child Age	-0.691	0.387	(-1.460, 0.078)	-0.049	0.338	(-0.716, 0.619)
Child Discharged as "Successful"	**-5.766***	2.302	(-10.336, -1.197)	**-5.444***	2.084	(-9.561, -1.327)
R^2	0.171			0.068		
F	2.832			1.608		

*p<.05 Note: Another Race Non-Hispanic group was small, so results should be interpreted with caution
**p<.01 and conclusions are not drawn about the significance for this group.

Table B4. Logistic regression analyses for predicting any child symptom RCI from selected background characteristics.

Predictors	N	β	SE	Wald	e^B(95% CI)
Child Discharged as "Unsuccessful"	115	-1.379**	0.310	19.741	0.252 (0.137, 0.463)
Hispanic	59	-0.055	0.352	0.025	0.946 (0.474, 1.887)
Another Race Non-Hispanic	12	-0.706	0.667	1.121	0.494 (0.134, 1.824)
Black Non-Hispanic	19	-0.036	0.541	0.004	0.965 (0.334, 2.785)
Sex (Male)	80	0.141	0.337	0.175	1.152 (0.595, 2.229)
Child Age	204	0.037	0.056	0.421	1.037 (0.929, 1.158)
Trauma Exposure-THS Child	204	-0.102	0.063	2.611	0.903 (0.798, 1.022)
Trauma Exposure-THS Caregiver	204	0.121	0.074	2.670	1.128 (0.976, 1.304)
Constant		0.493	0.738	0.446	1.637

*p<.05 As compared to White Non-Hispanic Females. Note: Another Race Non-Hispanic group was small, so results
**p<.01 should be interpreted with caution and conclusions are not drawn about the significance for this group.

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