Colorado Evaluation & Action Lab
UNIVERSITY OF DENVER
Using data to drive action

Colorado Community Aging in Place—Advancing Better Living for Elders (CAPABLE) Evaluation

Final Report

REPORT HIGHLIGHTS:

- **An evaluation of the Colorado CAPABLE pilot provides evidence that the program produces positive and statistically significant outcomes for a wide range of Health First Colorado members.**
- **Difficulty with Activities of Daily Living (ADLs)** fell by 24%, and difficulty with Instrumental Activities of Daily Living (IADLs) fell by 21%.
- **CAPABLE's interdisciplinary model promotes greater efficiency and accountability than the current Home Modification 1915c Waiver Benefit**, and the bundled program makes it distinct from individual Medicaid services.
- **Evaluation results support making CAPABLE a long-term Medicaid waiver benefit in Colorado.**

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Executive Summary

The Colorado Department of Health Care Policy & Financing (HCPF) aims to improve the health and quality of life for members while decreasing costs. The Community Aging in Place–Advancing Better Living for Elders (CAPABLE) program developed by Johns Hopkins University School of Nursing has been shown to effectively address these priority areas through more than a decade of research. To make an informed and data-driven decision on whether CAPABLE should become a long-term Medicaid waiver benefit, HCPF contracted with the Colorado Evaluation and Action Lab (Colorado Lab) to evaluate the CAPABLE program for an expanded population of Health First Colorado members across multiple age groups and Colorado pilot sites.

CAPABLE is a participant-directed, team-based intervention to increase mobility and functionality in the home. Two provider organizations piloted the expanded CAPABLE model between January 2023 and August 2024, serving 359 members in 10 counties spanning the ages of 18 to 98. The providers captured outcome measures pre and post intervention, including difficulties with Activities of Daily Living and Instrumental Activities of Daily Living.

The Colorado Lab utilized a one-group pretest-posttest comparison design to measure outcomes in Colorado's CAPABLE pilot and compare them to outcomes seen in CAPABLE pilots in other states. Multivariate regression analysis was used to determine how outcomes vary by population (specifically, by age and geographic region). In addition, the Colorado Lab conducted a process evaluation to better understand the specific components and benefits of the CAPABLE model; capture implementation successes and challenges to inform future expansion; and further explore how the CAPABLE model could serve as an enhancement or alternative to current Medicaid services in Colorado.

Overall, CAPABLE was shown to produce positive and strong statistically significant outcomes for a wide range of Health First members. Its successful implementation across the state appears feasible, and its distinct interdisciplinary model promotes greater efficiency and accountability than the current Home Modification benefit. With additional targeted messaging and evaluation, the CAPABLE model could serve as the foundation for a two-tiered Home Modification Benefit in Colorado.

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Acknowledgements

This research was supported by the Colorado Department of Health Care Policy & Financing. The opinions expressed are those of the authors and do not represent the views of the State of Colorado, the Colorado Department of Health Care Policy & Financing, or the University of Denver. Policy and budget recommendations do not represent the budget or legislative agendas of state agencies, the Governor's Office, or other partners. Any requests for funding or statutory changes will be developed in collaboration with the Governor's Office and communicated to the legislature through the regular budget and legislative processes.

Thank you to our partners who participated in the pilot, provided subject matter expertise, and guidance on this project: **Colorado Visiting Nurse Association and Brothers Redevelopment, Inc.**

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Note on Gender-Inclusive Language

The Colorado Evaluation and Action Lab affirms our commitment to the use of gender-inclusive language. We are committed to honoring the unique gender identity of each study participant. Throughout this report, we follow the guidance of the Associated Press Stylebook and the Chicago Manual of Style and use the gender-neutral, singular "they" when appropriate.

Introduction

The CAPABLE Program

The Colorado Department of Health Care Policy & Financing (HCPF) aims to improve the health and quality of life for people in Colorado while decreasing costs. Community Aging in Place–Advancing Better Living for Elders (CAPABLE) is an evidence-based, participant-directed, home-based intervention to increase mobility, function, and the capacity to "age in place" or "age in community." Previous studies have shown it to also reduce health care expenses.

> **The Colorado CAPABLE pilot builds upon previous research by examining program implementation and outcomes for a wider age range of Medicaid members. The intervention is designed to address declines in the independent functioning of adults and help them continue to live safely in their homes.**

In CAPABLE interventions, an interdisciplinary team works with a participant to set goals and direct action plans that change behaviors to improve health, independence, and safety. CAPABLE consists of time-limited services, in a series of visits from an occupational therapist (OT), a registered nurse (RN), and a handy worker who work in collaboration with the program participant. Generally, 10 visits occur over the course of 4 to 6 months and are conducted in the participant's home. A key component of this approach is having participants drive the goal-setting process.

The Colorado CAPABLE pilot intervention was implemented by Brothers Redevelopment, Inc. (BRI), and the Colorado Visiting Nurse Association (CVNA) in partnership with HCPF and the CAPABLE National Center on behalf of the Johns Hopkins School of Nursing (Johns Hopkins). The CAPABLE program is an evidence-based program and has been shown to effectively improve measures of mobility, everyday functioning, and independence through more than a decade of research.

CAPABLE has been tested in multiple small and large trials, each pointing to better participant functioning and lower health care expenses.[1, 2, 3, 4] The evidence base for CAPABLE primarily comes from randomized clinical trials of low-income older adults with difficulties functioning in Baltimore, Maryland. Later studies have built upon this base by implementing successful CAPABLE pilots in California, North Carolina, Vermont, and Pennsylvania.[5] The program is now in 21 states with over 40 sites.

All CAPABLE studies evaluate mobility and functioning by studying changes in difficulties with Activities of Daily Living (ADLs) and difficulties with Instrumental Activities of Daily Living (IADLs). A limited set of studies cover additional outcomes such as efficacy in not falling, depression symptoms, health care usage, and perceived agency.

Definitions

Activities of Daily Living (ADLs) include walking across a small room, bathing, upper and lower body dressing, eating, using the toilet, transferring in and out of bed, and grooming.

Instrumental Activities of Daily Living (IADLs) include telephone use, shopping, preparing food, light housekeeping, washing laundry, traveling independently, taking medications independently, and managing finances independently.

Colorado Context

Current statewide trends make this evaluation especially timely. It has been widely reported that Colorado's population is rapidly changing.[6] According to Census figures, between 2010 and 2020, Colorado experienced the third fastest growth in the 65 to 84 aged population at 63%, compared to a national average of 42%.

At the same time, we know that the vast majority of adults want to "age in place." In an AARP survey of adults over the age of 45, almost 80% of respondents stated that they "strongly agree" with the statement: "What I'd really like to do is stay in my current residence as long as possible." Less than half of those surveyed, however, reported having adequate home design often required to do so, such as wider doorways and entrances without steps.[7] As mobility declines, a lack of home accessibility can increase the risk of falls and need for higher levels of care, such as assisted living or nursing care.

According to an analysis developed by the Colorado Health Institute for the Strategic Action Planning Group on Aging, if demographic and economic trends continue on their current trajectory, state costs for long-term services and supports (LTSS) for older adults will be as high as $1.5 billion in 2030.[8] Preventative care will be critical to supporting Colorado's aging population within this context, as care provided in the home and community is both cost effective and aligned with people's preferences.

The need to evaluate CAPABLE with a broader age range is also warranted. Nationally, over half (56%) of Medicaid members who use LTSS broadly are under age 65. About 70% of those enrollees under age 65 qualify for Medicaid because of a disability.[9]

Evaluation Objectives

The primary purpose of this evaluation is to inform recommendations for making CAPABLE a long-term Medicaid waiver benefit in Colorado. To be considered as a long-term option, CAPABLE must be shown to have positive outcomes for people living across various Colorado regions. Furthermore, it must be beneficial for all age groups over 18 on Medicaid, not just older adults. The evaluation explores the impact of CAPABLE across age ranges and geographic areas, and determines, when possible, the extent to which Colorado CAPABLE aligns with the national literature.

> *"CAPABLE is a success in many ways. It also has not reached its full potential by any means."*
>
> **- Dr. Sarah Szanton, Dean of Johns Hopkins School of Nursing**

HCPF contracted with the Colorado Evaluation and Action Lab (Colorado Lab) to evaluate the CAPABLE program for an expanded population of age groups across Colorado pilot sites. HCPF awarded grant funding to two provider organizations, CVNA and BRI, to pilot the expanded CAPABLE model with the goal of serving 400 Health First Colorado (Colorado Medicaid) members over 2 years.

This evaluation captured lessons learned from the Colorado CAPABLE pilot to inform potential future program expansion and evaluation.

Key Findings and Recommendations

Key Finding 1: Health First members' difficulty with activities of daily living and instrumental activities of daily living improved after participating in CAPABLE.

> **In the Colorado CAPABLE pilot, ADLs fell by 24% and IADLs fell by 21%. All decreases were strongly statistically significant, and effect sizes were in the "large" or in the "medium to large" range.**
>
> **According to Colorado's House Bill (HB) 24-1428, Evidence-Based Designations for Budget, definitions, CAPABLE meets the criteria to be designated a proven practice.**

The estimated pre-post differences from this CAPABLE pilot study demonstrate positive change over time. Furthermore, this study shows that the Colorado CAPABLE pilot drove similar or better outcomes to what is reported in prior research conducted in other states. The prior research included well-designed randomized controlled trials. Comparing a unitless and scale-free measure of effect size, the Colorado CAPABLE pilot generated effects sizes that are categorized as *large* when compared to previous studies. Thus, the best available research evidence indicates an evidence designation of "proven" as defined in Colorado's HB24-1428.

Key Finding 2: There is evidence suggesting that CAPABLE may be particularly beneficial to Health First members ages 25–39 living at home, who have difficulty with Instrumental Activities of Daily Living.

> **Younger members who live alone and do not reside in a Denver Metro area county experience the largest decreases in both aggregate ADL and IADL score after the CAPABLE intervention.**

The Colorado CAPABLE pilot sought to understand if this intervention, which was originally designed for an aging population, is beneficial across the adult lifespan. The findings from this study indicate that there is positive change over time for adults under the age of 65. There is preliminary evidence that the program had disparate impacts by age—particularly for IADLS—and that members in the 25–39 reported the greatest improvement, followed by 40–64 age group. The 25–39 age group sample is small, so future CAPABLE evaluations should aim to capture larger samples of younger members.

Key Finding 3: CAPABLE's approach makes it uniquely valuable and adaptable to an expanded target population.

> **Process evaluation found CAPABLE's intentional synergistic design to produce additional benefits to members beyond the core measurable outcomes.**

CAPABLE's synergistic, team-based approach means that through collaborative, joint-problem solving, the interdisciplinary team is able to coordinate on individualized care. Within the CAPABLE context the OT, RN, and handyworker roles differ significantly from these traditional roles: While using the same skill sets, their approach is to empower people to build sustainable skills to care and advocate for themselves.

CAPABLE supports an "entrepreneurial" delivery of services: The multi-visit format allows the team to maximize impact and quickly adapt to changing circumstances; timely follow-through on recommended tools/equipment/home adaptations means that members' needs are addressed sooner; and because service providers understand member needs and priorities, they become a trusted source for referrals to other services.

CAPABLE was generally adaptable to the expanded target population, including a wide range of ages and geographic locations. Several resources and lessons learned are available to support replication of the CAPABLE model across the state.

Recommendation: Evaluation results support making CAPABLE a long-term Medicaid service/benefit.

> **Recommended that HCPF explore creating a two-tiered Home Modification Benefit, with the CAPABLE model serving as Tier One.**
>
> **The average total cost per member of delivering CAPABLE was $2,976. For over 85% of members, the total cost was less than $3,500.**

The Colorado pilot demonstrated that CAPABLE is a viable candidate for Colorado's array of Medicaid services/benefits. It is recommended that HCPF explore creating a two-tiered Home Modification Benefit, with the CAPABLE model serving as Tier One. Additional targeted messaging and evaluation opportunities would strengthen the case to Centers for Medicare & Medicaid Services (CMS) that CAPABLE is an evidence-based, packaged service that is distinct from the current service array.

The average total cost per member of delivering CAPABLE during the pilot in Colorado was $2,976. For over 85% of members, the total cost was less than $3,500.

Prior Research and CAPABLE Program Logic Model

Prior Research

> **CAPABLE has been shown to be effective for older adults in multiple causal studies**

The first CAPABLE pilot study began in 2009.[10] The intervention lasted six months and consisted of one-hour visits with an OT, 1-hour visits with an RN, and money for handyman services. The randomized controlled trial (RCT) was conducted in Baltimore, Maryland with a small sample of predominantly older Black women. Twenty-four participants were randomized into the CAPABLE treatment group and 16 into an attention control group receiving social visits with options for sedentary activities in lieu of the full CAPABLE program. The authors estimated Cohen's *d* values corresponding to "moderate" reductions in both ADLs and IADLs after comparing means pre- and post-intervention between treatment and control.[i] CAPABLE lowered reported ADLs by 66.7% and IADLS by 47.8%. Despite the small sample size and non-random sample selection processes, these results were promising.[ii]

[i] Cohen's *d* is a statistic that calculates a standardized difference between raw means. Effects values around 0.20 are considered small, around 0.50 are considered moderate, and around 0.80 are considered large (Cohen, 1992).
[ii] Convenience sampling was used to build a pool of eligible participants. In addition, potential participants needed to select in, be eligible for, and complete the intervention.

A follow-up RCT in 2012 gathered a larger sample of 300 participants.[11] The eligibility criteria and the intervention were nearly identical as the pilot study. Participants were drawn from Baltimore, Maryland, and were offered up to 10 sessions (six with an OT and four with an RN) and $1,300 for home repairs, modifications, and/or devices. Similar to the pilot study, after eligibility exclusions, the initial sample was disproportionately women (87%), Black (86%), and older (the mean age was 75).

Compared to the pilot, additional ADL and IADL outcomes were assessed, and participants were allowed to self-score the severity of the ADL or IADL. After 5 months, the CAPABLE intervention group saw, on average, a statistically significant 30% reduction in ADL scores and non-statistically significant 17% reduction in IADL scores relative to the attention control group. In a 2021 review of five CAPABLE studies, the 2012 intervention is considered to be of the highest quality and design.[12] That said, the 12-month estimates were not conclusive.

To validate CAPABLE outside of Baltimore and explore the persistence of treatment effects over longer periods of time, four CAPABLE studies were conducted in different locations with different types of implementing organizations, housing stocks, and participants.[13]

The four locations were small urban locations in California, North Carolina, Vermont, and Pennsylvania. The participant composition was different. For example, the analytic sample was not as heavily women or Black. At the conclusion of the intervention, there were 137 participants. Twelve months from baseline measurement, the intervention group reported a statistically significant 2.0 drop in ADL scores, while the control group reported a weakly significant 0.7 drop. The 1.3 difference in decreases is large enough to be statistically significant. With respect to IADLs, the intervention group saw a statistically significant 1.1 drop in IADL scores, while the control group saw a 0.2 drop. The 0.9 difference in reductions is not large enough to rule out that the decreases were equivalent.

A review of six CAPABLE studies compares Cohen's *d* values.[14] Of the six, three were RCTs, and the other three used a pretest-posttest comparison design that compared participants with a matched control group. The 12 locations of the six studies were mostly metropolitan but included smaller urban, suburban, and rural settings as well. Most interventions served African American older adults, but one site served a Latino population in a mobile home community (San Diego, CA), and another site served rural and urban White people (Greensboro, NC).

All six studies found that participants who received CAPABLE reported reduced ADL and IADL limitations. In the three RCTs, the CAPABLE intervention groups saw significant reductions in both ADL and IADLs, with Cohen's *d* ranging from 0.2 to 0.89 (low to strong) for ADL changes and from 0.05 to 0.38 (very low to moderate) for IADL changes. Sites implementing a shorter version of CAPABLE also reported reductions in ADL and IADL limitations, with Cohen's *d* ranging from 0.23 to 0.81.

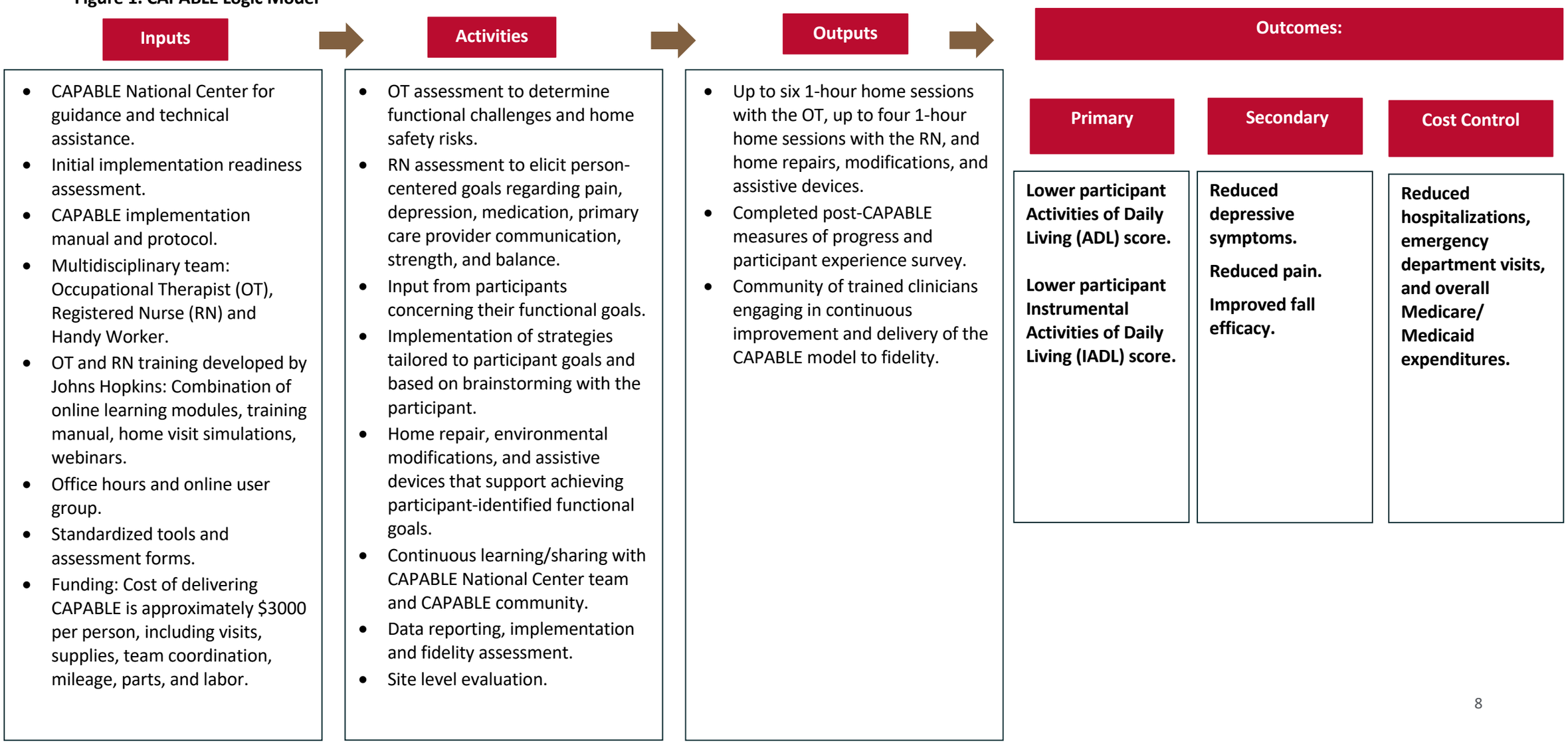
A study in St. Louis, Missouri, overlapped with the COVID-19 pandemic. Given increased isolation, and CAPABLE being in-home and member-directed, it was hypothesized that CAPABLE could have

even larger impacts on seniors.[15] Similar to earlier studies, the sample consisted of mostly older Black women (n = 31). After eight to ten in-home sessions over four months, the authors found marginally statistically significant 18% and 31% reductions in ADLs and IADLs, respectively. Cohen's *d* were on the smaller side (0.36 and 0.37), but greater than 0.20.

Logic Model

The logic model below describes the program's components, activities, and desired outcomes.

Figure 1. CAPABLE Logic Model



CAPABLE Compared to Services Currently in Medicaid Service Array

The Colorado Medicaid Service Array includes some individual programs that have overlap with CAPABLE; however, what makes CAPABLE unique is its integration of OT, RN, and Home Modification activities.

- **Occupational Therapy (OT):** This benefit may be delivered in the home setting. To access OT, members must first visit a physician or other eligible prescribing provider.
- **Home Modification:** This benefit is designed to ease mobility and daily functioning for qualifying individuals (not all Medicaid members qualify, as this benefit is part of Colorado's Home and Community-Based Services Waiver). Specific modifications, adaptations, changes, or improvements in existing home settings can be made with the goal of ensuring health, welfare and safety, enabling members to function with greater independence in the home, and/or to prevent institutionalization or support deinstitutionalization.
- **Home Health Program**: This benefit provides services from a licensed and certified Home Health Agency for the treatment or amelioration of an illness, injury, or disability. Members can qualify for skilled home health services to address acute health care needs, or Long-Term Home Health for ongoing services.

CAPABLE is an OT-driven program that integrates home modifications and RN services. All three program aspects are coordinated and aligned around a member's functional needs and goals. This comprehensive approach, paired with members' ability to access CAPABLE services without an eligible prescribing provider visit, are among the ways CAPABLE is different from existing benefits.

More information is provided in the Lessons Learned section regarding how the CAPABLE model differs from existing Medicaid services, the added benefits of a coordinated, integrated approach, and an exploration of how CAPABLE could serve as an enhancement or alternative to the current Home Modification benefit.

Description of the Study

The implementation of CAPABLE has been refined by Johns Hopkins through many clinical trials, leading to the creation of a standardized intervention. The model has never been rigorously replicated and evaluated in the Colorado context to determine if it drives outcomes like what has been demonstrated in other states. The Colorado pilot also differs from previous studies by expanding the potential member population from older adults to all adults ages 18 and older and who are Health First Colorado members. Therefore, this current evaluation contains elements of both a process evaluation and outcome evaluation.

The process evaluation focuses on the feasibility of and the lessons learned from delivering CAPABLE to a broader age range of Health First members. The outcomes evaluation compares outcomes for this population to outcomes in previous research. With both elements, government decision makers are better positioned to determine if including CAPABLE in the Medicaid service array is likely to strengthen the efficacy of existing services.

Research Questions

Research Question #1: How do the outcomes in Colorado's CAPABLE pilot compare to the outcomes seen in CAPABLE pilots in other states?

Research Question #2: Do outcomes in Colorado's CAPABLE pilot vary by age and geographic region? To what extent can program outcomes be replicated for an expanded population of Medicaid members in Colorado?

Research Question #3: What are lessons learned from piloting new CAPABLE sites across a broader range of participants? What are some considerations for scaling the program?

Steps to Building Evidence

Familiarity with the Colorado Steps to Building Evidence model is essential to understanding how the present evaluation will inform decision makers. There are five steps in the evidence continuum. The first step is the creation of a logic model that formalizes how an intervention will lead to change and the desired outcomes. The second step is to engage in fidelity monitoring and collect data to improve implementation quality. In the third step, descriptive analysis is used to assess program outcomes and monitor trends over time. The fourth and fifth steps establish causal evidence of the program's impact using a rigorous experimental design.

The Colorado Lab meets stakeholders where they are to move programs along the evidence continuum, regardless of where they start. The Colorado CAPABLE pilot has the advantage of being built upon existing standardized program elements (Step 1) and supported by peer-reviewed research (Steps 4 and 5). Therefore, the Colorado Lab focused this evaluation on program design, data collection, implementation monitoring, and conducting outcomes assessments (Steps 1, 2, and 3) in the Colorado context.

The following is a description of the Colorado CAPABLE pilot evaluation approach, in alignment with the logic model. A mixed methods approach was used to meet the overall evaluation objective of informing recommendations for making CAPABLE a long-term Medicaid benefit in Colorado.

Evaluation Approach

Step 1 in Evidence Building: Program Design

The Colorado Lab evaluation team collaborated with HCPF, CAPABLE providers, and the CAPABLE National Center to determine whether program modifications were needed to serve an expanded population and provide further evidence of scalability. Since CAPABLE is designed to be participant-directed, there were no significant modifications needed to the standardized program elements or

outcome measures to accommodate the expanded target population.[iii] However, participant age, geographic location, and Medicaid eligibility were important factors from a process and implementation standpoint, and are discussed further in the Lessons Learned section. To solidify and document the program design used for the Colorado pilot, the Colorado Lab developed the logic model on page 8.

> **CAPABLE centers equity by co-creating and tailoring goals and strategies to each person's cultural beliefs, strengths, and needs. In CAPABLE, all participants are offered the same number of visits and the ability to define the same number of individual goals, but the program content is completely tailored to the individual.**

Step 2 in Evidence Building: Program Implementation

Through a series of focus groups, the CAPABLE evaluation explored successes and challenges related to program implementation, specifically as it related to participant age, geography, and Medicaid status. As discussed further in this report, some of the lessons learned were around outreach and recruitment of the expanded target population, challenges around consistent engagement and motivation in the program, and key elements that contributed to site readiness. Qualitative analysis of information gathered throughout the pilot also added to the deeper understanding of specific CAPABLE model components, how they differ from the delivery of existing Medicaid services, and opportunities for both expanding the CAPABLE program in Colorado and using it to enhance the Home Modification waiver benefit.

Step 3 in Evidence Building: Pretest-Posttest Comparison Design Outcomes Assessment

The Colorado CAPABLE evaluation is a one-group, pretest-posttest comparison design that aligns with Step 3 of Colorado's Steps to Building Evidence. The pretest-posttest design is a basic type of statistical analysis that compares CAPABLE participants before and after receipt of the CAPABLE intervention. The design involves obtaining baseline measures of outcomes of interest prior to administering the CAPABLE intervention, followed by obtaining measures of those same outcomes once the intervention is completed. This pretest-posttest design outcomes assessment was used to determine if CAPABLE is beneficial for age groups over 18 on Medicaid, not just older adults.

[iii] For details on standardized CAPABLE implementation practices and training, visit the CAPABLE National Center training overview page.

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Methods

Methods

- ***Participant recruitment and eligibility***
- ***Sample description***
- ***Outcome and engagement measurement***
- ***Pre-post outcomes assessment***
- ***Capturing lessons learned***

Participant Recruitment and Eligibility

CAPABLE implementation partners reached members in Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, El Paso, Elbert, Jefferson, and Larimer counties.

359 members participated in CAPABLE, spanning ages 18–98, of which 277 completed 10 or more sessions.

At intake, 57% of members were based in Denver Metro area counties and 43% in other Front Range counties.

Recruitment

Recruitment for participation required the use of convenience sampling (non-probability sampling) based on geographic proximity to providers and willingness to participate in the CAPABLE pilot. CVNA provided CAPABLE in and around the Denver metro area including Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson counties. CVNA expanded into El Paso and Larimer during the pilot period. BRI provided CAPABLE services in Adams, Denver, El Paso, and Elbert counties.

CVNA primarily utilized a two-pronged approach to identify potential CAPABLE participants. First, they leaned on existing relationships and provided outreach and education to various referral sources. These included health organizations that serve Health First Colorado members, such as community resource centers, as well as social workers, care coordinators, and physician groups (i.e., professionals looking for resources for their members). Second, CVNA developed an outreach strategy to directly reach potential participants by going to where they live (e.g., apartment complexes and low-income housing). CVNA hired a Community Liaison to assist with outreach and, in some cases, were able to verify Medicaid status and conduct the pre-screen questionnaire on-site with potential participants.

BRI serves over 30,000 people in Colorado annually through its various services and primarily relies on its own member list to identify CAPABLE participants. This included those who may not have previously received services but made contact and self-identified as having a housing-related need.

BRI also conducted outreach to aligned referral sources using materials in both English and Spanish. BRI had a dedicated staff member lead efforts around outreach and recruitment, as well as, to conduct pre-screen questionnaires.

CAPABLE Pilot County Reach

Providers served participants in the Denver Metro area and the greater Front Range. 57% of participants at intake were based in Denver metro area counties (e.g., Adams, Arapahoe, Denver, Douglas, and Jefferson) and 43% in other Front Range counties (e.g., Boulder, Broomfield, El Paso, Elbert, and Larimer).

Understanding how outcomes vary across age groups and regions is a priority for this evaluation, so the evaluation team ensured that each provider had an intentional recruitment plan that aligned with Research Question #2.

Eligibility Criteria for Health First Colorado Members

For both CVNA and BRI, once potential participants expressed interest in CAPABLE, they were screened for eligibility following practices outlined in CAPABLE training materials. The eligibility criteria identified individuals who would be a "good fit" for the program, namely those who struggled with mobility and daily functioning, but had enough stability in terms of overall health and living situation to fully engage in the program. The expanded age criteria, geographic regions, and Health First membership requirement are specific to the Colorado pilot.

Eligibility criteria for participation in the Colorado CAPABLE pilot were as follows:

- A Health First Colorado member (i.e., on Medicaid).
- 18 years of age or older.
- Lived within a county served by CVNA or BRI.
- Had no plan to move in the next year.
- Had difficulty in one or more ADLs and/or two or more IADLs.
- Had been hospitalized less than four times in the past year.
- Was not actively receiving in-home rehabilitation (e.g., skilled nursing home health care or in-home physical or occupational therapy).
- Was not terminally ill or an active cancer treatment patient (e.g., receiving radiation or chemotherapy or other significant treatment that substantially impacts daily functioning).
- Was cognitively intact as measured by a Telephone Interview for Cognitive Status standardized examination or a Short Portable Mental Status Questionnaire.

Analytic Sample Description

67 was the median member age, approximately 43% of the sample was under age 65.

78% of participants were women, and 69% identified as White. 26%identified as either Black/African American or Hispanic/Latino.

At intake, 22% of members lived alone, 70% lived in multi-living units, and 81% did not own their place of residence.

Compared to BRI, CVNA served more women, more non-Whites, and slightly older members.

Data collection began during the screening process, before any care was provided and prior to the first OT visit. While assessing eligibility, CVNA and BRI collected relevant participant information. This information fell into three categories—demographics, housing, and member conditions at baseline.

- Demographic measures included age, race/ethnicity, sex, zip code, county, and highest level of education attained (CVNA only).
- Housing measures include the member's type of residence (e.g., apartment, single-family home, and multi-living unit), whether they lived alone, and residence ownership status.
- Member conditions at baseline include ADL and IADL scores, a standardized measure of pain, and a Falls Efficacy rating.[iv]

Collecting information on a member's demographics and initial living situation is necessary to understand what, if any, moderating factors are impacting the efficacy of the intervention. Member conditions at baseline are used to measure positive or negative progress.

Table 1 summarizes the characteristics of CVNA and BRI members who completed 10 or more sessions (intervention "completors"). The first row reports sample sizes. The first column reports summary measures for the combined analytic sample. The last column reports the absolute difference between CVNA and BRI analytic samples, including asterisks to indicate a statistically significant difference based on either a difference-in-means t-test for continuous variables, or a chi-square test of equality of proportions for categorical variables.

[iv] Providers also collected a measure of self-reported overall health and a standardized depression score, but they are distinct enough such that they should not be compared or aggregated.

Table 1: Summary of Member Characteristics in the Analytic Sample and Provider Comparison

Characteristic	Combined Analytic	CVNA Analytic	BRI Analytic	Difference across Providers
Sample size.	277	220	57	
Mean age (years).	65.6	66.3	62.9	3.5*
Age by group (%).				
Ages 25–39.	4.3	2.7	10.5	7.8**
Ages 40–64.	38.3	38.2	38.6	0.4
Ages 65+.	57.4	59.1	50.9	8.2
Female (%).	78.3	81.4	66.7	14.7*
Race/Ethnicity (%).				
Black.	12.3	14.1	5.3	8.8*
Latino/Hispanic.	14.1	15.0	10.5	4.5
White.	68.6	65.0	82.5	17.5**
Denver Metro (%).	55.2	68.2	5.3	62.9***
Less than high school or equivalent (%).	Not available	15.0	Not available	Not available
Residence ownership (%).	19.1	6.4	68.4	62.1***
Living Alone (%).	78.0	84.1	54.4	29.7***
Multi-living unit (%).	70.0	83.2	19.3	63.9***

Notes: *** indicates the difference is statistically different at the 1% level ($p < 0.01$). ** indicates significance at the 5% level ($p < 0.05$). * indicates significance at the 10% level ($p < 0.10$).

In the analytic sample, most members were women, White, 65 or older, living alone in multi-living units, and not owners of their residence. This snapshot of all members contains some similarities to previous studies that have drawn from predominantly older female populations. Two key differences emerge, however, particularly with earlier studies based in Baltimore. First is the racial/ethnicity distribution, and second is the age distribution. The current sample is over two-thirds White and almost 43% of the analytic sample is *under* 65 years old. Colorado CAPABLE is clearly reaching a distinct audience than has been studied in the past.

BRI members were on average 3.5 years younger than CVNA members and contain larger percentages of members in the 25–39 age group. CVNA had 17.5 percentage points fewer Whites in their sample of members who completed the program. BRI members were much more likely to

own their home and much less likely to be living in a multi-living unit. These differences are all statistically significant to various degrees, but overall, demonstrate that BRI and CVNA served different populations along a variety of dimensions. These differences are likely due to geography (BRI almost exclusively served members south of the Denver metro area), differences in approaches to recruitment, and perhaps differences in the relative expertise of the two providers. For example, BRI offers a wide range of services helping people access affordable, safe and accessible housing solutions in Colorado, and relied heavily on their existing member list for recruitment. CVNA, on the other hand, is a home health agency and specifically targeted apartment complexes and low-income housing units for recruitment. Similarly, a recruitment strategy reliant on word-of-mouth is more likely to generate a homogenous sample.[16]

Understanding Attrition

The intake sample is larger than the analytic sample because not all members completed 10 sessions. Understanding who these individuals are provides essential context for interpreting pre- and post-results. BRI did not provide information on members who did not complete 10 sessions or more; therefore, we were not able to compare intake and analytic samples for BRI. CVNA did collect this information as well as the reason why a member did not finish. The reasons are as varied as the members themselves and generally fall into two groups: member's choice (e.g., declined to continue, did not respond, and moved away) and external factors more likely to be outside of a member's control (e.g., cognitive decline, movement to an assisted living facility, and hospitalization).

If we contrast CVNA completors (n = 220) from CVNA non-completors (n = 82), and statistically test differences in means or proportions, we find that the two groups are not statistically different in terms of their age distribution, sex, overall race/ethnicity distribution, location, educational attainment, living alone status, residence ownership, and residence type. Only a single difference emerged: CVNA completors were more likely to identify as Hispanic/Latino (a difference of 9.4 percentage points; $p = 0.06$) than CVNA non-completors.

The finding that members who opted out or were pulled out by personal circumstances are not dissimilar to members that continued on helps mitigate concerns that attritors were a non-random bunch. If non-completors were very different from completors, we would be concerned that the results reported were driven by a sample that was not representative of the original sample at intake. For example, one could hypothesize that members with more education would be more likely to complete 10 sessions. Since education is also a determinant of health status, our analytic sample would produce impact estimates that misattribute positive outcomes to the CAPABLE intervention when they are in part due a member's level of education. Our analysis comparing completors and non-completors helps rule out this possibility and other hypotheses like this.

Outcome and Engagement Measurement

HCPF required CVNA and BRI to collect project-specific data throughout the intervention. The Colorado Lab evaluation team worked closely with HCPF and providers to ensure consistency in key measures to allow for meaningful comparisons across pilot sites, providers, and with past research, while still allowing providers to tailor their approach based on past organizational experience and the target population. For example, HCPF and the Colorado Lab were careful to ensure ADLs and IADLs were measured using standardized assessment tools, but were more lenient on how overall health status was measured.

Outcomes measures were documented during scheduled visits and at the conclusion of the intervention. Outcomes align with Johns Hopkins' suggested *Moderate* evaluation approach for CAPABLE. Johns Hopkins has developed a recommended set of measures for CAPABLE evaluations. The two outcome measures most central to previous CAPABLE evaluations are ADL function and IADL function.[17] Other measures are occasionally tracked alongside ADLs and IADLs, but not all use the same assessment tools or scales. For example, measuring symptoms of depression is a recommended measure, and past research has utilized the Patient Health Questionnaire-9 assessment. However, measuring overall health status is less standardized, with researchers often using a variety of questions and scales.

For this evaluation, measures of health status, depression, and whether individual goals were met were not included in the final analysis, as the measures used between the two providers were too different to establish a common scale. In the future, if CAPABLE becomes a long-term benefit in Colorado and/or further evaluation is conducted, HCPF, researchers, and providers may want to consider ensuring equivalent measures up front, especially for items of interest.

Outcomes Measured Pre and Post Intervention

- **Difficulties with ADLs**. ADL function is a self-reported measure on a 1- to 5-point scale across eight standardized function areas. The point scales correspond to "No difficulty," "A little difficulty," "Moderate difficulty," "A lot of difficulty," and "Unable," respectively. Function areas included walking across a small room, bathing, upper and lower body dressing, eating, using the toilet, transferring in and out of bed, and grooming. Higher scores indicate poorer functioning.[v]
- **Difficulties with IADLs.** IADL function is a self-reported measure on a 1- to 5-point scale across another set of eight standardized function areas. The point scales corresponded to "No difficulty," "A little difficulty," "Moderate difficulty," "A lot of difficulty," and "Unable," respectively. Function areas included telephone use, shopping, preparing food, light housekeeping, washing laundry, traveling independently, taking medications

[v] The ratings scale used reflects the most recent recommendations from Johns Hopkins. Earlier CAPABLE studies employ scales with less granularity.

independently, and managing finances independently. Higher scores indicate poorer functioning.

- **Falls Efficacy**. Falls efficacy was measured using a Tinetti scale.[18] Members were asked how confident they were not falling in 10 activities and to rate their confidence from 1 to 10 (1 indicating "Not confident" and 10 indicating "Very confident"). Higher scores indicate the member is more confident in their ability *not* to fall.
- **Pain**. The Pain, Enjoyment of Life and General Activity scale is a standardized three-item assessment of pain intensity and interference.[19] Each item is scored 0 to 10, where 0 is "No pain" and 10 is "Pain as bad as you can imagine."

Outcomes Measured Post Intervention

- **Number of Visits.** CVNA documented the number of sessions with each member regardless of whether they reached the 10 sessions necessary to be considered a recipient of the full intervention. If a member did not reach 10 sessions, CVNA also provided a brief explanation of the reason.
- **Cost of Providing Services.** Costs are broken down into supply and material costs (e.g., OT, RN, and handy worker purchases) and labor costs. BRI labor costs include OT, RN, and handy worker labor. CVNA labor costs are categorized as direct and indirect labor costs.

A review of previous CAPABLE evaluations made clear that program participants experience a variety of positive outcomes in addition to those captured by standard measures. The evaluation team included this qualitative data in the Lessons Learned section.

In addition to the member background information and outcomes data, HCPF required providers to collect and report monthly engagement data to understand program implementation and programmatic challenges and successes.

Monthly Participant Engagement

- Number of individuals screened, invited, and refusing participation.
- Number of new participants.
- Number of program completions.
- Member zip codes.

This evaluation report recommends that future evaluation efforts include measures such as 6- or 12-month pre-post hospitalization, emergency room use, home health care use, and total cost of care (e.g., Medicaid claims). This data is intended to lay the foundation for a future cost savings analysis as outlined in the *Comprehensive* evaluation plan by Johns Hopkins. The Colorado pilot does include tracking the cost per member, broken out by clinical, supplies, and home modifications.

Pretest-Posttest Comparison Design Outcomes Assessment

The outcomes assessment compares average outcomes pre- and post-CAPABLE intervention, and then to benchmarks from previous studies.

The multivariate regression analysis measures disparate impacts of the intervention by age, location, and living situation.

The Colorado CAPABLE evaluation is a one-group pretest-posttest comparison design that aligns with Step 3 of Colorado's Steps to Building Evidence. The pretest-posttest comparison design is a basic type of statistical analysis that compares CAPABLE participants before and after receipt of the CAPABLE intervention. The design involves obtaining baseline measures of outcomes of interest prior to administering the CAPABLE intervention, followed by obtaining measures of those same outcomes once the intervention is completed.

There are advantages as well as limitations to this approach. A one-group pretest-posttest design approach is simple to implement and straightforward to interpret. Results can be presented in several ways, are accessible to a broad range of audiences, and there is less demand for time and resources compared to quasi-experimental designs or RCTs. Expediency was an important consideration given the availability of time-limited American Rescue Plan Act funding for the Colorado pilot. For context, the values from this part of the analysis will be compared to values from previous studies.

In addition to calculating differences in means pre- and post-CAPABLE intervention, we leverage participant data at intake using multivariate regression analysis. The flexibility of regression models allows us to investigate impacts along different margins and potential effects of moderating variables on outcomes. The regression is designed to explore a narrow set of characteristics that were identified during conversations with HCPF and the providers. Specifically, we estimate the association between the change in aggregate ADL or IADL on age, living alone status, and Denver Metro area residency.

The primary limitation of an approach that does not involve randomization or a comparison group that does not receive the CAPABLE intervention is that we cannot assert a causal connection between the intervention and outcomes of interest. Participant outcomes are the result of a wide range of environmental, behavioral, and historical factors that cannot be fully accounted for with the existing data and statistical modeling. Factors that are observed alongside the intervention have the ability to distort the estimate of CAPABLE's "true" impact. For example, a participant may also be receiving services from another program simultaneously. If the researcher is not made aware of this other program, it could lead them to attribute a positive outcome solely to the CAPABLE intervention instead of the combination of programs. Therefore, the evaluation results presented in this report are stated to provide insight into the *association* or *correlation* between the CAPABLE pilot intervention and participant outcomes.

To address the previous limitation, the Colorado Lab has aimed to identify relevant factors that could impact the efficacy of the intervention. For example, despite having the same training, there may be systematic differences in how OT, RN, contractor teams, or providers implement the intervention. Team members who work with each other regularly could develop a rapport that improves efficiency and service quality. One provider could discover an efficiency that the other does not. While beneficial to the participant, these nuances are not part of CAPABLE's design. As evaluators, the Colorado Lab wants to ensure that it is the CAPABLE intervention, not the specific mix of team members or provider, that is driving the outcomes. With this possibility in mind, the Colorado Lab brought these concerns to providers and learned that while some team members worked with each other on a regular basis, providers often worked in teams with different individuals. There was no mention of challenges associated with new teams—one reason for this was that weekly meetings allowed providers to clearly define roles and get to know each other personally. In the end, the Colorado Lab was able to rule out differential team effects of the intervention. Systemic differences in outcomes by provider are a consequence of geographic focus, so location is considered in the regression analysis.

In light of the discussion above, it is important to recall that multiple previous RCT studies have already shown CAPABLE to be impactful, thus this study was designed to broaden our understanding of CAPABLE, not to test the CAPABLE model itself.

Capturing Lessons Learned

In addition to quantitative analysis, the CAPABLE evaluation included capturing lessons learned from the Colorado pilot and considerations for potential future expansion. Themes were identified through qualitative analysis of information gathered through the following methods:

- Regular engagement (monthly check-ins) with HCPF and service providers to discuss program status, successes, and barriers;
- Focus groups with CVNA and BRI program staff at two checkpoints throughout the pilot period;
- Focus groups with CVNA and BRI program administrative staff/leadership at two checkpoints throughout the pilot;
- Focus group and ongoing discussions with HCPF staff; and
- Written provider status and final reports to HCPF.

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OUTCOMES EVALUATION RESULTS

Key Findings

- ***Results of pre-post comparison***
- ***Results of multivariate regression analysis***
- ***Cost analysis***

Results of Pretest-Posttest Comparison Design

> **In the Colorado CAPABLE pilot, difficulty with ADLs fell by 24% and IADLs fell by 21%. All decreases were strongly statistically significant, and effect sizes were in the *large* or in the *medium to large* range.**
>
> **Comparing a unitless and scale-free measure of effect size, the Colorado CAPABLE pilot generated effects sizes that are categorized as *large* when compared to previous studies.**

Table 2 presents the results of the pretest-posttest comparison. The first two columns of values in Table 2 report the means of total ADL score, total IADL score, Falls Efficacy, and the standardized pain assessment pre- and post-CAPABLE intervention. Standard errors are provided underneath the means in parenthesis. The third column reports the mean difference and the conclusion based on a paired t-test.[vi] The paired t-test calculates the average of each member's pre-post difference. Asterisks next to the differences indicate whether the difference is statistically significant at the 1%, 5%, or 10% level ($p < 0.01$, $p < 0.05$, or $p < 0.10$, respectively). The fourth column calculates a standardized effect size using Cohen's *d*.[20] Calculating Cohen's *d* is a unitless and scale-free way to report the size of an effect, so that it is comparable across different studies. Cohen's *d* also has the advantage of having an established guideline for interpreting what *small*, *medium*, and *large* effects are.[vii]

After completing ten or more CAPABLE sessions, on average, members report statistically significant reductions in aggregate ADL, IADL, and pain scores. members also report a statistically significant increase in their confidence in not falling during daily activities. For ADLs, the 3.8-point decrease is a 24% decrease from baseline, and according to the standardized measure of effect size, Cohen's *d*, can be categorized as a *large* effect. For IADLs, the 3.8-point decrease is a 21% decrease from baseline, and is categorized as a *medium to large* effect. For Falls Efficacy, the 9.9-

[vi] The paired sample t-test does not assume the variances are equal or that pre and post samples are independent. To be included in the test sample, a member must have both a pre- and post-outcome measure. Five members did not have post-outcome measures, so they are not included.

[vii] Cohen's *d* is most appropriate when the two groups being compared are independent, have similar standard deviations, and are of the same size—like in an RCT. In general, Cohen's *d* near 0.2 is considered a *small* effect size, near 0.5 *medium*, and near 0.8 *large*. Effect size interpretation can differ across disciplines.

point increase is a 14% increase from baseline, and can be categorized as a *medium* effect.[viii] For pain, the 3.0 point decrease is a 17% decrease from baseline, and can be categorized as a *small to medium* effect.

Table 2: Outcomes Pre- and Post-Intervention with Comparison Studies

Outcomes	Pre	Post	Difference (score)	Difference (%)	Cohen's *d*	Szanton et al. (2019)	Breysse et al. (2021)	Szanton et al. (2021)
ADLs.	15.9 (0.3)	12.0 (0.3)	-3.8***	-23.8%	0.78	-44.5%	-45.5%	0.20-0.89
IADLs.	18.4 (0.4)	14.6 (0.4)	-3.8***	-20.6%	0.64	-37.5%	-19.6%	0.05-0.38
Falls Efficacy.	71.7 (1.3)	81.6 (1.1)	9.9***	13.8%	0.50		28.3%	
Pain.	17.9 (0.5)	14.9 (0.5)	-3.0***	-16.7%	0.35		-31.9%	

Notes: *** indicates the difference is statistically different at the 1% level ($p < 0.01$).

Columns six, seven, and eight list values from three recent reputable studies. For Szanton et al. (2019) and Breysse et al. (2021), we calculate percentage decreases for the intervention group using raw pre and post means. We ignore the control groups in both studies as they are not relevant. This provides the closest comparison to the percentage difference shown in column four. For Szanton et al. (2021), column eight reports a range of Cohen's *d* based on their summary analysis of multiple studies. These ranges will help us situate Cohen's *d* estimates from column five.

Five months post baseline, Szanton et al. (2019) reported that ADL and IADL unadjusted mean reductions of 44.5% and 37.4%, respectively.[ix] These are higher than the percentages reported in column four. After 12 months from baseline, the percentages decrease to 33.8 and 27.1, closer to Colorado's CAPABLE intervention. Twelve months from baseline, Breysse et al. (2021) report a percentage decrease in unadjusted mean total ADLs for the intervention group that is very close to Szanton et al. (2019). The decrease in mean total IADLs closely mirrors Colorado CAPABLE.

Szanton et al.'s (2021) summary analyses of three RCTs provides ranges of Cohen's *d*. In all three RCTs, both ADL and IADLs decrease but their effect sizes vary. For ADLs, the Colorado CAPABLE

[viii] In the studies referenced, the measurement of Falls Efficacy is inverted, so that a negative change corresponds to a positive outcome for the individual. The current study uses the Tinetti Scale without adjustments.
[ix] The aggregate ADL and IADL point scales range from 0 to 16, so the total point change is not meaningful. Less granularity in the measurement of ADLs and IADLs means that aggregate measures may be cruder, and percentages more prone to higher variability.

study produced an effect size near the higher end of the range and substantially beyond the range for IADLs.

There is no study or set studies that can be used to directly compare against Colorado's CAPABLE intervention. While Breysee et al. (2019) aimed to establish a greater level of external validity by implementing CAPABLE in four states, their analytic sample is not large. Szanton et al. (2019) had a much larger sample but is not representative of the Colorado sample. Differences in research designs, sample sizes, timing of when outcomes are measured, population demographics, measurement scales, and idiosyncrasies on how implementation played out on-the-ground all force us to be cautious of direct comparisons. Nonetheless, the results appear reasonable to what has been found in rigorous research designs. We should not expect the results to match up, but it is reassuring to see similarities.

To enhance comparability, we restrict the Colorado CAPABLE sample to only members ages 65 and older. The decline in aggregate ADL and IADL are similar to the full sample, though slightly smaller, at -3.5 and -3.2 points, respectively. In percentage terms, the percentages are also close to the full sample, with -23.9% of ADLs and -18.8% for IADLs.

Results of Multivariate Regression Analysis

> **Younger members, living alone, and not residing in a Denver Metro area county experience the largest decreases in both aggregate ADL and IADL score due to the CAPABLE intervention.**
>
> **This finding is preliminary evidence that the Colorado CAPABLE pilot had disparate impacts by age—particularly for IADLs.**

To dig deeper into factors driving the improvements in aggregate ADL and IADLs, we leverage participant data at intake using multivariate regression analysis. The flexibility of regression models allows us to investigate impacts along various margins and potential effects of moderating variables on outcomes. The regression model was designed to explore a narrow set of characteristics of interest that were identified during conversations with HCPF and the providers. Specifically, the model estimates the association between the change in aggregate ADL or IADL on age, living alone status, and Denver Metro area residency.

Given the expanded age range in the Colorado pilot, the model estimates the average difference between members in the 25–39 age group and either the 40–64 or 65+ age groups. It is unclear *a priori* whether younger or older participants would benefit more from CAPABLE 6 months out, so adding age terms to the model helped explore this question.

Members living alone could potentially see greater CAPABLE benefits because, for example, a partner or housemate could be helping a member maintain a home, identify medical or home repair needs, provide motivation, or assist the member with reminders. On the other hand, one could hypothesize that cohabitors help enhance CAPABLE by reinforcing what is learned during

visits. In the regression model, we add an indicator estimating the difference between members who lived alone and those that did not. Finally, adding an indicator for whether the member lived in the Denver Metro area helped detect potential differences in CAPABLE benefits based on geographic location, which is of interest since previous CAPABLE studies tended to focus on urban areas.

Table 3 presents regression coefficient estimates from the multivariate regression estimating the change in member outcome on age group indicators, a living alone status binary variable, and a binary indicator for whether the member lived in a Denver Metro area. Column 1 presents the estimates with standard errors below the coefficients in parenthesis. All regression models estimate heteroskedasticity-robust standard errors.

In the first row of column 1, the reference group displays the average decrease in aggregate ADLs for the 25–39 age group who do not live alone or in a Denver Metro area county. All coefficients below that report average differences relative to that reference group and can be added to this value depending on the group in focus. The positive estimate for the 40–64 age group indicates a *smaller* ADL drop compared to the 25–39 age group. When added, the point decrease is -3.49 (recall that a negative point change is an improvement in functioning). The 65 and older group report a 1.54 point smaller decrease in ADLs relative to the 25–39 age group. While neither of these differences are statistically significant at conventional levels, the reduction in ADLs from the CAPABLE intervention appears to be shrinking with age.

Members who live alone see a 1.06 larger reduction in ADLs compared to members who did not live alone. Members living in a Denver Metro area county report smaller reductions in ADLs compared to members living in non-Denver Metro area counties. Again, neither of these differences are statistically significant, though living alone is near significance at the 10% level ($p = 0.108$).

Putting this all together, the regression model predicts that members ages 25–39, living alone, and not living in a Denver Metro area county would experience the largest decreases in aggregate ADL score– a 5.41 point decrease. This is 1.4 times larger than the average change reported in Table 2.[x]

[x] Conversely, members aged 65 and older, not living alone, and residing in the Denver Metro area are predicted to experience the smallest decrease (-2.54 points).

Table 3. Regression Model Estimates of the Change in Outcome on Age Group, Living Alone Status, and Denver Metro Residence (n = 272)

Group	Change in ADLs	Change in IADLs
Reference group.	-4.35** (1.86)	-8.83*** (2.29)
Ages 40–64.	0.86 (1.90)	3.82* (2.25)
Ages 65+.	1.54 (1.87)	4.75** (2.21)
Lives alone.	-1.06 (0.66)	-0.07 (0.82)
Denver Metro.	0.27 (0.54)	1.63** (0.64)

Notes: *** indicates the difference is statistically different at the 1% level ($p < 0.01$). ** indicates significance at the 5% level ($p < 0.05$). * indicates significance at the 10% level ($p < 0.1$). Negative coefficients indicate decreases in ADL or IADLs, while positive coefficients indicate increases. Standard errors are heteroskedasticity-robust.

Column 2 repeats column 1 with aggregate IADL as the outcome variable. The reference group displays the average decrease in aggregate IADLs for the 25-39 age group who do not live alone or in a Denver Metro area county. The positive estimates for the 40-64 and 65 or older age groups indicate smaller IADL drops compared to the 25-39 age group, a similar pattern to what we saw with ADLs. The average differences are statistically significant. The coefficient on living alone is small in magnitude and not statistically significant, while residing in a Denver Metro area county reduces the IADL decrease by a statistically significant 1.63 points.

Putting this all together, the regression model predicts that members ages 25-39, living alone, and not living in a Denver Metro area county would experience the largest decrease in aggregate IADL score– a 8.9 point decrease. This is 2.3 times larger than the average difference reported in Table 2.[xi] The differences across the two columns speak to the different types of function areas captured by the IADL questions and provide preliminary evidence that the intervention may have disparate impacts by age.

[xi] Conversely, members aged 65 and older, not living alone, and residing in the Denver metro area are predicted to experience the smallest decrease (-2.45 points).

Disaggregating ADL and IADL Scores

Aggregate ADL and IADL scores are each based on eight function areas. These function areas are distinct enough that the CAPABLE intervention is not expected to impact all areas equally. Decomposing the average decrease reported in Table 2, the largest decreases occurred in the areas of bathing or showering, getting in and out of bed or chairs, and walking across a small room (using the toilet was a close fourth). The improvements in these three areas accounted for 49.7% of the total decrease in average total ADLs. For IADLs, decreases in difficulties associated with traveling independently, preparing meals, and performing light housework account for 54.5% of the total decrease in IADLs. Unsurprisingly, most of these function areas are ones where we expect home repairs or modifications and physical therapy to have a significant impact.

Cost Analysis

The average total cost per member of delivering CAPABLE was $2,976. For over 85% of members, the total cost was less than $3,500.

The average total cost per member in the Colorado Pilot was lower than previous studies after considering rising costs due to inflation.

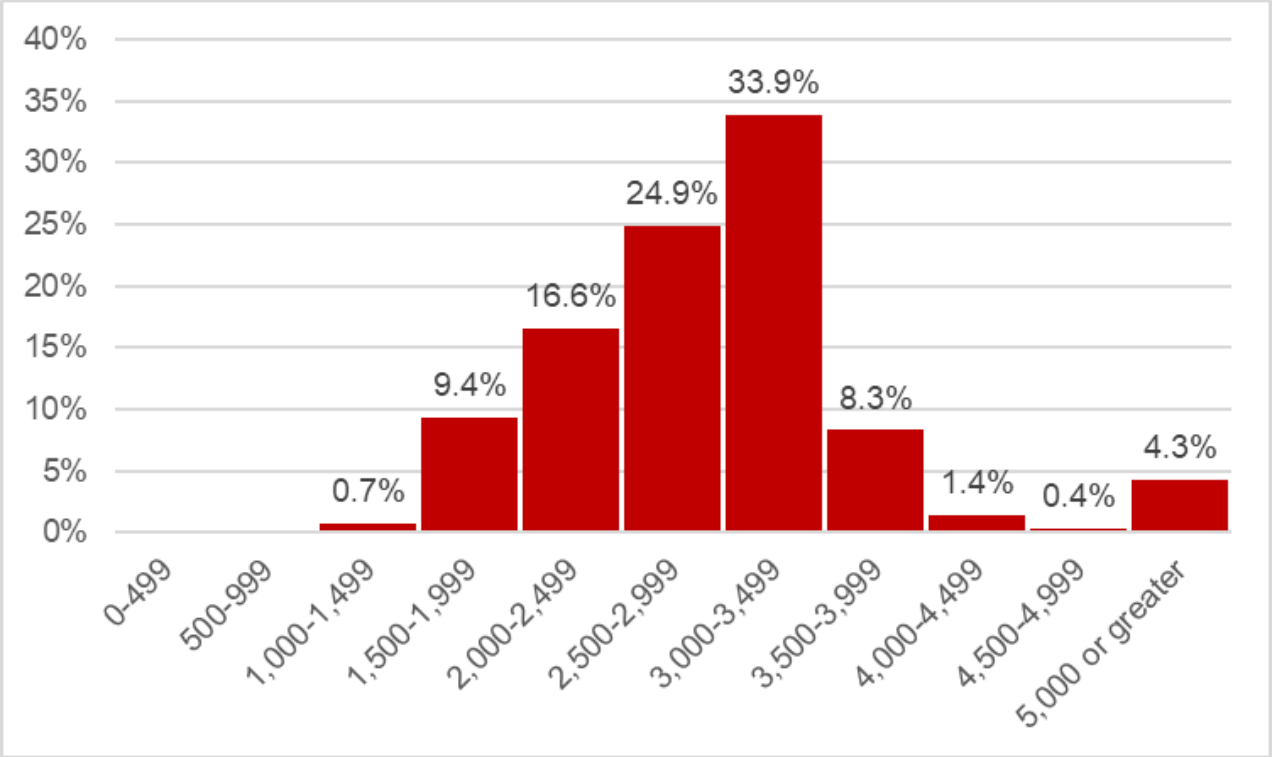
The cost analysis in the current evaluation report is intended to lay the foundation for a detailed future cost savings analysis as outlined in the *Comprehensive* evaluation plan by Johns Hopkins. The Colorado pilot included measures of cost per member, itemized into two bins. The first bin tracks supply and materials costs, including OT, RN, and handworker purchases. This bin is most comparable across the two providers. The second bin tracks labor costs. BRI's labor costs include handy work, OT, and RN labor. CVNA's labor costs cover total direct and indirect costs. Provider costs alone cannot provide a full accounting of the costs of implementing CAPABLE, but it informs our understanding of the additional cost per member (the marginal cost) after one-time administrative setup and infrastructure costs are accounted for (the fixed and sunk costs).

On the other side of the ledger, this report does not attempt to account for the cost savings accrued as a consequence of completing the CAPABLE intervention. For example, over a two-year period, Ruiz et al. (2017)[21] estimate a statistically significant reduction of $2,765 per member per quarter in Medicare expenditures. Compared to a one-time cost of $2,882 per member, the savings are $19,238 over two years per member. Similarly, Szanton et al. (2017)[22] found that the CAPABLE treatment group had lower probabilities of using inpatient, outpatient, and specialist services, and a higher probability if using home health services, leading to $867 per month in cost-savings relative to a control group.

A cost-benefit analysis should compare total costs and savings, and also cost and savings *per member*. Once administrative costs are sunk, the financial viability of standing up CAPABLE across Colorado depends on the additional cost savings of each new member. Subsequent analyses should aim to account for cost-savings over a member's lifetime using net present value analysis.

Figure 2 displays the distribution of total cost (purchases plus labor costs) for members who completed 10 visits or more. Overall, the average total cost per member was $2,976. For three-quarters of members, total cost was between $2,000 and $3,500, and less than $3,500 was spent for over 85% of members.

Figure 2. Distribution of Total Cost



Nominally, the average total cost in the Colorado CAPABLE pilot is in line with estimates from previous studies. Szanton et al. (2019)[23] report that the cost of delivering services was $2,825 per person, including visits, supplies, team coordination, mileage, and home improvement part and labor. Szanton et al. (2021)[24] report the cost of delivering CAPABLE to be approximately $3,000 per person, including visits, supplies, team coordination, mileage, parts, and labor. Though relatively recent, these earlier cost estimates would be larger in real (current) dollars. Therefore, in real terms, the Colorado CAPABLE average cost is lower than previous estimates.

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Process Evaluation

Qualitative Analysis

Key Findings

- ***Process Evaluation***
- ***Lessons Learned from the Pilot***

Process Evaluation: Deeper Exploration of the CAPABLE Model

> **CAPABLE's synergistic, team-based approach means that its value is more than the sum of its parts.**
>
> **The OT, RN, and handyworker roles within the CAPABLE context differ significantly from these traditional roles but draw upon the same skill sets.**
>
> **There are additional benefits to CAPABLE beyond the core measurable outcomes.**

In addition to the quantitative analysis of participant outcomes, implementation of the Colorado CAPABLE pilot provided a valuable opportunity to 1) better understand the specific components and benefits of the model in order to distinguish it from other services; 2) capture implementation successes and challenges to inform the feasibility of future expansion in the state; and 3) further explore how the CAPABLE model could serve as an enhancement or alternative to the current Home Modification benefit in Colorado.

Better understanding the nuances of the CAPABLE model, and how they differentiate the intervention from existing Medicaid services, is critical to informing recommendations for making CAPABLE a long-term benefit in Colorado.

CAPABLE's synergistic design means that its value is more than the sum of its parts.

- CAPABLE's team-based approach emphasizes ongoing communication and coordination across disciplines.
- The program's design leads to more holistic and sustainable solutions for the member, while maximizing the impact of a relatively small amount of home rehabilitation funding.
- Synergy among CAPABLE team members is intentionally created and maintained.

The CAPABLE program is delivered by a multidisciplinary team, and while each program component on its own may be duplicative of individual services (e.g., occupational therapy, skilled nursing, and home modification), it is the holistic approach and synergy among team members that makes CAPALBE different from the sum of its parts. And because it is a participant-directed intervention,

the member also becomes an important part of the team, providing direction and prompting adaptations as necessary.

Indeed, both CVNA and BRI continuously emphasized the importance and benefit of the CAPABLE team-based approach. It was stressed that CAPABLE is "not separate entities piecemealed together, but a true package and a set of activities that build on each other." The service providers noted that this leads to more effective and efficient use of resources, with all parties involved in close communication with each other and the member having a real voice.

In practice, this synergy is intentionally created by having regular team meetings and ongoing communication where individual cases can be discussed together. Service providers reported that one of the most beneficial aspects of the CAPABLE program is the ease with which they can work together. Providers can leave each other notes through secure platforms, or call each other directly to iron out details, address challenges, and coordinate efforts. This saves providers time and energy, and results in better care for the member. As every case is different, program staff mentioned that it is invaluable to hear other perspectives, engage in joint problem-solving, and course-correct if needed.

> *"Since every case is different, it is invaluable to hear other perspectives, engage in joint problem-solving, and course-correct as needed."*
>
> **- Key Concept from Interviews**

In particular, the OT and handyworker need to communicate regularly and work as partners. After initial assessment and goal-setting, the OT creates a detailed work order that is prioritized based on the member's goals. Through the work order process and ongoing communication, the handyworker can understand the "why" behind the requests and help determine the best way to meet the member's needs from a rehab perspective. BRI gave examples of the OT using FaceTime to show the handyworker around a member's home and talk through options together on the spot. This partnership allows CAPABLE to maximize the impact of a relatively small amount of rehab funding.

The OT, RN, and handyworker roles within the CAPABLE context differ significantly from these traditional roles but draw upon the same skill sets.

- As an evidence-based intervention, the OT and RN are trained specifically to deliver the CAPABLE model.
- The roles in CAPABLE are multifaceted, with the goal of empowering people to build sustainable skills to care and advocate for themselves.

The CAPABLE program is a non-medical, consultative, behavior modification program that "teaches participants how to address future challenges." This subtle, yet significant shift in approach is critical to understanding the roles of CAPABLE team members. As an evidence-based intervention, the OT and RN are trained specifically to deliver the model through standardized training and

implementation guides developed by Johns Hopkins. Both service providers stressed that CAPABLE is not the same as providing OT, RN, and handiwork services in the traditional sense.

While the work of the RN in CAPABLE is not "hands on," such as taking vitals or setting up medications, the RN is still utilizing clinical reasoning, skills, and judgment. It is not a different skill set, but rather a different approach in which the same skills are being applied in a non-traditional way. In addition, because CAPABLE is participant-led, the RN is not directing how to address a medical need, but rather listening to the participant's self-identified goals and helping to build self-sufficiency and independence in those areas. In these ways, one CAPABLE RN noted that the role is "radically different" than a home health nurse.

> *"It's not a different skill set, but rather the same skills being applied in a non-traditional way."*
>
> **- Key Concept from Interviews**

Both RNs and OTs described their roles as multifaceted, including serving as a creative problem-solver, cheerleader, and, at times, case manager. They see themselves as empowering people to build sustainable skills to care for and advocate for themselves. As noted above, there is also added benefit to the three roles coming together as a team. For example, both the RN and OT may be helping a member work on fall prevention, but they are working with the member from different perspectives. As one provider explained it, the OT is going to look from the outside in, and the RN is going to look from the inside out. The OT will look at potential external hazards such as rugs, cords, and oxygen tubing, while the RN will look at potential underlying issues such as incontinence or pain. Bringing both perspectives together is critical to finding holistic and sustainable solutions for the member.

In terms of the handyworker, the CAPABLE role is more that of an active partner and a key participant in identifying creative solutions. One handyworker mentioned that the approach feels much more "entrepreneurial" compared to traditional home modification services, allowing the team to collectively find innovative ways to adapt the home to the member versus the member trying to adapt to the environment.

There are additional benefits to CAPABLE beyond the core measurable outcomes.

- CAPABLE's multi-visit format allows the team to maximize impact and quickly adapt to changing circumstances.
- Timely follow-through on home modifications means members' needs are addressed sooner.
- CAPABLE has come to represent a more organized way for people to connect to other services.

In addition to the standard outcome measures described in the quantitative analysis section(e.g., decreases in ADL and IADL scores), service providers noted that they see additional benefits for members participating in CAPABLE:

- **Adaptability and Sustainability.** CAPABLE's multi-visit format allows providers to modify how services are being employed and adapt quickly to changing circumstances (which can be common in the target population). Service providers are able to follow up and track important health outcomes over time to help ensure the effectiveness of the intervention.

  One example given was of a member who was experiencing seizures and needed a wheelchair to allow them to go out in the community. Within 1 week of order, the OT was able to bring the wheelchair to the member, provide in-person training to the member and their caregiver, and follow up to ensure it was meeting their needs. It was noted that this type of follow-through would not have occurred under the current Home Modification benefit.

- **Responsiveness.** Compared to other services, home modification work is accomplished much quicker, addressing members' needs sooner. With CAPABLE, the OT can show medical necessity and follow-through on implementing recommendations within a few months' time span. This reflects national findings that CAPABLE participants identify follow-through in a timely manner as an important positive outcome. It is also noteworthy when compared to the average completion time under the Home Modification benefit, as described below.

- **Trusted Referral Source.** Although not a formal part of the program, CAPABLE has come to represent a more organized way for people to connect to other services. Service providers are able to quickly identify the member's needs and priorities and to provide information and other resources to support the member. This is especially true if a need cannot be adequately addressed within the confines of CAPABLE, because of cost or scope. Some examples were seemingly simple, but meaningful for the member, such as referrals for regular pet care services or referrals to access funds to pay for a new car battery.

  For members with more complex needs, the hope is that CAPABLE is one piece of an array of interventions or treatment options. Often, however, there seemed to be a lack of service coordination (e.g., members not even knowing who their case manager is), and CAPABLE providers had to step in and help fill this gap. Because a relationship between the member and providers is built over time, in many cases, the providers become a trusted source of information and guidance.

Lessons Learned from the Pilot Implementation

While CAPABLE was generally adaptable to the expanded target population, there were unique challenges working with younger participants and Health First members.

The basis of CAPABLE is meeting people where they are, and results are dependent on a participant's motivation and readiness—therefore success may look different member to member.

Outreach and recruitment will take significant resources until CAPABLE is more widely known and reliable referral networks are established.

Several resources and lessons are available to support replication of the CAPABLE model across the state.

In addition to a deeper understanding of the CAPABLE model, qualitative analysis provided insights that complement some of the quantitative analysis findings above, as well as lessons for future program implementation and expansion.

Lesson Learned 1: Serving an Expanded Population

- While CAPABLE was generally adaptable to the expanded target population, there were unique challenges working with younger participants and Health First members.
- Lower levels of participant engagement and responsiveness during the pilot led to lower program completion rates compared to previous CAPABLE implementation.

As noted above, the Colorado CAPABLE pilot served a broader range of participants than previous studies, expanding the potential participant population in terms of age (from older adults only to all adults ages 18 and above) and geography (bringing services to new and rural areas in Colorado). At the same time, the pilot was restricted to participants who were current Health First Colorado members. Each of these categories offered insights and lessons learned. In general, because CAPABLE is participant-directed and individualized to the unique needs of each member, the program is designed to be adaptable. However, service providers reported that the pilot population was notably different from other CAPABLE participants, especially in the area of more complex mental health issues.

Age. Younger participants in the CAPABLE pilot usually had a disability or experienced a life-changing event. For example, participants included those with developmental delays, autism, spina bifida, and traumatic brain injury. CAPABLE goal areas for these participants often expanded into occupation, leisure, and social participation, with a focus more on community as opposed to home safety.

While younger participants differed from senior adults in terms of their roles, needs, and goals, service providers did not see this as a barrier to successful program implementation. They mentioned sticking with the core principles of CAPABLE and maintaining the same approach of meeting each participant where they are. As noted below, however, there were some challenges in recruiting and engaging younger participants in the program.

Geography. Similar to age, service providers did not see participants living in more rural areas as a barrier or challenge to successful program implementation. Rather, the priority was ensuring the safety of service providers. Some areas were so remote that there was not reliable GPS or cellular service. In some of these cases, team members were able to go out together, which helped with safety but made logistics more difficult and often required more resources. A question that the service providers had to consider was "How remote is too remote when serving CAPABLE participants?"

At the same time, it is important to recall that the regression model presented earlier predicts that younger participants living outside the Denver Metro area would experience the largest benefits from the CAPABLE program. Thus, finding ways to continue serving populations in rural and smaller urban areas in a way that ensures provider safety will be important.

Medicaid. The service providers reported that mental health and chronic illness were prominent factors in working with Medicaid members during the pilot. The frequent comorbidity of issues added significant complexity compared to working with the "typical" CAPABLE senior members experiencing limited mobility or generalized weakness. Some program staff expressed a desire for more education and training on working with participants that have conditions commonly seen in Medicaid members, especially related to mental health and substance use.

Anecdotally related to this complexity, service providers reported frustration with the overall level of engagement and responsiveness of participants during the pilot. There was a common trend of participants not returning calls or answering the door during scheduled appointments. This made it difficult for team members who spent time traveling for participant visits only to end in no-shows (for one RN, this happened three times in 1 week). An extreme example was an enrolled participant who engaged in two visits but was then put on a 72-hour mental health hold; the participant was not stable enough to continue with the program. CVNA reported a program completion rate (i.e., where the participant completed 10 or more sessions) during the pilot of 72.8%, compared to an average completion rate of 97% with previous CAPABLE members.

Providers shared that they heard similar challenges from other Medicaid service providers, in terms of motivating people to consistently engage and implement recommendations. The issue, therefore, is not specific to CAPABLE but likely the target population more generally and a host of complicating factors.

Lesson Learned 2: Readiness to Change and Program Fit

- The basis of CAPABLE is meeting people where they are, and there is resistance to modifying eligibility criteria to increase program fit.
- Member outcomes are dependent on their motivation and readiness to change, therefore success may look different in each situation.

The basis of CAPABLE is that members are voluntarily and actively participating in the program. Assessing a potential participant's "fit" for the program and their "readiness to change" were important themes throughout the pilot. Fit refers to the member's engagement and successful completion of the program, as opposed to meeting the eligibility criteria (this will be discussed later in the Outreach section).

There were several examples of situations where CAPABLE was not a great fit, such as members who were at risk of eviction, which impacted the stability of their living situation. Mobile homes made home renovation projects more challenging, especially around installing accessibility equipment. As noted above, the existence of mental health issues or other complicating factors could interfere with consistent engagement in the program. More difficult to pinpoint, but perhaps most significant when discussing fit, were those who resisted taking initiative. Anecdotally, providers reported needing to expend "exponentially more resources" in terms of time and energy for these cases compared to those where the member had a high level of motivation and willingness to engage.

At the same time, while these situations made CAPABLE implementation more challenging, service providers stressed that the program is rooted in meeting people where they are. They resisted ideas of implementing more rigorous screening criteria or readiness assessments, fearing that digging too deep into some of these areas could lead to more subjective disqualifications. And there is likely no accurate way to predict a person's future commitment, motivation, or life circumstances. In fact, when comparing CVNA completors with non-completors, the two groups were not statistically different in terms of their age distribution, sex, overall race/ethnicity distribution, location, educational attainment, living alone status, residence ownership, or residence type.

If the basis of CAPABLE is meeting people where they are, and success is dependent on the participant's motivation and readiness, then it makes sense that success may look different case to case. While success for one person may not show up as noteworthy in terms of change in ADL/IADL scores, participation in the program may nonetheless have made a significant impact. One provider shared how "a participant told me that the CAPABLE program changed their 'why.' It's amazing to see how small things can amount to true transformation in a person's life." Another participant shared via email how their "CAPABLE visits were refreshing, uplifting, informative, and very thoughtful in a world that isn't always such. I will never forget [the provider's] kindness."

Lesson Learned 3: Outreach and Recruitment

- Outreach and recruitment will take significant resources until CAPABLE is more widely known and reliable referral networks are established.
- Messaging may need to be adapted to highlight program benefits for younger members and consider their different mindsets and needs.
- HCPF and the CAPABLE National Center can help with centralized outreach and education efforts.

As described in the Methods section, CVNA and BRI had different initial recruitment strategies and networks to build upon. However, both providers experienced similar challenges and themes during the pilot.

CVNA had the most success going straight to potential participants rather than relying on traditional referral sources. Initially, efforts were focused on outreach and education with well-matched referral sources including health organizations and Area Agencies on Aging (AAAs). Most of these contacts expressed interest in and enthusiasm for CAPABLE, but few referrals resulted. About halfway through the pilot, CVNA had only received five referrals from Colorado Access (out of about 150 participants at the time).

Although BRI relied more heavily on their existing member lists, they had similar experiences with limited referrals from outside entities, despite initial interest. Both CVNA and BRI hypothesized that this was due to sheer overwhelm and large caseloads within these organizations. As a newer program in Colorado, CAPABLE is not top of mind and not yet a familiar tool in their toolboxes.

CVNA found greater success by switching tactics and actively recruiting individual participants by going out to locations with a suspected high density of Medicaid members, such as low-income housing. This often looked like outreaching to resident service coordinators, going into buildings and giving a program overview, following up one-on-one with potential participants, and conducting pre-screens (including verifying Medicaid status). CVNA did two or three of these visits per week (recall that 83% of CVNA's participants were in multi-living units). The resources needed for this level of outreach and follow up led to CVNA hiring a dedicated community liaison. BRI also relied heavily on their Senior Administrator for outreach, follow-up, and pre-screening.

For future implementation efforts, an important lesson learned is to not underestimate the amount of time and resources that will need to go towards outreach, education, and consistent follow up until CAPABLE is more widely known and a reliable referral network is established. In addition, honing messages around the benefits of the program based on the audience, articulating how it fits within an array of other services, and leaning into HCPF and the CAPABLE National Center for additional support will be important (these topics are discussed below).

Recruiting Younger Participants. Efforts to recruit younger participants allowed providers to learn more about perceptions of the program and experiment with different messaging about its benefits. In particular, there is a need to shift some of the "aging in place" messaging to consider

different mindsets and needs of younger individuals. As noted above, younger participants tend to focus more on goals related to work and social participation as opposed to home safety, and they are often thinking longer term compared to senior adults.

There was also a need for more refined messaging around the benefits of the program for younger participants. For example, CVNA mentioned that a common misperception was that if a person is able to work, they do not need CAPABLE. However, while some were able to work, they needed help with pain management or other areas of their lives, and CAPABLE ended up being a good fit. While only 4.3% of the analytic sample was younger (ages 25–39), the regression model provides preliminary evidence that the Colorado CAPABLE pilot had greater impacts for this population, particularly for reducing IADL scores. Therefore, it seems worthwhile to continue experimenting with tailored messaging and outreach efforts to younger members.

In terms of referral sources, BRI found that various home health care agencies work with people on the Developmental Disabilities and Supported Living Services waivers, who tended to be younger. BRI was able to enroll several participants on these two waivers and they were all in their 20s.

Eligibility. For both providers, the primary reason that potential participants were screened out was that they were not current Health First Colorado members. At one point during the pilot, CVNA had almost 40 potential participants on their waitlist for this reason. The next two most common screen-out reasons were related to cognition and interest in the program.

In terms of the non-Medicaid members, these included people who were living in low-income housing but said they were just over the threshold to qualify for Medicaid or had just lost it. In the future, working closely with resident coordinators could be helpful to verify eligibility and assist with Medicaid applications when appropriate. There were also those who were current Medicaid members but were hesitant to sign up for CAPABLE out of fear that they would be duplicating benefits, would “get in trouble,” or would lose benefits.

Centralized Education and Messaging. Both service providers shared that most agencies they spoke to had not heard of CAPABLE, and, therefore, they had to start from scratch in terms of laying the groundwork and providing all of the outreach and education in a given community. HCPF did do some initial outreach for the program, but they did not budget for this early on.

In addition to supporting general awareness of the CAPABLE program, there also appears to be a need for more nuanced messaging and education around how it can fit within the broader array of Medicaid services. For example, CVNA reported that some of the referrals they received seemed extreme, without much consideration as to the member’s fit with the program. If CAPABLE becomes a Medicaid-reimbursable service in Colorado, HCPF will want to put out clear messaging around the new opportunity for members (e.g., how it can complement other services and how it is different from other services in the array and the types of members who would benefit most). The CAPABLE National Center would be an important partner in establishing these messages and supporting broad education efforts.

Later in the pilot, HCPF launched some centralized outreach campaigns that offered clues as to how effective this strategy would be in the future. In November 2023, HCPF sent emails out to the relevant Regional Accountable Entities (RAEs), Aging and Disability Resource Centers (ADRCs), and AAAs. As a result, CVNA was outreached by coordinators in Larimer and Weld Counties and began receiving referrals. HCPF also sent out a targeted text message to Health First members regarding the CAPABLE program that garnered a massive response. CVNA received over 600 emails and phone messages and enrolled 24 participants as a result, and BRI had over 100 calls leading to about 10 participants and several more who were interested.

This response was somewhat unexpected and there were lessons learned should this strategy be employed again in the future:

- Plan how to sequence the text messages, perhaps by zip code, so that providers are not overwhelmed by responses all at once;
- List a separate phone number so that normal provider business is not disrupted; and
- Ensure that HCPF staff are prepared to handle inquiries that come in for other services/resources that are outside the scope of CAPABLE.

In the end, despite the challenges, persistence paid off, with both CVNA and BRI surpassing their enrollment goals for the pilot.

Lesson Learned 4: Site/Team Readiness

- Blended approaches for piecing together the full CAPABLE model appear to be promising and replicable across both urban and rural areas of the state.
- The CAPABLE National Center provides valuable resources for initial training and continuous learning and improvement.
- Role-specific training needs to be supplemented with opportunities to build team cohesion and facilitate regular communication.

Both CVNA and BRI were well positioned to stand up CAPABLE in new sites due to their existing expertise and networks, as well as the robust training and structure provided by the CAPABLE National Center. At the same time, there were lessons learned for other providers who may be interested in implementing CAPABLE:

- In standing up new program sites, both providers leaned into their existing expertise and partnerships. As a home health agency, CVNA had in-house expertise for the clinical aspects of the program, but needed to engage construction partners. BRI was the opposite—they had extensive experience in-home modifications but needed to contract out for the RN and OT roles. Both approaches seemed to work equally well, and there were no major challenges identified in outsourcing various pieces of the model. Blended approaches for piecing together the full CAPABLE model appear to be promising and replicable across both urban and more rural areas of the state.

- The CAPABLE National Center's online training modules are valuable, but role-specific (i.e., there are separate tracks for RNs and OTs, with some training being developed for handyworkers). To complement this training, it was important for both providers to foster relationship building and cohesion across the roles through early and ongoing team meetings. For example, prior to working with members, BRI walked through realistic case studies together as a team to better understand their various roles and begin building communication and trust.
- One area needing special attention early on was around the OT role. Most RNs and handyworkers needed additional information on the role and skills of an OT generally, and how they were expected to work with the OT in the context of CAPABLE. This need was so common that CVNA developed an FAQ document specifically on the topic.
- Staff from both providers enjoyed participating in the CAPABLE National Center's office hours. These sessions were also role-specific, but allowed staff to connect with other OTs, RNs, and handyworkers from sites across the country. Staff used these opportunities to stay current on best practices, learn more about various trends in their field, and hear a variety of other perspectives.

Colorado Evaluation & Action Lab
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Implications

Implications

CAPABLE as a Long-Term Benefit in Colorado

To make informed decisions around whether CAPABLE should be a long-term benefit in Colorado, there are several perspectives to consider:

- From a pure evaluation and program efficacy standpoint, the quantitative analysis provided in the first section of this report confirms that positive outcomes can be replicated across various sites in Colorado for a broad age range of Health First members.
- From a process and program implementation standpoint, the pilot afforded several lessons learned to build on existing strengths and address potential challenges for future expansion.
- From a Medicaid benefit standpoint, there are a few questions that remain:
    - Is there a clear value-add to implementing CAPABLE as an enhancement or alternative to current Medicaid services?
    - Can the case be made that CAPABLE is distinct from and not duplicative of the current Home Modification benefit under the 1915c Waiver, and OT and RN services reimbursable under state plan Medicaid?

The sections below explore these remaining questions.

Value-Add

At first glance, there are similarities between the current Home Modification benefit and CAPABLE. The ultimate goals are similar: The purpose of the Home Modification program is to implement specific modifications to a member's existing home setting based on their needs to ensure health, welfare and safety; to enable greater independence in the home; and/or to prevent institutionalization or support deinstitutionalization. Both approaches also have similar program components, although Table 4 below begins to make clear that almost every element of the Home Modification benefit is enhanced in CAPABLE.

Table 4. Comparison of the Home Modification Benefit Program with CAPABLE

Home Modification Benefit	CAPABLE
Case Manager conducts an initial assessment and identifies a home modification-related need.	Following a pre-screen, the initial OT visits focus on more thorough assessment and identifying participant-led goals.
The OT/physical therapist (PT) evaluation is a one-time, 45-minute visit; any licensed OT or PT can conduct the evaluation.	Members receive eight to 10 visits over the course of 4 to 6 months. OTs and RNs are specifically trained to deliver the CAPABLE program in partnership with the handy worker.
There is no RN component.	An RN is an integral part of the CAPABLE team to identify holistic and sustainable solutions.
The OT/PT completes the In-Home Modification Evaluation that is put out to contractors for bid.	There is ongoing communication between the handyworker and the OT to find the most efficient and effective way to meet the member's goals. There is no bidding process, so home modifications are completed in a timely manner.
Contractor completes a bid based on the evaluation.	After the work order is completed, there are follow-up visits to ensure that home modification solutions are meeting the member's goals and that there is sufficient training to integrate the modification into the member's life.
Number of members served, under $2500: 161 • Average cost per member: $754.51. • Average length of time: Not available. Number of members served, over $2500: 1,320 • Average cost per member: $12,335. • Average length of time: 69 Days.	CAPABLE Pilot Key Statistics: • Average total cost per member: $2,976. • Average length of time to complete 10 sessions: About 4.4 months. • Number of members served from January 2023 to August 2024 (receiving the full dosage): 277.

Together, these enhanced CAPABLE components and processes appear to address the specific gaps and inefficiencies found with the current Home Modification benefit. HCPF recently contracted with Vital Research to evaluate the Home Modification process. The following table presents some of Vital Research's key findings/recommendations, and how the CAPABLE model directly addresses many of the identified shortcomings:

Table 5. Advantages of CAPABLE

Home Modification Benefit	CAPABLE
The assigned Medicaid Case Manager serves as the primary liaison between Medicaid members, contractors, OT/PT evaluators, and HCPF/Colorado Department of Local Affairs (DOLA). Often, Case Managers are overburdened with their caseload and do not have the appropriate training, resources, or support to be an effective manager and liaison. Additionally, OT/PTs are not specifically trained to understand the waiver Home Modification benefit/limitations so the limited evaluation they complete may reflect what a member or family members requests.	The CAPABLE team is interdisciplinary, combining OT, RN, and home modification services. Teams meet regularly and communicate often to coordinate on individual cases and solutions. The CAPABLE National Center provides a host of standardized training and resources, as well as regular office hours and technical assistance to sites.
Communication between stakeholders is inefficient. Several stakeholders noted how different communication platforms are often used, making it extremely difficult to bridge communication gaps and efficiently organize chains of communication by home modification project. This slows down the process and leads to unclear expectations among all parties as to what the home modification will cover, timelines, etc.	Like above, CAPABLE teams communicate regularly via secure email platforms, phone, and team meetings. Goals are participant-led and form the basis for the work order, which is discussed and coordinated between the OT and handyworker. As one handyworker described, “The ability to communicate is everything. Communication with the OT drives the rehab.” Because there is ongoing communication among team members and no wait time for multiple bids from contractors, home modifications come to fruition much more quickly and are completed over the course of a few months rather than years.
There are not enough OT/PT evaluators and contractors, especially in rural areas. Many stakeholders detailed how the home modification process is often significantly delayed due to a lack of available OT/PT evaluators and contractors. Many stakeholders mentioned being unable to find an eligible evaluator or contractor for the home modification; several case	Blended approaches for piecing together the full CAPABLE team appear to be promising and replicable across both urban and more rural areas of the state. Home health agencies contracting out for home modification services, and vice versa, seemed to work equally well and there were no major challenges in outsourcing various pieces of the model.

Home Modification Benefit	CAPABLE
managers and contractors described waiting months or years for an eligible contractor to construct the home modification. In many cases, this makes finding two to three contractor bids impossible.	
Home modifications need to be evaluated, and contractors need to be held accountable for their work. Several members discussed receiving poor quality home modifications and were unable to adequately utilize them upon completion of the project. Despite this, many members indicated that the modifications have not been repaired or replaced, even if they spoke with their case manager, and even after years of waiting for a corrected home modification. For inspections of modifications and repair work to occur, DOLA needs to be made aware of an issue.	CAPABLE's multi-visit format allows for follow-through to ensure that modifications are meeting the participant's needs and goals, that there is sufficient orientation/training with the participant, and there are opportunities to course-correct as needed. In addition, with a three-member team, there are built-in checks and balances regarding quality and follow-through.
Stakeholders may lack the necessary knowledge or training. For example, case managers expressed that they have limited construction knowledge, so they cannot properly assess cost effectiveness and appropriateness of contractor bids. Several stakeholders also felt that OT/PT professionals did not have needed training on home modifications, which resulted in unclear and ineligible evaluation reports. During the pilot, OTs/PTs acknowledged that with the Home Modification process, they often do not know if their recommendations are feasible from the rehab perspective. Contractors also noted that they receive an assessment/report from an OT through the bidding system. They have to interpret someone else's notes without understanding the "why,"	The OT, RN, and handyworker all have their own expertise and skill sets, but they work as a team to find holistic and sustainable solutions for the participant. This is the key to maximizing impact and efficiency with a small budget.

Home Modification Benefit	CAPABLE
and the whole point can be lost in translation. Example given during the pilot: "Under the home modification process, an OT wrote a work order to move a member's laundry from the basement to the main floor. From a rehab perspective, this is a huge undertaking that affects the entire house. After many months of back and forth, it was finally revealed that the core issue was that the member could not get to the bathroom in time. The ultimate solution was to add a stair glide and toilet to the existing layout. The handyworker noted that 'If we could have communicated like we do with CAPABLE, this would have been solved with a couple simple conversations.'"	
Feedback on the home modifications	In addition to capturing standardized pre and post measures for CAPABLE participants to analyze program efficacy, both service providers utilized Participant Experience Post-CAPABLE Surveys. While valuable, more could be done to create a common survey and process across providers in order to more fully assess member satisfaction and system performance.

CAPABLE as a Distinct Service

CAPABLE is evidence-based and shown to produce positive outcomes for Health First members, its implementation across the state is feasible, and it promotes greater efficiency and accountability than the current Home Modification benefit.

Recommendation: Create a two-tiered Home Modification benefit, with the CAPABLE model as Tier One.

Next Steps:

- **Develop clear and consistent messaging around CAPABLE as an evidence-based, packaged service that is distinct from the**

fragmented use of traditional home-based OT and RN services available under state plan Medicaid.

- **Consider additional targeted information gathering or evaluation opportunities that would strengthen the case to CMS.**

For all of the reasons discussed so far, it is clear that CAPABLE is a viable candidate for Colorado's array of Medicaid services/benefits. It is evidence-based and shown to produce positive outcomes for Health First members, its implementation across the state is feasible, and it promotes greater efficiency and accountability than the current Home Modification benefit. But despite its potential value, HCPF must still be able to make the case that it is clearly distinct from and not duplicative of current services—namely, the Home Modification benefit under the 1915c Waiver, and OT and RN services reimbursable under state plan Medicaid.

Based on focus groups and ongoing discussion with HCPF and pilot providers, the most promising paths forward are presented below. While these pathways are being explored, implementing some of the lower cost/lower administrative burden recommendations from Vital Research will help improve the current Home Modification benefit.

Recommendation: Create a Two-Tiered Home Modification Benefit

Tier One

- Up to $3,500 (this would capture over 85% of pilot participants).
- Subcontract with entities throughout the state to implement the CAPABLE model.
- Educate case managers on the CAPABLE eligibility criteria to ensure "best fit" as much as possible; identify triggers that would lead to Tier Two consideration.

Tier Two

- Over $3,500.
- For members with more intense/complex needs and larger home modification projects.
- Target a smaller group of members; HCPF focuses on tightening up the current Home Modification process based on recommendations from Vital Research.

Recommended Next Steps

1. Develop clear and consistent messaging around CAPABLE as an evidence-based, packaged service that is distinct from the fragmented use of traditional home-based OT and RN services available under state plan Medicaid.
    - Coordinate with the CAPABLE National Center and other interested states to develop consistent and compelling messages around CAPABLE. Develop a coordinated strategy for approaching CMS.

- Utilize findings from this pilot evaluation, highlighting the model's synergistic design, program-specific roles and training, and added value to members.
- Tie positive outcomes from the pilot, as well as multiple national studies, directly to the packaged CAPABLE model of service delivery (in other words, positive outcomes are only attributable to the full packaged service, and individual pieces of the model cannot be separated out without compromising these outcomes).
- Incorporate some of the underlying approaches and values in CAPABLE that are central to HCPF's vision of serving Colorado's Medicaid members (e.g., member-directed, continuity of care, strength based, wraparound, holistic/comprehensive, evidence based, and cost effectiveness).

2. Consider additional targeted information gathering or evaluation opportunities that would strengthen the case to CMS.
   - Build upon this pilot evaluation with additional analysis of cost savings, following the suggested Comprehensive evaluation framework by Johns Hopkins. Future evaluation efforts could include measures such as 6- or 12-month pre-post hospitalization, emergency room use, home health care use, and total cost of care (e.g., Medicaid claims).
   - Identify and document similar packaged services that are already approved Medicaid benefits in Colorado. For example, look at home visiting programs that may have individual components that seemingly duplicate other Medicaid services.
   - Compile case studies of times when the Home Modification process did not produce positive outcomes. Backward map how the cases could have looked differently had CAPABLE been implemented.

Endnotes

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