Using Behavioral Insights to Increase Youth Use of Workforce Services in Virtual Contexts: Final Report

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Acknowledgments and Disclaimer

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About Behavioral Insights: Behavioral insights is an approach to policy and program improvement that combines insights from cognitive science, psychology, and social science with empirical testing of results to discover how people make choices and act on decisions. The Department of Labor Behavioral Insights (DOLBI) team partners with agencies to address problems that matter, learn what works, and increase capacity to apply behavioral insights.

What is this study?

Goals. Learn how to improve service use and secure continued youth engagement in youth workforce programs, especially in the context of remote service delivery.

Importance. Youth career readiness and labor market participation are vital for economic prosperity, but youth disconnect from school and work at high rates.

Learning partnership. The Ohio Department of Jobs and Family Services' Comprehensive Case Management and Employment Program (state leadership and 11 counties) and the DOLBI team.

Intervention. A series of text messages, one per week for 12 weeks starting a week after program registration. Messages were sent from a centralized and automated messaging system at the state level. All participants received the same sequence of messages.

Study design: An experimental study (a randomized controlled trial in which half the participants received messages [treatment group] and half did not [control group]) + implementation study.

Study scope: 530 participants from 11 counties, enrolled between November 2021 and April 2022.

What did we learn?

Impact Study Findings:

Within the first 60 days, weekly text messages informed by behavioral science:

▶ Increased number of services started   ✅ Increased services completed

Had higher impacts for participants who were:

⬇⬇ Younger than 18   📖 Basic skills deficient   👥 Not parents

Had no impacts on the number of services started or completed within 90-days.

Implementation Study Findings:

Partners did not find the study burdensome to implement.

Among participants who responded to texts, reactions ranged from positive to confused to negative.

What's Next: State and local partners want to partner to test whether these automated messages can be personalized by coaches. They also want to explore how behavioral insights can be used to improve program intake and orientation, and to identify and remove steps that may be needlessly burdensome for participants.

Are study insights relevant for populations I care about?

Study participants randomized into the study had the following characteristics:

Exhibit ES.1. Characteristics of study participants

GENDER		
Male	**Female**	**N/A**
30%	69%	1%

AGE	
18 and younger	32%
19-20	22%
21-23	33%
24+	13%

RACE	
Black/African American	77%
White	18%
Other	13%

IN-SCHOOL STATUS	
In school	**Not in school**
29%	71%

EDUCATIONAL ATTAINMENT	
Less than Grade 9	32%
Grade 9	6%
Grade 10	15%
Grade 11	18%
Grade 12 (no diploma)	3%
High school diploma	30%
Some postsecondary	4%

BARRIERS	
Basic skills deficient	19%
Has disabilities	20%
Lack transportation	94%
Parenting	41%
Pregnant	16%
Single parent	36%

Source: Ohio Workforce Case Management System data on study sample.

Notes: This table exhibit captures the characteristics of the 517 people randomized into the study for whom baseline data were available. Only three race categories were available using current data. Race and education categories reported do not sum to 100 percent because participants can select more than one category. Because the program includes follow-up services for 1 year after program exit, some participants may receive services past the age of 24.

I. Introduction

Improving career readiness and job access for youth and young adults is vital. Millions of low-income Americans need better access to high-quality career pathways to escape poverty. This is no easy task— economic opportunity has shrunk dramatically in the United States in the past half-century (Chetty et al. 2016). Meanwhile, employers face rising shortages in the supply of skilled workers, making it harder to compete on the global market (World Economic Forum 2021). As the nation's workforce ages (BLS 2021), the career readiness and labor force participation of youth matters more than ever.

Recent trends are discouraging. Labor force participation among young adults ages 16-24 has declined steadily over the last two decades. It is likely to worsen in the coming one (BLS 2022). During the first year of the Covid-19 pandemic, the proportion of youth who disconnected from both work and school spiked, doubling between 2019 and 2020 (Lewis 2022). Disconnection rates were also uneven: Native Americans and African American youth disconnected at higher rates than Whites (Lewis 2022, Youth.gov). In 2021, youth disconnection rates returned to pre-pandemic levels of over 10 percent.

Recognizing this urgency, national, state, and local agencies invest in workforce programs to help low-income young adults prepare for post-secondary and career success. However, getting low-income youth to participate in and fully utilize these programs can be challenging, even in the best of times (Dunham et al. 2020). Our listening sessions in 2020 with workforce boards suggested that these challenges became acute during the shift to remote service delivery during the pandemic.

The U.S. Department of Labor (DOL) has previously used behavioral insights to improve program engagement and service take-up among adults (see Appendix A for overview, past work, and resources). Behavioral insights are an approach to policy and program improvement that combines insights from cognitive science, psychology, and social science with empirical testing of results to discover how people make choices and act on decisions. DOL's Chief Evaluation Office (CEO) engaged our study team to test whether behavioral insights could explain the barriers young adults face in program participation and inform strategies to improve service use.

We partnered with Ohio's Comprehensive Case Management and Employment Program (CCMEP) leadership and 11 counties in Ohio that wanted to improve program impacts. CCMEP provides services to low-income young adults to help them develop career paths, become employed, and move out of poverty. We tested whether sending weekly text messages informed by behavioral science over 12 weeks could improve CCMEP service use. We found compelling, statistically significant results (see Exhibit I.1).

Exhibit I.1. Selected study findings

Within the first 60 days, weekly text messages informed by behavioral science:

▶ Increased number of services started   📄 Increased services completed

Had higher impacts for participants who were:

↓↓ Younger than 18   📖 Basic skills deficient   👥 Not parents

A. Study setting and key program features

The Comprehensive Case Management and Employment Program is an innovative effort in Ohio that seeks to help low-income young adults access high-demand career pathways. CCMEP braids funding from Temporary Assistance for Needy Families (TANF) and the Workforce Innovation and Opportunity Act (WIOA) youth programs to offer a comprehensive set of tailored services. Below we describe key features of the program to help readers understand the setting of our study and its relevance to their own contexts. Appendix Exhibit B.1 presents a logic model for CCMEP.

Goals. The program seeks to help participants develop skills, find employment, and advance along career paths. The end goal is to improve low-income individuals' access to rewarding career pathways and break cycles of poverty.

Target population. The program targets 14- to 24-year-olds who are low-income. While the program is available to voluntary participants who meet eligibility criteria, it is mandatory for two groups: (1) low-income and out-of-school youth who are registered for WIOA and face barriers to employment; and (2) work-eligible Ohio Works First (TANF) participants. The PY2021 annual CCMEP report suggests that the 18,771 participants served by the program in Program Year 2021 had the following characteristics at enrollment: a majority (66 percent) were female, 35 percent were 18 and younger, and 51 percent were African American, and 51 percent were not in school. They faced a range of barriers: 45 percent were basic skills deficient; 25 percent were single parents; and 13 percent had disabilities (CCMEP 2021)

Scope. In 2021, the program served over 18,000 participants. A small fraction of CCMEP participants enroll in the program voluntarily (less than 4% statewide). Most are required to participate as a condition of receiving support from TANF or WIOA. These percentages can vary from year to year. While all 88 counties in Ohio offer CCMEP, nearly half of the 18,779 participants served statewide in PY 2021 were in just five counties: Hamilton (13%), Lucas (10%), Franklin (10%), Cuyahoga (9%), and Montgomery (7%).

Administration. Counties, rather that the state, administer the CCMEP program. This gives Ohio's 88 counties the flexibility to tailor service delivery to the needs of their local communities.

Service Model. CCMEP provides employment, training services and other supportive services that are based on a comprehensive assessment of each individual participant's employment and training needs. Exhibit I.2 shows the menu of 14 services that can be made available to CCMEP participants and program flow. The exact mix of services and flow varies county to county.

Exhibit I.2. Services available through CCMEP and customer flow

Services	
▪ Work experience opportunities including paid employment	▪ Developing and improving soft skills, such as professionalism and communication
▪ Setting education and employment goals	▪ Life skills experiences, such as parenting groups, financial management and healthy eating
▪ Education and employment incentives	▪ Leadership development opportunities
▪ Training and education opportunities	▪ School dropout strategies
▪ Resume assistance	▪ Supportive Services including transportation & clothing
▪ Job search help	▪ Case management
▪ Interview preparation	

Customer flow

Outreach/Application → Eligibility determination → Assessment → Individual Opportunity Plan

Follow-up for 1 year ← Program exit ← Case management and service receipt

Research partnerships. State CCMEP staff and participating counties have a learning-centric approach to continuous program improvement. The state agency and various counties have participated in various research-practitioner partnerships. These include, but are not limited to, an evaluation of CCMEP funded by the Arnold Foundation and a partnership to implement Goal4It with Mathematica.

B.   Study goals and research questions

Our goal for the study was to test how behavioral insights can enhance service engagement and completion among young adults participating in workforce programs in a remote context. We wanted to identify scalable strategies that may be effective in diverse contexts. Below we identify three kinds of research questions for this effort (see Box 1).

Primary research question: Can a text message-based engagement strategy drawing on behavioral science improve service take-up among CCMEP participants?

Secondary research question: Does the intervention increase the likelihood of completing at least one program service?

Exploratory research questions:

1.   Do the effects of the intervention vary for participants with different characteristics?

2.   What can we learn about the implementation of the intervention?

> **Box 1. Types of research questions**
>
> **Primary.** These are questions for which we have hypotheses for anticipated results and anticipate sufficient power to detect expected changes.
>
> **Secondary.** Questions for which we have hypotheses about anticipated results but do not have sufficient sample size or power to detect expected impacts.
>
> **Exploratory**. Questions for which we do not have a priori hypotheses about the direction or magnitude of impacts.

We co-developed these research questions with the state and focused on outcomes that program administrators cared about. To guide our work with our state and county partners, we used the six-step process, shown in Exhibit I.3 and developed for the DOLBI project (Darling et al. 2017), to design and implement behavioral interventions.

Exhibit I.3. Six-step process

As detailed in the individual chapters, we worked closely and collaboratively with the state CCMEP and ODJFS program administrators, participating counties and CEO, to accomplish the following:

1. **Understand** areas in which program performance could be improved.

2. **Diagnose** potential behavioral barriers (features of program design or context that lead to counterproductive decisions or behaviors among the target population).

3. **Design** interventions that address those barriers and evaluations to determine whether the interventions work.

4. **Support** implementation of the behavioral intervention.

5. **Test** the intervention's effectiveness.

6. **Learn** from and share the findings.

The rest of this report describes the intervention and evaluation design (Chapter II), presents key findings (Chapter III), and discusses future directions for learning (Chapter IV).

II. Study Design

We designed this study to build evidence on whether applying insights from behavioral science could improve young adult participation and service use in workforce services. We partnered with Ohio because state and county leadership were committed to increasing youth participation in the CCMEP. They were interested in learning about the effectiveness of text messaging and hoped that findings would inform state decisions on whether to purchase mass texting capability and what features to integrate in a new case management mobile app. We began discussions with the state in early 2021, designed the intervention and study during the spring and summer, recruited counties in the summer of 2021, and launched the study in the winter of 2021. We conducted sample intake between November 2021 and April 2022 and collected and analyzed data through December 2022.

A. Intervention design: Content and process

Our intervention consisted of a sequence of 12 text messages. Participants received one message a week, starting a week after their official registration in the program. Exhibit II.1 displays the messages we developed and the behavioral strategies we adopted.

Exhibit II.1. Behaviorally informed text messages for CCMEP participants

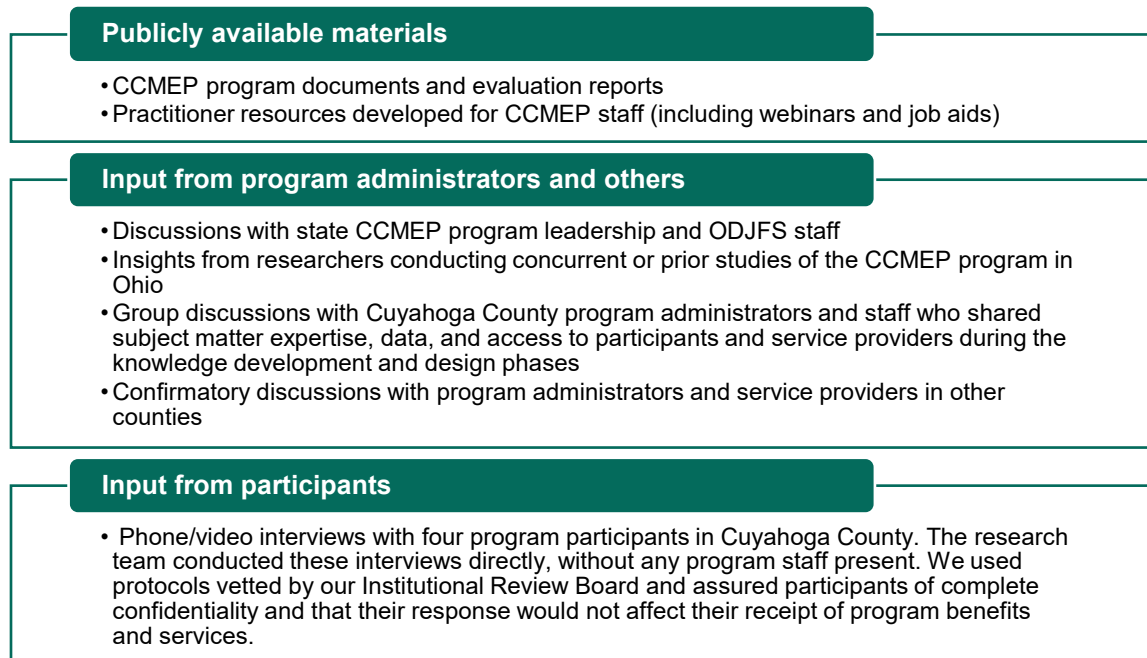|	Message content and behavioral strategy
Week 1	Hi, this is Gerrie from the Young Adult Employment Program (CCMEP). Congrats on making it into our program! We are excited to start this journey with you! See how we've helped people thrive: https://youtu.be/ivS0pqzFEoA. *Behavioral Strategy:* Fresh start, self-efficacy, and positive self-image through warm welcome and congratulations, leveraging social proof by providing testimonials from peers.
Week 2	You did it! You got through the paperwork! Now comes the good part - a great career coach and rich supports to help you get a fresh start on your goals: ▪ GED and training ▪ Paid work experiences & internships ▪ Mentoring, career & goal planning ▪ Childcare, transportation & more To keep your free access to all this and to stay on track, please attend your appointments and call your career coach when you can't make them. *Behavioral Strategy:* Celebrating persistence through adversity, making program attractive and increasing salience of benefits, emphasizing fresh starts, and invoking pivot away from costs (paperwork) to benefits (services), leveraging loss aversion and endowment effect (your free access), increasing salience of required steps (not missing appointments and contacting coach).
Week 3	Hello, this is Nicole. I was also in this program. When I first started, I had a lot of questions about whether the program could help me meet my goals and my dreams. Working with my coach and going to workshops helped me a lot. So just stick with this and don't give up! You won't know all you can achieve unless you try. Good luck! *Behavioral Strategy:* Leveraging social proof by providing testimonials from peer age group, providing motivation, and emphasizing persistence.

	Message content and behavioral strategy
Week 4	Want three pro tips on how to get the most out of your program? 1. Add a reminder on your phone or calendar for any trainings or meetings. 2. Make a list of things you need help with to discuss with your career coach. 3. Share next steps with your friends or family to help you stay on track. Still feeling nervous? Bring a friend. *Behavioral Strategy:* Providing planning prompts, leveraging peer groups.
Week 5	Yaay! You've stuck with the youth employment program for well over a month. Keep going! Need some help to continue? Call your career coach. *Behavioral Strategy:* Emphasizing milestones met (congratulations), celebrating persistence through adversity, increasing salience of available help, providing choice and feedback loops.
Week 6	Is life distracting you from your goals? We have your back! Watch how people leaned on us when things were tough: https://youtu.be/Ugt83Jjt5Tg. Your coach is there for you! *Behavioral Strategy:* Behavioral insights applied: Acknowledging adversity and encouraging persistence through adversity, social proof of persistence, increasing salience of available help.
Week 7	Please continue engaging with the youth employment program – we don't want you to lose your free access to its rich services. Can't make it? Don't forget to call your career coach! *Behavioral Strategy:* Leveraging loss aversion, providing planning prompts, emphasizing importance through multi-mode message.
Week 8	Focus on your goals, not your limits. Spend your time visualizing what it will be like when you are successful. And call your coach when you need help and when you want to celebrate your wins! *Behavioral Strategy:* Leveraging loss aversion, providing planning prompts.
Week 9	As you go along, both your goals and needs will change. Our youth employment program offers many different services to help you wherever you might be on your journey. We are with you ALL the way. *Behavioral Strategy:* Recognizing that progress is a journey, refocusing attention on goal, providing reminders on full range of services, and emphasizing support.
Week 10	No one is born successful. Persistence gets you there. Keep working on getting the skills you need for a bright future. Behavioral Strategy: Encouraging growth mindset, self-efficacy, providing messages of support.
Week 11	You've stayed committed to your future. Tell a friend about your experience with the youth employment program and what you've learned and accomplished along the way. *Behavioral Strategy:* Promoting self-reflection to promote persistence and channeling peer support.
Week 12	Congrats - you've stayed with the youth employment program for over three months! Call your coach to find new ways we can help you meet your goals and keep your access to the program. *Behavioral Strategy:* Providing planning prompts, leveraging loss aversion.

For readers who want to understand the rationale for our intervention design or may be interested in applying similar approaches to new contexts, we provide details on the steps we took to develop the text messages and describe the behavioral strategies used.

Intervention design process

Our intervention design was anchored in a comprehensive discovery process. Exhibit II.2 summarizes the information we drew on to guide the intervention design.

Exhibit II.2. Sources of information for intervention design

Publicly available materials

- CCMEP program documents and evaluation reports
- Practitioner resources developed for CCMEP staff (including webinars and job aids)

Input from program administrators and others

- Discussions with state CCMEP program leadership and ODJFS staff
- Insights from researchers conducting concurrent or prior studies of the CCMEP program in Ohio
- Group discussions with Cuyahoga County program administrators and staff who shared subject matter expertise, data, and access to participants and service providers during the knowledge development and design phases
- Confirmatory discussions with program administrators and service providers in other counties

Input from participants

- Phone/video interviews with four program participants in Cuyahoga County. The research team conducted these interviews directly, without any program staff present. We used protocols vetted by our Institutional Review Board and assured participants of complete confidentiality and that their response would not affect their receipt of program benefits and services.

Insights from these activities fed into the activities described below.

Understanding the customer journey. In discussions with state and county partners, we sought to understand the customer journey through the program and pinpoint areas where participants might drop off. We began by developing a preliminary customer journey map anchored on the experience of Cuyahoga County (see Appendix Exhibit B.3) that we used for discussions and feedback with counties. We worked with Cuyahoga County because it was the first county our team had contacted when exploring potential interest in collaborating to develop and test a behavioral intervention within CCMEP. State administrators agreed that it would be best to begin work with a single county to understand the customer journey before expanding to other counties. We validated insights from Cuyahoga County with staff from other counties at two subsequent meetings.

We then developed a detailed behavioral map that includes a preliminary behavioral diagnosis (see Exhibit II.3). A behavioral diagnosis is a comprehensive assessment of influences on the desired participant behavior. It includes consideration of individual, social, environmental, and programmatic factors that may either deter or support desired behaviors. The first column of the exhibit lists the main stages of the customer journey, starting from program outreach to successful completion and exit. The next column maps the sequence of the behaviors needed for program success at each stage (for example,

for outreach, the desired behaviors are becoming aware of the program, learning more, deciding to apply, etc.). The third column identifies potential barriers to those desired behaviors drawing on insights from behavioral science. The fourth column indicates potentially promising behavioral opportunities. As is clear, behavioral insights can be useful for understanding and influencing program outcomes at every stage of the customer journey.

Exhibit II.3. Customer journey and behavioral barrier and opportunity mapping

	Customer journey	Behavior needed for program success	Behavioral barriers	Behavioral opportunities
AWARENESS	Outreach/referral /notification of mandatory participation	- Become aware of program - Check out program - Decide to apply / decide to follow requirement to participate - Contact program	- Inattention - Misconceptions of value - Present bias of value of program	- Increase salience - Include peer outreach and reference peer norms - Emphasize benefits and ease
PROGRAM APPLICATION	Eligibility screen and initial assessment Connect with service provider Intake and comprehensive assessment Individual Opportunity Plan	- Provide needed information - Initial assessment - Start and complete assessment - Connect with provider - Schedule appointment - Attend intake appointment - Complete assessment - Provide needed paperwork - Participate in meeting - Review lengthy paperwork - Agree to commitment outlined in IOP	- Hassle factors - Complexity - Psychological fictions - Present bias triggered by perceived costs of participation - Stigma – depletion of self-efficacy based on focus - Punitive tone	- Reduce friction - Reduce eligibility steps, simplify forms, improve transfer of information across organizations - Explain requirements - Create planning prompts and reminders - Reduce emphasis on penalties
PROGRAM PARTICIPATION, COMPLETION, AND EXIT	Case management Service utilization Program exit and participation in follow-up services for 1 year	- Initiate contact with coach for needs - Respond to coach outreach - Let program know of needs - Learn about available services - Form intention to use services - Get assistance with service access - Complete required steps - Utilize services	- Punitive tone - Negative perceptions of program - Psychological frictions - Stigma - Inattention - Time-inconsistency	- Focus on goals, not requirements - Reduce emphasis on penalties - Emphasize a fresh start - Reinforce presence of caring adults - Social proof / peer voice and examples - Increase salience of benefits - Leverage loss aversions - Create planning prompts - Send reminders

Identifying priority areas of focus. Next, we engaged CCMEP administrators, county CCMEP leads, and service providers to identify priority areas of focus. Our goal was to determine what was desirable (i.e., a priority for counties); feasible (i.e., where data and intervention levers were available for conducting an experiment and measuring results); and viable (i.e., could be implemented cost-effectively within available resources and sustained in the future).

Our partners identified three potential areas of focus: (1) reducing participant drop off and increasing service use; (2) improving program application rates; and (3) improving transitions of program participants from the screening to intake. Among these, the first was the only one that met our bar for desirability, feasibility, and viability and so became the focus of a detailed behavioral diagnosis.

Conducting a detailed diagnosis of why young adults do not fully utilize CCMEP services. County staff cited persistent challenges in maintaining participant engagement with program services beyond the first few weeks of enrollment. They indicated that participants tend to disengage at two points: (1) after completing the individual opportunity plan (IOP) with a service provider, which officially begins their participation in the program, and (2) about a month after IOP completion. They did not share any quantitative data on attrition with us. When we probed further, they did not attribute drop-offs at this stage to any specific milestone or requirement that might deter them. They reported that these challenges deepened with the move to remote services during the pandemic. In addition to increasing the duration of program participation, partners also expressed interest in improving participants' access and completion of services available through the program.

Behavioral diagnosis

Our inquiry identified the following potential drivers behind participant disengagement:

1. **High upfront costs of program participation**. While the intake process differs across counties, in most cases it requires multiple, time-consuming steps. In Cuyahoga County, for example both the Young Adult Resource Council and service providers assess and evaluate eligibility of prospective participants. As a result, participants may be asked to completed duplicate steps by each. During the pandemic, eligibility screenings were completed over multiple phone calls instead of through a single, in-person meeting. This initial experience may erode participant confidence in whether the program is useful and worth their time. Participants also experience the costs of program participation (e.g., the time and effort it takes to complete the required enrollment steps) well before they get any benefits. People tend to be more influenced by costs and benefits that occur now rather than those expected in the future, even if the latter are much greater (known as "present-biased preferences" in the behavioral literature) (Laibson 1997; O'Donoghue and Rabin 1999).

2. **Potentially discouraging intake processes**: Self-efficacy, that is, an individual's belief in their own capacity to act in ways that allow them to reach specific goals, can be an important determinant of success for young adults (Bandura 2012; Ryan and Deci 2000). Self-efficacy can be shaped by participants' own performance but also by their environment and program interactions. In the lengthy comprehensive assessment form used at intake, discussion of participant strengths occurs late, after

participants have faced many potentially intrusive questions about their personal life circumstances and the challenges they face (including topics like mental health, addiction, poverty, etc.).

3. **Lack of motivational content:** Similarly, the IOP required for enrollment is text heavy and emphasizes risks and problems, rather than providing a clear description of benefits, strengths, and action steps for the client. These features of intake may generate "psychological frictions" that deter use (Bhargava and Manoli 2015). For TANF-eligible participants, in particular, for whom participation is mandatory and who must undergo a waiting period before referral to service providers, the program may seem obligatory or punitive rather than a rich opportunity.

4. **Tone and messaging not optimized for young adults:** Workforce program services are geared towards adult workers, and their language and approach may not resonate with the way young adults view themselves. One of the four participants interviewed mentioned that when service providers refer to participants as kids it is alienating.

5. **Isolation and distraction:** Based on exploratory interviews, participation in remote services may make it harder to feel like part of a cohort, reducing opportunities for peers within the program to encourage persistence or serve as role models, and potentially increasing opportunities for peers outside the program to serve as a distraction to continued participation.

6. **Competing priorities and distractions.** Based on exploratory interviews, program participants may get deterred by adverse life events (such as illness or job loss of a family member) that compete for their time and attention. During Covid, participants may have been particularly vulnerable to experiencing scarcity of time and attention (including Zoom fatigue), infrastructure (e.g., access to computers and/or reliable internet), and space, making it difficult to continue participating in remote services. Studies suggest that people who face scarcity may exhibit lower self-control and be less likely to follow through on their planned action (known as the intention-action gap). People's natural default is inaction and people who face scarcity are likely to this exhibit this tendency even more (Mullainathan and Shafir 2013). Deficits in self-control can make it more challenging to fulfil burdensome obligations such as those required by program participation.

7. **Quality of services:** While three of the four participants interviewed spoke highly of program services and interactions with service provider staff and coaches, one participant (a repeat program participant) reported markedly poorer experiences with the program compared to their first time participating in the program. The participant cited lack of professionalism, responsiveness, and follow-up from their coach, disorganization from the administrators, and demeaning exchanges.

Designing a behavioral solution

The first six of the seven potential factors behind participation disengagement listed above offer opportunities for applying behaviorally informed interventions that can potentially be administered in ways that allow for rigorous measurement of results. These are described below and are the focus of our

evaluation.[1] (Note while our proposed intervention cannot fully address the first two factors, which occur before program enrollment, it did seek to offset lingering post-enrollment effects of the intake process.)

We developed 12 messages, with a distinct message to be delivered each week during the first 90 days of participation (see Exhibit II.1). In developing these messages, we drew on insights from behavioral science but also on insights from youth development literature that indicate lessons learned on effective strategies for engaging young adults and out-of-school populations in workforce and other human services programs. We obtained feedback on these messages from state and country program administrators and from the four program participants we engaged at the behavioral diagnosis stage. We refined these messages based on that feedback.

These messages seek to:

1. *Provide a welcoming fresh start* and refocus or remind participants of the breadth of services and benefits (Darling et al. 2017; Chetty et al. 2009) and the availability of caring adults to guide them through their journey (Hossain 2015).

2. *Provide peer outreach and social proof* of people benefiting from the program and persisting through hurdles to increase a sense of social belonging, remind them about aspects of their identity that can help them be effective (i.e., use identity activation), show people like them who are persisting through hard times (i.e., reframe adversity), and inculcate a growth mindset that allows them to believe that their actions rather than abilities shape success (Walton et al. 2015; Yeager et al. 2016).

3. *Provide planning and action prompts* to help participants get the most out of their program and actively engage with their coach to get help (Abel et al. 2017; Nickerson and Rogers 2010).

4. *Harness loss aversion,* stressing that non-participation can lead to loss of free access to rich services. Research suggests that real or perceived losses matter to people more than equivalent gains and that people perceive receiving higher benefits from goods they receive for free than from those for which they pay (Kahneman, Knetsch and Taylor 1991; Shampanier et al. 2007).

5. *Reinforce self-efficacy* by celebrating milestones of persistence in the program (Bandura 2012).

B. Evaluation design

To determine whether the text messages worked, we designed and implemented a mixed methods study consisting of an experimental (randomized controlled) trial and implementation study. Eleven counties in Ohio agreed to participate in the study. Below we describe our evaluation design and analysis approach. Appendix B provides additional technical details.

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[1] It is worth noting that in instances where the quality of services themselves are poor, we anticipate that low-cost messaging strategies of the kind we examined in this study are likely to have little or no marginal effects. There are additional, more intensive behavioral interventions that might have a more dramatic impact on customer experiences and could address all the factors listed above. These can include, for example, revisions to eligibility and intake processes to reduce instances of participants being asked to complete the same steps multiple times (duplication); remove burdensome steps that may not be necessary (barrier removal) and change the intake experience so it focuses more on participants' goal and increases their sense of self-efficacy; or provide CCMEP coaches with strategies, training, and/or supports to improve the quality of case management provided.

An experimental design. Conducting an experimental trial allowed us to learn whether our behaviorally informed text messages caused CCMEP participants to increase use of program services. Random assignment ensures that members of the treatment and control groups have similar observable and unobservable characteristics, on average. Since the only difference between them is whether they received the intervention (in this case, our text messages), we can safely infer that differences in observed outcomes were due to the intervention and not due to other factors. For CCMEP, these other factors could include changes in labor market opportunities available to young adults and differences in young adult characteristics such as age, education and skill levels, motivation, and family or parental status.

Study sites and sample. Our study team began randomizing CCMEP participants into the study's treatment group (the group that received the sequence of text messages) and control group (the group that did not receive the sequence of text messages) in November 2021. We randomized 530 CCMEP participants from 11 counties over 22 weeks, between November 24, 2021, and April 20, 2022. The 11 participating counties and the distribution of randomized participants across counties are shown in Exhibit II.4.

Exhibit II.4. Participating counties and number of participants randomized

County	Count	Percentage
Hamilton	146	28%
Cuyahoga	132	25%
Lucas	111	21%
Franklin	69	13%
Richland	29	5%
Huron	21	4%
Clark	11	2%
Perry	4	1%
Summit	3	2%
Trumbull	3	1%
Crawford	1	<1%
Total	**530**	**100%**

Source: Paintmaps.com and OWCMS data provided by ODJFS.
Note: Percentages are equal to the count of participants randomized in the county divided by 530.

Random assignment and supporting study implementation. We conducted random assignment at the individual level. Each week during the sample intake period, state administrators sent the study team a list of all individuals who enrolled in CCMEP the prior week by completing their IOP. They obtained this information from information entered in the Ohio Workforce Case Management System (OWCMS) by CCMEP service providers in participating counties. We randomly assigned these individuals to either a

treatment group that received the intervention of 12 text messages or a control group that did not.[2] Participants had a 50% chance of being assigned to either group. For each weekly cohort added to the treatment group, the study team prepared an input file of telephone numbers for the cohort and sent it to a state CCMEP program staff member. That person then uploaded the list of participants into the Twilio-Salesforce system to begin the automated sequence of 12 intervention messages (See Appendix B for more details on Twilio). .[3] Exhibit II.5 shows the sequence of steps.

Exhibit II.5. Operational steps in our study design

| State shares list of new program participants who have completed IOP | → | Study team conducts randomization and shares data back with state | → | State uploads new recipients into existing Twilio-Salesforce message receipt workstream | → | State provides weekly files on message disposition | → | State provides monthly data on participant outcomes |

In addition to coordinating on a weekly basis with state staff for randomization and data receipt, the study team also held monthly office hours to troubleshoot any challenges faced. Any people who texted back received an automated message notifying them that the number is not monitored, and they should contact their coach with any questions. We removed individuals who requested via text that we stop messaging them or indicated that we had the wrong phone number from the list of participants receiving additional messages.

Outcomes. We examined the effects of our intervention text messages. For each of the following outcomes we indicate whether it was a primary outcome, a secondary outcome, or an exploratory outcome (see Appendix B for details about how the outcomes were measured):

- Number of services started within the first 60 days of participation (primary).

- Number of services started within the first 90 days of participation (primary).

- Whether at least one service was completed within the first 60 days of participation (secondary).

- Whether at least one service was completed within the first 90 days of participation (secondary).

- Variation in impacts based on age, basic skills deficiency, whether a student is in school, parental status (exploratory).

> **Study data sources.** The evaluation relied on data from four key sources:
>
> (1) administrative data from the Ohio Workforce Case Management System (OWCMS),
>
> (2) data from Twilio, the system that the Ohio state CCMEP program used to deliver the intervention messages,
>
> (3) qualitative data from interviews with program administrators, and
>
> (4) qualitative data from interviews with CCMEP participants who received the intervention messages.

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[2] To be eligible for random assignment, the participant had to have both a 10-digit phone number and a first name listed in the OWCMS.
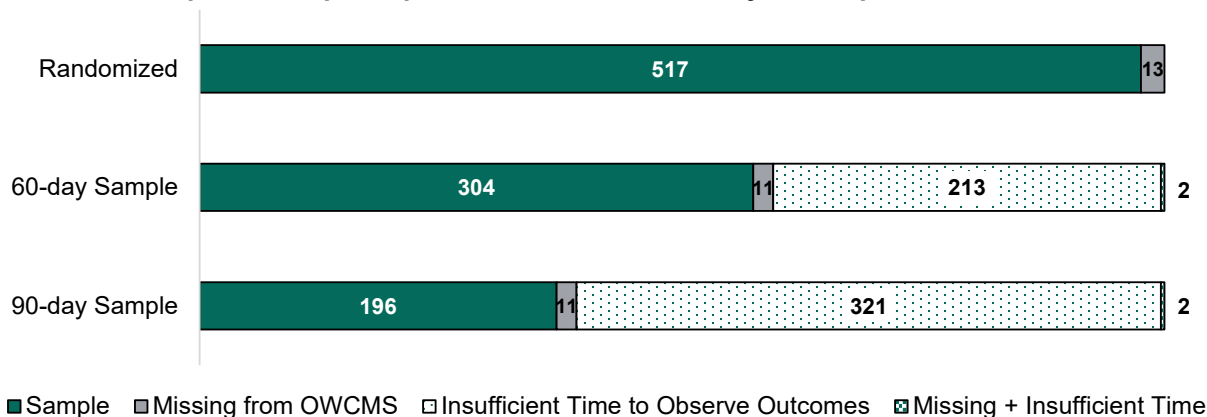
[3] See section B.4 of Appendix B for additional details about Twilio.

Implementation study. We supplemented the experimental study with an implementation study. This study drew on: (1) an analysis of Twilio-Salesforce data on treatment group receipt of messages and any responses to the messages, and (2) qualitative data collected from interviews with our state implementing partners at ODJFS and interviews with program staff at the four counties with the most study participants. We conducted these interviews between October 2022 and January 2023.

Comparing our randomized sample and analysis sample. Although we randomized 530 participants, our effective sample sizes for analysis are smaller, and they differ across outcomes measured for different follow-up periods. This is for two reasons:

1. **The outcomes data coverage period ends in April 2022**. As discussed above, unanticipated issues transitioning to a new data system in Ohio made it impossible to obtain high-quality data on all our desired outcomes for our full sample. Because the outcomes data from the state extend only through April 2022, we cannot use in our analyses records for participants who entered the sample late in the intake period. This is because not enough time had passed for those participants to allow their outcomes to be reflected in the data. As a result, our effective sample size for 60-day outcomes (304) is smaller than our randomized sample, and smaller still for 90-day outcomes (196; see Exhibit II.6).

2. **Sample attrition: data are unavailable for thirteen participants, for unknown reasons**. Data provided by the state on baseline characteristics and services received are missing all information for thirteen participants in the study sample. The state investigated these cases but was unable to determine why the participants no longer appear in the data. This leaves us with data for 517 participants who were randomized.

Exhibit II.6. Comparison of participants randomized and analysis samples

	Sample	Missing from OWCMS	Insufficient Time to Observe Outcomes	Missing + Insufficient Time
Randomized	517	13		
60-day Sample	304	11	213	2
90-day Sample	196	11	321	2

Source: OWCMS data provided by ODJFS.

Notes: Of the 530 CCMEP participants we randomized, data for 13 were missing from OWCMS for unknown reasons. The bars for both the 60- and 90-day samples show the numbers of participants included in and excluded from each sample. The group labeled missing + insufficient time refers to records for two participants who were in the group of 13 that had no information in OWCMS that were also randomized too late to be included in either the 60- or 90-day samples.

3. **Confirming baseline equivalence for 60- and 90-day outcomes.** We checked both our 60-day and 90-day samples and confirmed that there were no systematic differences between the treatment and control groups. We included the following participant characteristics in our testing: gender, race, age, ethnicity, educational attainment, school status, disability status, five indicators for different barriers to employment, and funding source (e.g., whether the participant was eligible for CCMEP via WIOA or TANF).[4]

Contextualizing our study sample

We compared our study sample with participants served statewide in PY 2021 (see Exhibit II.7).

Exhibit II.7. Comparison of sample characteristics with statewide population

	Randomized	60-day sample	90-day sample	Statewide
Gender				
Female	69%	70%	73%	66%
Male	30%	30%	27%	33%
Not declared	1%	< 1%	1%	1%
Age				
18 and younger	32%	31%	35%	35%
19–20 years	22%	22%	23%	20%
21–23 years [a]	33%	36%	31%	15%
24 years and older [b]	13%	11%	11%	31%
Race				
Black/African American	77%	75%	74%	51%
White	18%	19%	20%	40%
Other race [c]	6%	5%	6%	5%
Ethnicity				
Hispanic or Latino	5%	5%	6%	6%
Not Hispanic or Latino [d]	90%	91%	90%	-
Did not declare [d]	5%	3%	4%	-
Education status				
In school	29%	27%	28%	49%
Not in school	71%	73%	72%	51%
Educational attainment				
Less than 9th grade [d]	10%	9%	10%	-
Grade 9 [e]	6%	7%	8%	32%
Grade 10	8%	9%	7%	15%
Grades 11 or 12 (no GED)	25%	28%	30%	20%
High school [f]	44%	41%	38%	30%
1 year of postsecondary schooling [g]	3%	3%	3%	2%
2 or more years of postsecondary schooling [h]	3%	3%	4%	2%
Barriers to employment				
Basic skills deficient	19%	21%	26%	45%
Has disabilities	20%	20%	16%	13%
Lacks transportation [i]	94%	95%	96%	-
Parenting	41%	44%	44%	25%
Pregnant [j]	16%	17%	19%	-
Single parent	36%	40%	40%	25%

[4] The five barriers to employment are (1) parenting, (2) pregnant, (3) single parent, (4) skills deficient, and (5) lacking transportation.

	Randomized	60-day sample	90-day sample	Statewide
Funding source				
WIOA	36%	35%	34%	88%
TANF	39%	38%	42%	8.8%
Both [k]	25%	27%	24%	-
Sample Size	517	304	196	18,779

Source: OWCMS data provided by ODJFS and Unadjusted Annual CCMEP Performance Report PY 2021 Statewide, Statewide data 7/1/2021-6/30/2022 (https://jfs.ohio.gov/owd/WIOA/Performance/CCMEP-PY-2021-Annual-Unadjusted-Performance-Report.stm).

Notes: Within a category, percentages may not sum to 100 percent due to rounding. Dashes in the statewide column indicate that statewide figures were not reported.

[a] Statewide figures are not reported for this age range. The reported proportion corresponds to the proportion for ages 21–22.

[b] Statewide figures are not reported for this age range. The reported proportion corresponds to the proportion for ages 23 and older.

[c] Statewide figure includes participants who reported more than one race.

[d] Statewide figure not reported.

[e] Statewide figures are not reported separately for those with less than 9th grade and those with 9th grade. The reported proportion corresponds to those with 9th grade or below.

[f] Statewide figure includes those with a high school diploma and those with high school equivalency.

[g] Statewide figure corresponds to the proportion reported as having some college.

[h] Statewide figure corresponds to the proportion reported as having a postsecondary credential.

[i] Statewide figures are not reported for this barrier to employment.

[j] Statewide figures are not reported separately for participants who are parenting and those who are pregnant. The reported proportion corresponds to the proportion who are either pregnant or parenting.

[k] Statewide figures are not reported for this category.

Compared to the annual population of CCMEP participants statewide our study samples show some key differences:

- A higher proportion of participants in our study samples are Black/African American. In each of our two study samples, roughly three out of every four participants are Black/African American, compared to only half of participants statewide.

- A higher proportion of participants in our study samples are not in school—just over seven out of every 10 participants, compared to only half of participants statewide.

- Participants in our samples have slightly higher levels of educational attainment than participants statewide. About 46 percent have at least a high school diploma, compared to only 34 percent of participants statewide. Less than 20 percent of participants in our samples have no more than a 9th-grade education, compared to 32 percent of participants statewide.

- Participants in our samples face different barriers to employment than participants statewide. Fewer participants are basic skills deficient (21 and 26 percent for our two samples, compared to 45 percent statewide), more are parenting (44 percent for each of our two samples, versus 25 percent statewide), and more are disabled (16 and 20 percent, versus 13 percent statewide).

- Compared to state wide participants, a higher proportion of our participants are TANF recipients (38 and 42 percent for our two samples, compared to 9 percent statewide) and a smaller proportion are WIOA Youth Eligible (35 and 34 percent for our two samples, compared to 88 percent statewide).

While we did not conduct any analyses to check whether these differences are statistically significant, the magnitude of the difference suggest that the group of CCMEP participants served by the counties in our study samples differs from the broader population of participants served by CCMEP statewide in several important dimensions. This limits the generalizability of our findings.

III. Findings

Our study revealed several interesting findings and related insights. Collectively, these suggest that text messages informed by behavioral science can improve both take-up of program services and service completion rates among youth in a comprehensive employment program. We also found that the effectiveness of the text messages varies with participant characteristics. This chapter presents the key findings from our analyses. Appendix C provides additional details, including regression model output.

A. Impact findings

Primary outcomes. Our two primary outcomes of interest were (1) the number of services started within the first 60 days of participation (i.e., about two-thirds of the way into the 3-month intervention), and (2) the number of services started within the first 90 days of participation.

> The text messages increased the number of services started by CCMEP participants within their first 60 days in the program. On average, every other person who received the text messages started one more service than they would have otherwise. Impacts on services started within 90 days were only significant at the 10 percent level.

Primary outcomes: We examined the number of services started at two junctures: within the first 60 days of participation (about two-thirds of the way into the 3-month intervention) and within 90 days. As shown in Exhibit III.1, text messages increased the number of services started within the first 60 days of participation in CCMEP by 0.51, a result that is statistically significant at the 5 percent level. The increase is equivalent to every other participant in the treatment group starting one more program service than they would have if they had not received the text messages.

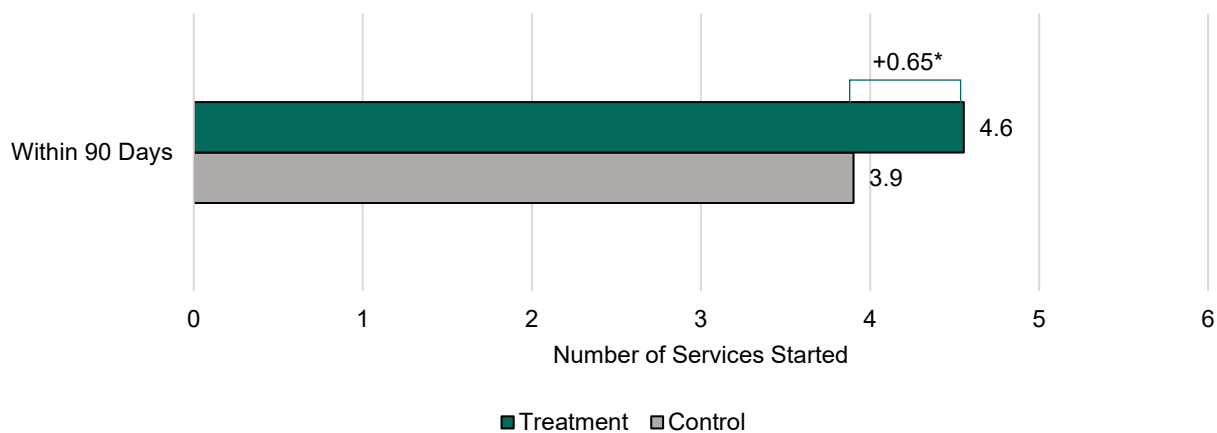**Exhibit III.1. Impact on number of services started within 60 days**
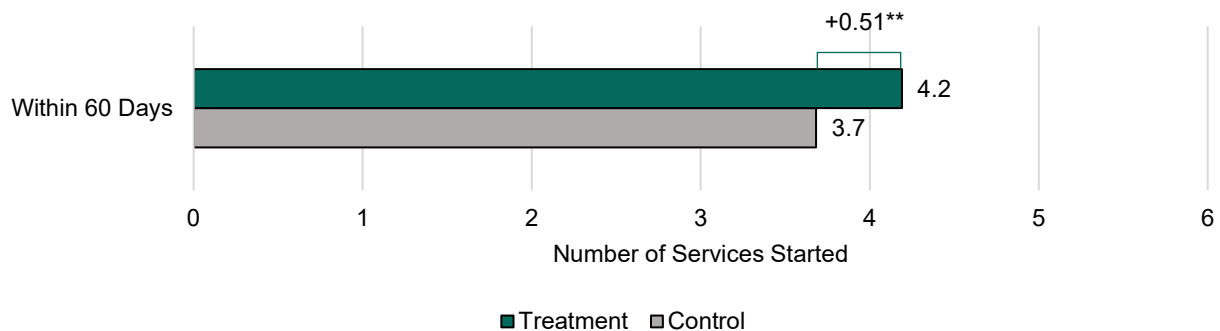
Source: OWCMS data provided by ODJFS.

Note: Control group bar represents the unadjusted control group mean. Treatment bar represents the unadjusted control group mean plus the regression-adjusted estimated impact of the intervention. N = 304.

***/**/* Statistically significant at the 1/5/10 percent level.

As shown in Exhibit III.2, impacts on services started within 90 days (by which time all intervention messages had been delivered) were larger in magnitude than the 60-day results but only significant at the 10 percent level.[5]

Exhibit III.2. Impact on number of services started within 90 days

Source: OWCMS data provided by ODJFS.

Note: Control group bar represents the unadjusted control group mean. Treatment bar represents the unadjusted control group mean plus the regression-adjusted estimated impact of the intervention. N = 196.

***/**/* Statistically significant at the 1/5/10 percent level.

There are three potential explanations for the differences in significance levels between the 60- and 90-day results.

- **Sample size:** It is possible that the 90-day sample, which was much smaller than our 60-day sample, was not large enough to reliably detect this size of result. Our prior calculations of the size of the impact we anticipated being able to measure with precision given the sample size was 1.19 (almost double the impact observed).

- **Sample differences:** There may have been differences in the characteristics of people included in the 60-day sample versus the 90-day sample. Sensitivity analyses that we conducted to check for this source of bias suggest this is not the case (see Appendix B for more detail).

- **Nature of the intervention**: The third potential reason may be that the messages delivered in the final 30 days on the intervention were counterproductive compared to the messages delivered in the first 60 days. Additional qualitative user testing and empirical testing may be necessary to find out if this is the case.

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[5] While some studies consider the 10 percent level to be a meaningful significance level, the more usual convention is to treat results significant at the 5 percent level to be ones that are not likely to be due to chance alone.

The text messages significantly and substantially increased service completion rates. They increased the likelihood that a CCMEP participant would successfully complete at least one program service within their first 60 days in the program by 10 percentage points (a 46 percent improvement on the control group mean). No impacts were observed for 90-day service completion outcomes.

Secondary outcomes: We examined whether the participant successfully completed at least one CCMEP service at two points in time: (a) within their first 60 days of participation and (b) within their first 90 days of participation. These outcomes were secondary outcomes for the study. That is, we anticipated seeing positive results but did not assume that we would have a large enough sample size to measure expected impacts with precision. As shown in Exhibit II.3, we found substantial impacts on 60-day service completion outcomes that were significant at the 5 percent level.

**Exhibit III.3. Impact on the likelihood of successful service completion within 60 days**
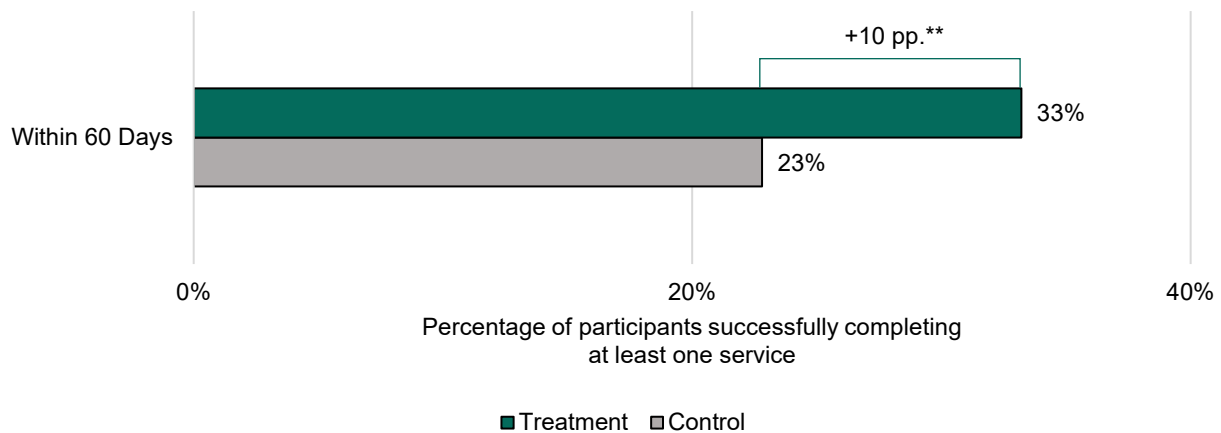
Source: OWCMS data provided by ODJFS.

Note: Control group bar represents the unadjusted control group mean. Treatment bar represents the unadjusted control group mean plus the regression-adjusted estimated impact of the intervention. N = 304. ***/**/* Statistically significant at the 1/5/10 percent level.

The results show that the text messages increased the likelihood that a participant would successfully complete at least one service within 60 days by 10 percentage points, a statistically significant result at the 5 percent level. Twenty-three percent of participants who did not receive the text messages successfully completed at least one service (compared to 33 percent in the treatment group). That means that the 10 percentage point increase represents an increase of 46 percent over the control group mean. We did not find impacts for 90-day service completion outcomes.

The text messages had higher impacts on 60-day service completion rates for participants who were:

↓↓ Younger than 18   📖 Basic skills deficient   👥 Not parents
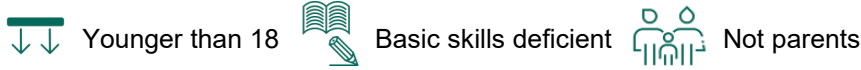

Exploratory outcomes. To supplement our analyses of the primary and secondary outcomes of interest, our exploratory outcomes focused on understanding whether the impacts on the primary and secondary outcomes varied for four groups: (1) participants younger than 18 years old, (2) participants identified as basic skills deficient, (3) participants who were in school at the time of enrollment, and (4) participants who were parenting. We focused on examining whether the differences in impacts between those in the subgroup and those not in the subgroup were statistically significant (see Appendix C for further details).

We did not find differences in impacts for services started for any of the four groups we analyzed. This was consistent across both the 60- and 90-day outcomes (see Appendix C for detailed results).

For services completed within 60 days, we found substantial differences in impacts based on participant characteristics. As Exhibit III.4 shows, the text messages had significantly larger impacts for participants who were younger than 18 (compared to those 18 or older), participants who were basic skills deficient (compared to those who were not), and those who were *not* parents (compared to parents).

Differences between those in school and those not in school were only significant at the 10 percent level.

Exhibit III.4. Impacts on the likelihood of successful service completion within 60 days, by group
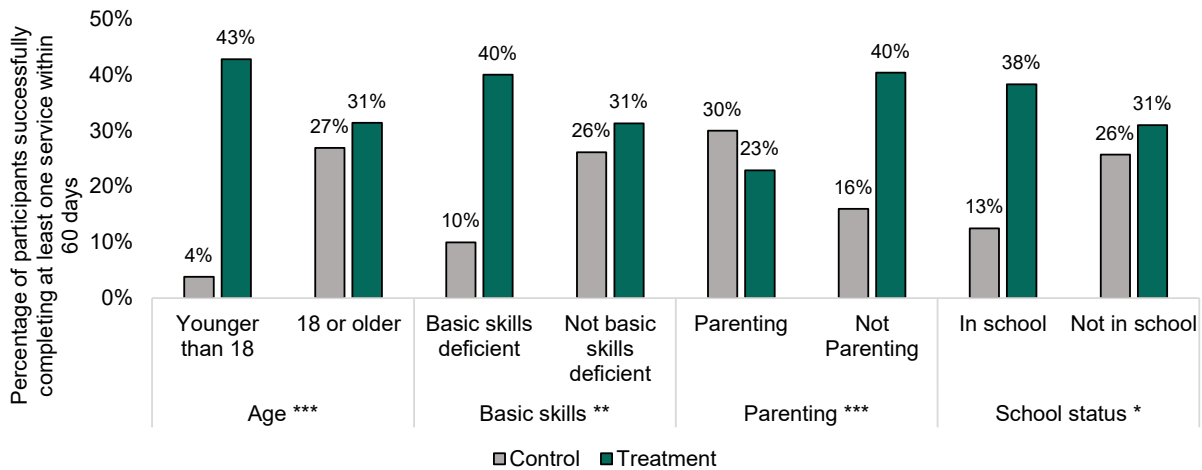
Source: OWCMS data provided by ODJFS.

Note: Control group bar represents the unadjusted control group mean. Treatment bar represents the unadjusted control group mean plus the regression-adjusted impact of the intervention. N = 304. ***/**/* Difference in impacts statistically significant at the 0.01/0.05/0.10 level. Subgroup sizes are noted in Exhibits C.3–C.6 in Appendix C.

In addition to analyzing whether impacts on the likelihood of successfully completing at least one service within 60 days varied among different participant groups, we conducted similar analyses for the 90-day

outcome. We did not find significant differences in impacts (see Exhibits C.3–C.6 in Appendix C for more details).

Finding 6. The most common services received by participants were (1) supportive services, (2) labor market and employment information, (3) leadership development opportunities, (4) work experience, and (5) career guidance and counseling.

Service receipt. As a complement to the impact analyses, we also explored the set of services received by participants in our study samples. Exhibit III.5 summarizes the five most common services received by participants in our 60- and 90-day analysis samples (regardless of study group assignment to the treatment or control group).

Exhibit III.5. Most common program services received, by analysis sample
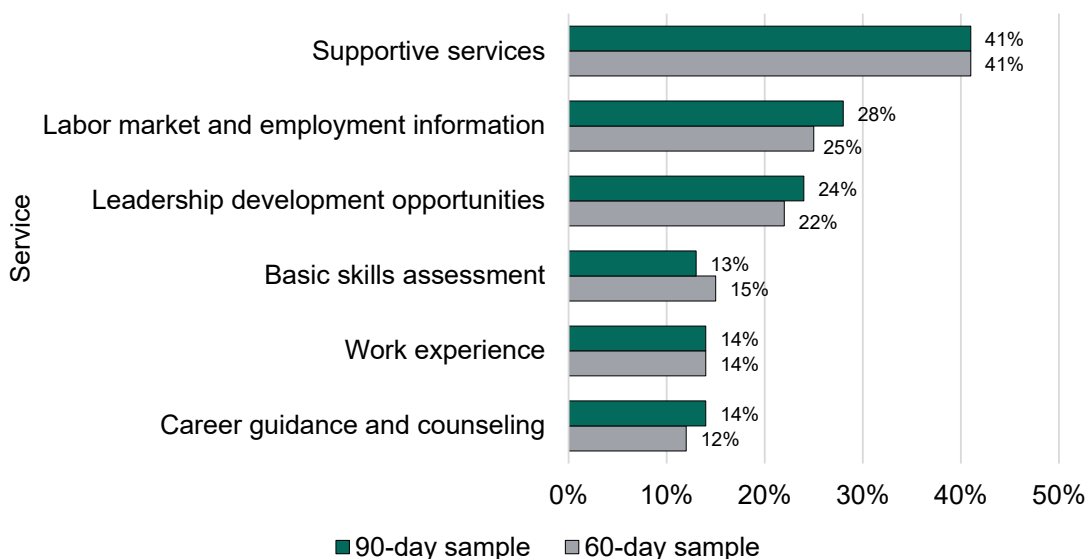
Source: OWCMS data provided by ODJFS.

Note: Proportions are calculated by dividing the number of participants in the sample who received the service at least once by the total number of participants in the sample. For the 60-day sample, N = 304. For the 90-day sample, N = 196.

The most common service received by participants in our study samples was supportive services (accessed by 41 percent of participants). This includes transportation, childcare, and housing support.[6] Between 25 and 28 percent of participants received labor market and employment information (i.e., receiving information about in-demand industries/occupations) or leadership development opportunities (e.g., community service, citizenship training, life skills training). Twelve to 14 percent of participants received work experience (e.g., summer employment opportunities, pre-apprenticeship or apprenticeship

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[6] The examples we give for each service are drawn from an undated CCMEP training overview document available online (https://jfs.ohio.gov/owd/CCMEP/docs/CCMEPTrainingOverview.pdf).

programs, internships, or on-the-job training) or career guidance and counseling (e.g., advising related to career exploration, job placement). The mix of services reflects the program's emphasis on both preparing the participant for employment and helping them overcome the barriers to employment they may face.

B.   Implementation findings

To understand program implementation, we examined administrative data on participant responses to text messages and message receipt patterns, as well as responses to our qualitative interviews.

> Sixty-seven of the 273 total participants in the treatment group (25 percent) responded to text messages. Over a quarter of the responses were positive and a tenth were unambiguously negative.

Participant responses to our text messages. We regularly monitored any participant responses to the study text messages. We received 84 unique text responses from 67 users. We reviewed and classified the sentiment of the responses into 7 categories (see Exhibit III.6). 27 percent of the responses were positive, most usually consisting of a "Thank you!" 10 percent were negative, asking to opt out. Based on our study protocols, message delivery was immediately stopped for all those who made a stop request. They were still included in our analysis sample.

Eighteen percent of the responses expressed confusion ("Who is this?") or included questions or updates about next steps ("Who is my coach?", "How do I contact my coach?", or "I already did"). Fifteen percent of participants were neutral, typically sending "okay" as a response. A few responses were hard to interpret or alerted us that we had the wrong number. (As discussed in Chapter 2, we removed those who indicated a wrong number from the list of participants receiving additional messages but included them in the analysis sample.)

Exhibit III.6. Type of responses to text messages
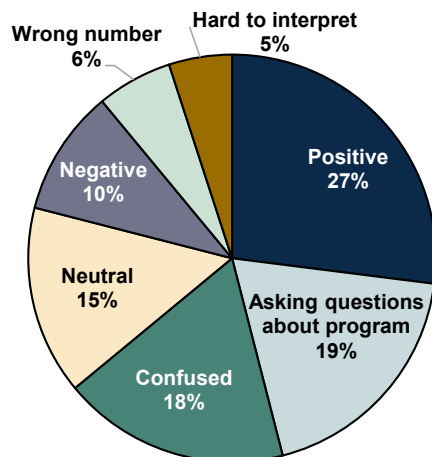
Source: Twilio-Salesforce data.

Notes: Number of responses = 84

On average, participants received three-quarters of the messages sent. Message receipt declined over time from over 90 percent being delivered in the first 3 months to 85 percent being delivered in the last month.

Patterns of message receipt. To shed light on how the text messages may have influenced the behavior of CCMEP participants assigned to the study treatment group, we used data from Twilio-Salesforce to analyze the number of messages received and which of the 12 messages were received. (Note that while the system allowed us to assess whether a message was received, we could not track whether it was read). We cannot tell from these data why messages were or were not always received. One possibility is that access to cell phone service may be intermittent among the CCMEP population—some messages may not have been delivered successfully because the phone number was disconnected from service. Another possibility is that the phone number may have been entered incorrectly into OWCMS.

Exhibit III.7 summarizes the number of text messages received by participants assigned to the treatment group for both the 60- and 90-day samples.

- Patterns of message receipt were similar among participants assigned to the treatment group for each of the two samples. Over 80 percent received at least four text messages and about 75 percent received at least eight text messages.

- On average, participants in the study who were assigned to the treatment group received 9–10 of the 12 intervention messages.

Exhibit III.7. Receipt of text messages, 60- and 90-day samples

	60-day sample	90-day sample
All 12	58%	56%
At least 8	76%	74%
At least 4	82%	82%
None	13%	13%
Average number of messages received	9.6	9.5

Source: Twilio data provided by ODJFS.

Note: Figures represent the number of messages that were confirmed as delivered, with percentages calculated with a denominator equal to the total number of participants in each treatment group (for the 60-day sample, N = 159; for the 90-day sample, N = 104). The proportion of the 60-day sample who received all 12 messages is shown for completeness; participants in the 60-day sample could not have received all 12 intervention messages within 60 days, so the last 4 messages could have no effects on the 60-day outcomes. Though not shown in the table, we confirmed that no participants in the control group for either sample received any of the intervention messages directly.

Section 6 in Appendix B provides additional detail on receipt of each of the 12 individual text messages among participants in the study treatment group.
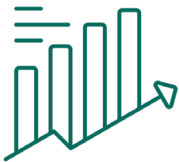
> County program administrators see clear benefits of sending behaviorally informed texts to encourage youth engagement but highlighted potential risks and adverse effects as well. There was consensus that these messages should be templates that CCMEP coaches can personalize and customize to reflect participants' recent interactions with the program.

County perspectives. We conducted interviews with staff from four counties that had the most participants. Four main themes emerged from our analysis of data from these interviews:

- *Respondents in all four counties saw benefits to sending behaviorally informed texts and cited specific elements in the intervention texts that they liked.* County staff agreed that sending friendly reminders to young adult participants could help them stay engaged with the program and a helpful supplement to text messages from their coaches. Specific features that they liked about the intervention included:
  - **Regular reminder:** Staff noted that the weekly reminders could be helpful, especially for the youth demographic served by this program. One staff member noted that it's a friendly nudge "Out of sight or out of mind – but if I see it every week – they think wait maybe they can help me - then maybe that's a good reminder – it creates a habit." Another mentioned that this may be especially useful over time: "Weeks go by and they forget the purpose. This would give them some reassurance that they are still enrolled. Some participants have been in the program for a while and have had transitions of staff/coaches and they lose momentum on what the program really is so this would be helpful." Another noted that the weekly cadence could help "form a habit" of engagement with the program.
  - **The upbeat tone and the congratulations for persistence:** Staff expressed appreciation for the tone of the messages: *"I like the upbeat motivation of that... It's a reminder that this program is serving the whole person. Not just about the incentive."*
  - **Motivational content:** Staff indicated that the motivational content may be especially helpful in changing the tone of existing, required interactions: "We have a requirement policy to contact them – weekly, bi-weekly, or bi-monthly and enter case notes [on interactions] – but we are working on not having it look so transactional. What you have here is more motivational."
  - **Setting the tone for a fresh start after cumbersome intake process:** Staff indicated that a welcoming message which includes a video on benefits participants have gotten for the program messages can be especially helpful given the intensiveness of the application process: "The application process can be overwhelming – and now with the video they can realize they did that and now they can move on to the next thing."

Respondents identified clear risks stemming from the lack of customization. Our interviews revealed multiple ways that the text messages could be confusing to participants. To reduce the burden of

administering the intervention for state partners, messages were not customized for each county. We were aware at the outset that both the CCMEP program and coaches are referred to differently in each county. Given operational constraints, the study team and state opted to use "youth employment program" and "coach" in all the messages. The initial text came from the state program administrator but most of the later texts did not identify the sender. Staff indicated multiple ways that this approach could be ineffective:

- **Generic tone can come across as spam:** Staff noted that with the rising use of text messaging as marketing and campaign tools, youth may dismiss the text as spam. This is especially true if they delete the first message (the only one which provides the name of the sender). Without that initial message to refer to, participants may be especially confused about the source of the messages.

- **Lack of awareness of sender:** Staff in one county noted that their program went by a different name, and they used the term "vocational specialist" instead of "coach." In another county, they mentioned that participants tend to know the name of the service provider rather than the program. The absence of a link to the program that they attend and recognize, or the name of their coach might be confusing. Staff at two of the counties mentioned receiving a query or two from their service providers about the texts and the sender.

- **Confusion that someone other than their coach is messaging them.** Staff indicated that coaches or case managers mostly communicate with participants via text. Receiving generic texts from someone else might be confusing or off-putting. This might be especially true if they respond to the message and receive an automated response. (As discussed in Chapter 2, people who text back receive an automated message notifying them that the number is not monitored, and they should contact their coach with any questions.)

- **Frustration about lack of acknowledgment of where they are in their journey.** Staff noted that a participant who had been in regular contact with their coach or taking other required steps may be frustrated with the reminder to do so. As explained by a county staff person: "But if I am someone who is actively engaging – I could see them being annoyed. [When they get a text saying] 'Want to get the best out of your program.' they could say: 'I am in here right now, why are you texting me?'"

All respondents saw great value to making intervention text messages available to coaches for customization. Staff indicated the ideal design of this intervention would be to provide these as customizable templates for coaches to adapt and use. This would have the following benefits:

- *Allow authentic personalization and deepen the bond with case managers.* If text messages identify the sender as the coach and/or use the participants' name, then recipients are less likely to consider it as spam or be confused. Moreover, if coaches can tweak the language so it aligns with the way they communicate, then the message will feel less generic.

- *Reduce burden on coaches and improve outreach quality.* Staff noted that coaches differ in how much, how well, and how effectively they contact participants. Having content to adapt for texts might make it easier and faster for coaches to contact their participants and help improve the tone of interactions.

- *Allow for adaptation to their progress, challenges, or preferred communication style.* Staff noted that even small references to the progress made or specific desired interactions (e.g., upcoming meetings or available resources) can strengthen the impact of the messages.

> County staff found implementing the behavioral trial to be very low-burden. Only two received any feedback on questions from frontline staff on implementation.

Staff in all four counties mentioned that administration of the study had imposed little burden on them. Three of the four indicated that there had been no burden. Only two had received a few questions from their service providers. Staff from the fourth, who had contributed a good amount of time during the intervention development and feasibility assessment stage, indicated that the partnership had not been taxing at all. They cited the value of the close partnership in advancing their learning.

> State staff found study implementation to be manageable and collaboration with the study team to be efficient. Their only challenge was navigating their own interdepartmental processes to access the right text messaging technology.

State interview findings. We interviewed five state staff from ODJFS who partnered closely with us in study implementation about their experiences with the program. As noted earlier, we designed study processes to minimize burden on participating counties. This meant we worked closely with the state to figure out feasible options for intervention delivery, sample randomization, and ongoing data collection. We relied on weekly efforts from the state in sharing data on new program entrants, adding new study entrants to Twilio-Salesforce to receive messages, and sharing messaging system and outcome data.

State staff shared that the bulk of the collaboration was low-burden and ran smoothly and efficiently. State partners indicated that they found the study team well organized and very responsive and timely. The level of detail and templates provided in data requests were helpful. They also appreciated the persistence of the study team in following up on pending issues. They considered that useful for keeping the effort on track and successful.

State staff shared that the only unanticipated challenge faced was securing access to text messaging technology. The study team's initial plans involved leveraging text messaging technology that Cuyahoga County had access to and was willing to deploy on behalf of other participating counties participating in the study. State leadership was not willing to opt for that solution due to concerns about sharing confidential participant data (contact information) across counties. It took state partners a long time to figure out which messaging technology was already paid for and accessible to ODJFS (given the length of time required for new procurements, the only feasible option was accessing existing solutions already in place). Since that technology solution (a combination of Twilio and Salesforce) and the staff that was well versed in its use belonged to a different office within ODJFS (the office of unemployment), securing

access for CCMEP took our state study liaison more time and effort than expected. Once that hurdle was cleared, the rest of the study implementation was well organized and low burden.

State partners anticipate study results will inform important program decisions. Our state partners had mentioned at the outset of the study collaboration, and reiterated during interviews, that they expect study results to inform two important decisions they plan to make in early 2023: (1) whether to include text messaging capability in their new data management system, and (2) what types of messaging features to include in a new case management app that both frontline staff and participants could use.

State staff identified several additional areas where they are eager to test applications of behavioral science in the future. These include:

- Streamlining the enrollment process, especially reducing barriers and extra steps
- Redesigning orientation meetings to make them more engaging
- Understanding which specific steps or interactions increase or sap participant motivation
- Leveraging automated text messages in advance of meetings with career coaches

IV. Takeaways and Directions for Future Learning

This effort has revealed important and nuanced findings.

Insights on effectiveness, feasibility, and areas of future learning. We've learned that a sustained messaging effort can increase participant service use and service completion rates among youth. We've also learned that these impacts vary based on population characteristics.

On an operational feasibility front, our study shows that text messages can be incorporated at relatively low cost for the state and counties that already have access to mass messaging technology. This confirms that automation can play a constructive role in supplementing staff outreach efforts. It requires careful and thoughtful design with input from customers of the program.

These findings suggest several future areas of learning:

- **Impacts on other outcomes:** Can text messages increase the number of services started and the likelihood of successful service completion in the longer term (e.g., 120 days)? Can they reduce the likelihood of exiting the program early? Can they reduce the likelihood of exiting the program because of failure to use program services? Can they increase the likelihood of exiting the program into postsecondary education, training, or employment? Can they increase the use of follow-up services after program exit?

- **Impacts for different populations:** What adaptations need to be made to make the text messages more effective for out-of-school youth, older youth, and youth who are parents?

- **Relevance for other counties and states: Do findings from our study extrapolate to other counties in Ohio?** As noted in Chapter III, study participants differed in important ways from the overall CCMEP statewide population. Will applying similar approaches to counties that have different participant characteristics yield similar results?

- **Relative effectiveness of customized versus mass messaging:** How might we use customized messages sent by coaches to further improve program outcomes? Are these operationally feasible? What are the marginal costs and benefits of customized outreach relative to mass text messaging?

- **Relevance to additional program problems:** How might we apply similar approaches to improve program application rates among youth?

Study team reflections on the design of effective learning partnerships. The study team partnered simultaneously with the state and a local county during the feasibility assessment stage. Learning from prior efforts, we structured this partnership intentionally to have the following features:

- **Identifying study allies and key decisions:** To make sure the study is useful, we asked our state partners to identify decisions they needed to make that this study could help inform and when they needed to make those decisions. Identifying these high-priority research-to-action goals up front and reflecting on them on an ongoing basis helped both state partners and the study team commit to troubleshooting issues as they arose and make progress.

- **Including early innovation adopters in design discussions accelerates development of multisite trials:** Including a county that was receptive to innovation and was able to provide us with subject matter expertise, data, access to customer and case manager staff, and access to operational systems allowed us to identify potential ways to implement an intervention and develop a prototype. This accelerated our discussions with the state in developing a model that could be deployed across multiple counties and refining it.

- **Adopting a broader lens of applications of evidence leads to more buy-in for research partnerships:** In the course of routine interactions with state and county partners, we asked broader questions about their experiences with implementing the program (beyond the scope of the study) and the challenges they were facing. This has helped maintain and grow an appetite for additional and continued research partnerships and requests for continued collaboration in the future.

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