



# Accountable Health Communities (AHC) Model Evaluation

## Second Evaluation Report

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# **ACCOUNTABLE HEALTH COMMUNITIES (AHC) MODEL EVALUATION SECOND EVALUATION REPORT**

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# List of Acronyms

ACO	Accountable Care Organization
ACSC	ambulatory care sensitive condition
ADI	Area Deprivation Index
AHC	Accountable Health Communities
AOD	alcohol or other drug
CARES	Coronavirus Aid, Relief, and Economic Security
CCW	Chronic Conditions Warehouse
CDS	clinical delivery site
CQI	continuous quality improvement
CMS	Centers for Medicare & Medicaid Services
CMMI	Center for Medicare & Medicaid Innovation
CPT	Current Procedural Terminology
CRI	community resource inventory
CRS	community referral summary
CSP	community service provider
D-in-D	difference-in-differences
ED	emergency department
EHR	electronic health record
FFS	fee-for-service
FIPS	Federal Information Processing Series
GTA	Geographic Target Area
HAC	hospital acquired conditions
HCC	hierarchical condition category
HIE	health information exchange
HRES	health resource equity statement
HRSN	health-related social need
ICD	International Statistical Classification of Diseases and Related Health Problems
IP	inpatient
IPV	intimate partner violence

LDA	Latent Dirichlet Allocation
MH	mental health
NCCS	National Center for Charitable Statistics
PAC	post-acute care
PBPM	per beneficiary per month
PC	public charities
PCF	Primary Care First
PCP	primary care provider
PDSA	Plan-Do-Study-Act
PVI	Pandemic Vulnerability Index
QI	quality improvement
SDI	Social Deprivation Index
SDOH	social determinants of health
SIREN	Social Interventions Research Network
TA	technical assistance
TAF	Transformed Medicaid Statistical Information System (T-MSIS) Analytic File
VBP	value-based purchasing
VM	value modifier



# Executive Summary

## Introduction

In 2017, the Center for Medicare & Medicaid Innovation (Innovation Center) launched the Accountable Health Communities (AHC) Model to test whether connecting Medicare and Medicaid beneficiaries to community resources and addressing health-related social needs (HRSNs)—adverse social conditions that affect health and health care expenditures—can improve health outcomes and reduce costs. The Innovation Center funded entities known as bridge organizations to implement the AHC Model in communities across the country in collaboration with clinical delivery sites (CDSs), community service providers (CSPs), state Medicaid agencies, and other community stakeholders. The Innovation Center originally funded 32 bridge organizations, but four voluntarily terminated their participation early on. The AHC Model’s initial 5-year period of performance concluded in April 2022, but 18 bridge organizations received no-cost extensions to continue model activities for an additional 3 to 12 months.

Under the model, community-dwelling Medicare and Medicaid beneficiaries who live in a participating bridge organization’s Geographic Target Area (GTA) were screened for five core needs: housing instability, food insecurity, problems with transportation, difficulties with utilities, and interpersonal violence. Beneficiaries were eligible for community service navigation if they had one or more of the five core HRSNs and self-reported having two or more emergency department (ED) visits in the 12 months before screening. These eligibility criteria were intended to identify high-risk beneficiaries who could benefit from the AHC Model. Medicare and Medicaid beneficiaries in both fee-for-service (FFS) and managed care were eligible for the model.

## Key Takeaways

- AHC bridge organizations screened more than 1 million Medicare and Medicaid beneficiaries through December 2021. Nearly 40% of screened beneficiaries had at least one HRSN; about half of beneficiaries with HRSNs (almost 20% of those screened) also had two or more ED visits during the year before screening and were eligible for navigation.
- Among those eligible for navigation, many were low-income individuals enrolled in Medicaid only or dually enrolled in Medicare and Medicaid (87%) and from racial and ethnic minority groups—38% in Medicare and 60% in Medicaid.
- More than three-quarters of eligible beneficiaries agreed to navigation. Acceptance rates were similar regardless of beneficiary payer type and sociodemographic characteristics.
- Almost two-thirds of beneficiaries did not have any resolved HRSNs after completing navigation, and navigation did not increase beneficiaries’ connection to community services or HRSN resolution. Gaps between community resources and beneficiary needs may have reduced navigation impacts.
- Roughly half of surveyed beneficiaries who used community services found the services “very” or “quite a bit” effective. Beneficiaries experienced four key challenges to using community services: lack of transportation, ineligibility for services, long wait-lists, and lack of community resources.
- The AHC Model reduced ED visits for both Medicaid and FFS Medicare beneficiaries in the Assistance Track. Although the model did not increase HRSN resolution, qualitative

(continued)

## Key Takeaways (continued)

Interviews suggested navigators may be helping beneficiaries access appropriate, non-ED care.

- COVID-19 created substantial disruptions for screening and navigation, but bridge organizations were resilient in adapting to the new challenges.
- Alignment activities linked the “two worlds” of clinical care and community services. By convening at advisory board meetings, collaborating on strategic plans and mission and vision statements, and observing CSP operations firsthand, clinical and CSP groups established mutual understanding.
- Advisory boards with beneficiary members benefitted from their participation. However, it was difficult to recruit and retain beneficiary members.

The model tested whether two separate interventions (Assistance versus Alignment) could impact health care utilization and costs by helping Medicare and Medicaid beneficiaries with HRSNs resolve those needs. Each intervention was implemented within two separate tracks, and each AHC Model bridge organization participated in one of two tracks (**Exhibit ES-1**). The Assistance Track tested whether navigation assistance connecting navigation-eligible beneficiaries with community services results in increased HRSN resolution and reduced health care expenditures and unnecessary utilization. The Alignment Track tested whether navigation assistance, combined with engaging key stakeholders in community-level continuous quality improvement (CQI) to align community service capacity with the community’s service needs, results in greater increases in HRSN resolution and greater reductions in health expenditures and utilization than navigation assistance alone. Both tracks provided HRSN screening, community referrals, and navigation to community services; the Alignment Track, however, also engaged in service capacity building activities (e.g., CQI informed gap analysis, advisory boards).

### Exhibit ES-1. Elements of the AHC Model by Track

Elements of the Model	 Assistance Track	 Alignment Track
<b>Universal screening</b> of all community-dwelling beneficiaries who seek care from participating clinical delivery site or other designated sites.	✓	✓
<b>Standardized screening tool</b> for HRSNs that CMS developed to determine eligibility. May also screen for supplemental HRSNs.	✓	✓
<b>Community referral summary</b> , a list of resources tailored to the beneficiary’s unmet HRSNs. Populated from the <b>Community Resource Inventory</b> , a database of community service providers updated at least every 6 months.	✓	✓
<b>Randomization</b> of navigation-eligible beneficiaries into an intervention group or control group.	✓	.
<b>Navigation</b> involving in-depth assessment, planning, referral to community services, and follow-up until needs are resolved or determined to be unresolvable.	✓	✓
<b>Community-level continuous quality improvement</b> that includes an <b>advisory board</b> to ensure resources are available to address HRSNs, data sharing to inform a <b>gap analysis</b> , and a <b>quality improvement plan</b> .	.	✓

Definitions: CMS = Centers for Medicare & Medicaid Services; HRSN = health-related social need.

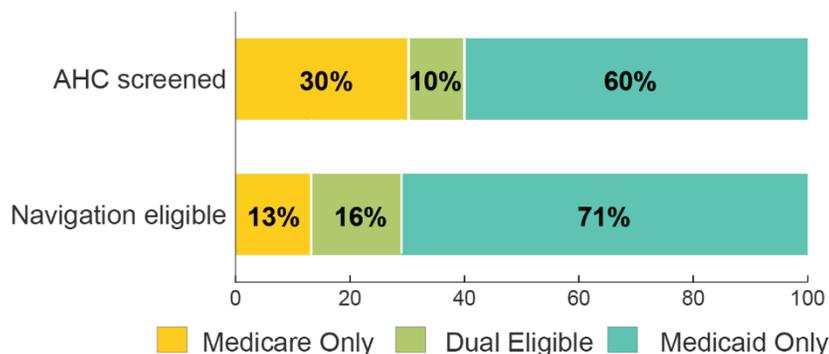
Evaluation findings from the first 3.5 years of the AHC Model show that participants were able to continue screening, referring, and navigating eligible Medicare and Medicaid beneficiaries despite the significant challenges and disruptions created by the COVID-19 pandemic. Although a definitive assessment of the model's impacts on outcomes is not complete, findings to date indicate the AHC Model did not markedly increase beneficiaries' connections to community services or HRSN resolution, suggesting that navigation alone may not be sufficient to address HRSNs. This may be due, in part, to gaps between community resource availability and beneficiary needs. FFS Medicare beneficiaries receiving navigation services in the first 3 years of the model and Medicaid beneficiaries receiving navigation services in the first 2 years of the model did have fewer ED visits, however, suggesting that navigators may help patients use the health care system more effectively. Despite difficulties connecting beneficiaries to community services and resolving HRSNs, Alignment Track bridge organizations and their partners viewed alignment activities as an important driver of systemic changes to effectively implement navigation assistance and address HRSNs within their communities. An overview of findings from the Second Evaluation Report follows.

## Overview of Findings

### Over 1 Million Medicare and Medicaid Beneficiaries Were Screened for HRSNs

- Through December 2021, bridge organizations screened 1,020,864 unique Medicare and Medicaid beneficiaries.
- More than one-third (37%) of screened beneficiaries had one or more of the five core HRSNs. About half of beneficiaries with HRSNs (18% of screened beneficiaries) reported having two or more ED visits in the 12 months before screening and were thus eligible for navigation.
- Food insecurity (63%) and housing instability (47%) were the most common needs reported by screened beneficiaries with at least one HRSN. Transportation problems (37%), utility difficulties (30%), and interpersonal violence (4%) were reported less frequently.
- Over half (57%) of screened beneficiaries who were navigation eligible reported more than one core need.
- Low-income individuals were more likely to meet navigation eligibility requirements. The majority of these individuals (87%) were enrolled in Medicaid only or dually enrolled in Medicare and Medicaid (**Exhibit ES-2**). Beneficiaries from racial and ethnic minority groups comprised between 38% (Medicare) and 60% (Medicaid) of the navigation-eligible population.

## Exhibit ES-2. Payer Type Among AHC-Screened and Navigation-Eligible Beneficiaries



Source: AHC screening and navigation data, May 2018–December 2021; Medicare and Medicaid enrollment files.

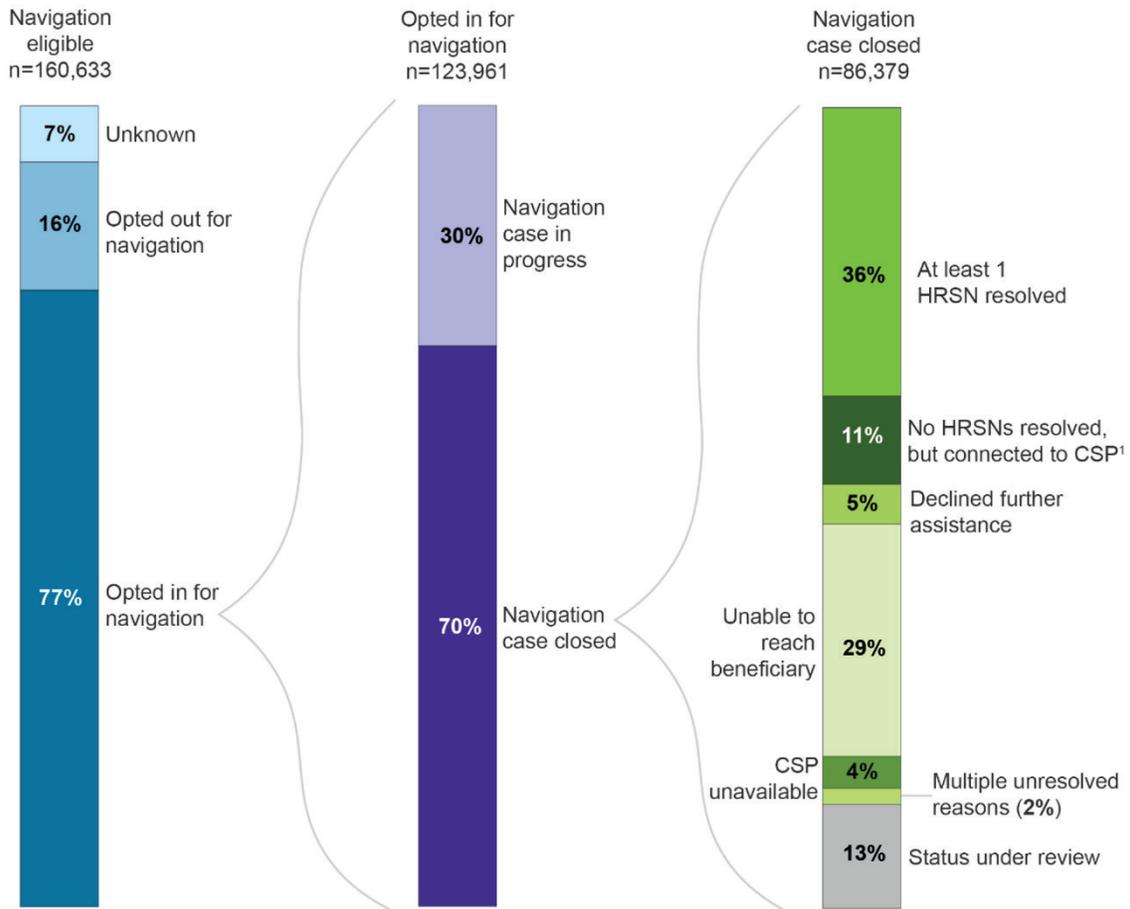
Definitions: AHC = Accountable Health Communities.

Other Notes: Navigation-eligible beneficiaries are community-dwelling beneficiaries with one or more core HRSNs and two or more ED visits in the 12 months before screening. Payer type was missing for <1% of AHC-screened and navigation-eligible beneficiaries.

## More Than Three-Quarters of Eligible Beneficiaries Agreed to Navigation

- Acceptance of navigation remained high. As shown in **Exhibit ES-3**, 77% of eligible beneficiaries opted into navigation, slightly higher than the 74% acceptance rate reported in the [First Evaluation Report](#).
- Navigation acceptance did not differ by beneficiary payer type or sociodemographic characteristics such as race and ethnicity, age, or education.

### Exhibit ES-3. Navigation-Eligible Beneficiaries' Navigation Opt-in Status, Case Status, and HRSN Resolution



<sup>1</sup> Connected to CSP for at least 1 HRSN.

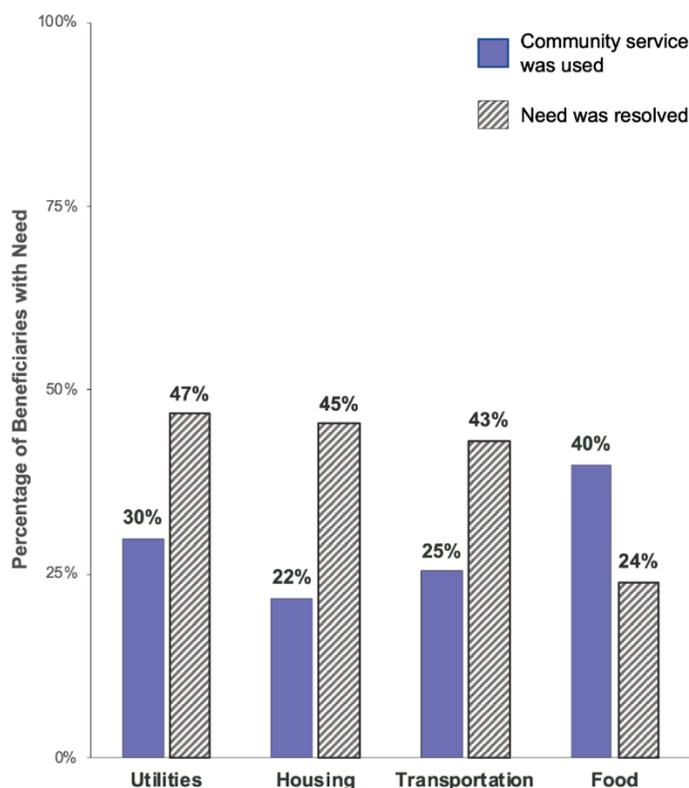
Source: AHC screening and navigation data, May 2018–December 2021.

Definitions: CSP = community service provider; HRSN = health-related social need.

## Navigation Did Not Increase Beneficiaries' Connection to Community Services or HRSN Resolution

- Navigation data show that among beneficiaries whose navigation case was closed (those completing 12 months of navigation), over a third had at least one HRSN resolved and a quarter had all needs resolved. However, more than half had neither connected to a CSP nor had any of their HRSNs resolved (**Exhibit ES-3**). Among those with more than one HRSN, 38% had at least one HRSN resolved and 20% had all their needs resolved. An additional 11% of beneficiaries had been connected with a CSP for at least one HRSN but had not had any of their HRSNs resolved.
- About half of navigation-eligible beneficiaries who responded to a survey roughly 6 months after screening reported using any community services following screening. The likelihood of using community services was similar for beneficiaries in the Assistance Track intervention and control groups and for beneficiaries in the Alignment Track.
- Roughly half of the survey respondents who reported using community services found the services “very” or “quite a bit” effective in meeting their needs.
- Survey data suggest that being randomized to the navigation group did not increase the likelihood of need resolution. Respondents in both tracks reported similar percentages of need resolution.
- Food needs were least likely to be resolved (**Exhibit ES-4**). Roughly one in four beneficiaries reported that their food need had been resolved at the time of the survey compared to almost half of those with a transportation, housing, or utility need.
- Not all survey respondents whose need was resolved used community services. Except for those with a food need, more beneficiaries resolved their HRSN than used community services (**Exhibit ES-4**).
- Interviewed beneficiaries indicated AHC navigation was one of several strategies used to resolve HRSNs. Beneficiaries also relied on resources unrelated to the AHC Model, including family, friends, and case workers to address their needs.

## Exhibit ES-4. Survey Respondents' Use of Community Services and Self-reported HRSN Resolution Following Screening



Methods: Includes Assistance Track intervention group and Alignment Track beneficiaries screened from April 2019–March 2021, surveyed roughly 6 months after their initial screening. Estimates were weighted to adjust for survey sampling and nonresponse. The analyses for each HRSN included only beneficiaries reporting each need in the initial screening (housing, utilities, food, or transportation, respectively). Source: Accountable Health Communities Evaluation Beneficiary Survey. Definitions: HRSN = health-related social need. Time Frame: January 2020–January 2022.

### Gaps Between Availability of Community Resources and Beneficiary Needs Identified Through Screening Could Reduce the Impact of Navigation

- During interviews, beneficiaries, navigators, and CSPs all described challenges connecting beneficiaries with community resources.
- Beneficiaries experienced four key challenges to using community services: lack of transportation, ineligibility for services, long wait-lists, and lack of community resources (e.g., housing vouchers, utility assistance).
- Community resource availability varied across bridge organization GTAs, and community resource availability was not always matched to population needs. Some bridge organizations served areas that

“You've got 600 people on a waiting list who are wanting to get into housing, and you have 50 units across the entire county that become open every 30 days. So, it's just a trickle of putting people that are homeless or chronically homeless into housing.”

— CSP Stakeholder

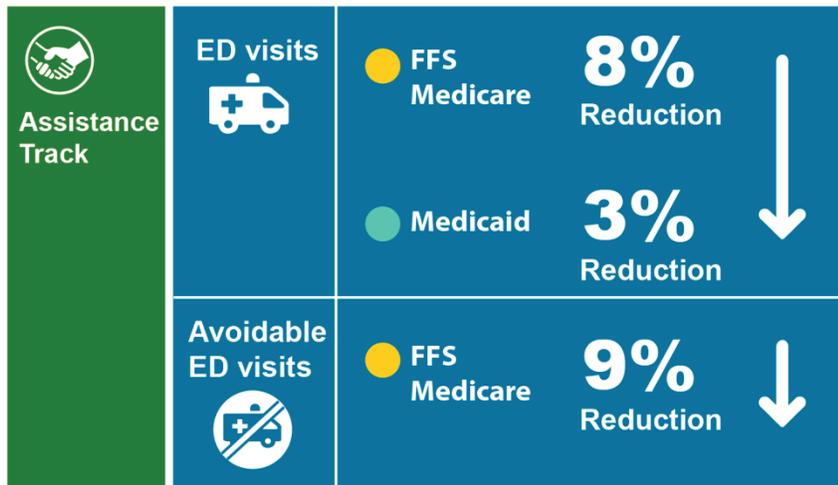
had high needs (based on community sociodemographic characteristics in the GTA) but low resource availability (measured as the number of social service organizations per 100,000 people in the GTA).

- The gaps in community resource availability most commonly described in interviews were for housing and transportation needs.
- Almost 60% of CSPs reported their capacity to address HRSNs increased since the start of the AHC Model. CSPs were surveyed in 2020, and this finding could reflect increases in funding for social services as part of the federal, state, and local responses (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act funding) to the COVID-19 pandemic. In addition, bridge organizations referred beneficiaries to more CSPs in 2021 compared to 2019.

### The AHC Model Reduced ED Visits Among Medicaid and FFS Medicare Beneficiaries in the Assistance Track

- Medicaid and FFS Medicare beneficiaries in the Assistance Track intervention group who were eligible to receive navigation had lower ED use than beneficiaries who were randomized to the control group and were not offered navigation (**Exhibit ES-5**). FFS Medicare beneficiaries had 8% fewer ED visits over the first 3 years after screening, while Medicaid beneficiaries had 3% fewer ED visits over the first 2 years after screening.

**Exhibit ES-5. Assistance Track Impacts on Emergency Department Visits**



Sample Size: 20,063 Medicaid beneficiaries and 8,980 FFS Medicare beneficiaries in the intervention group.

Methods: Weighted Poisson estimated impacts on ED visits and avoidable ED visits. Weight variable: Number of months during the year the beneficiary was eligible for Medicaid or FFS Medicare divided by 12.

Source: RTI analysis of Chronic Conditions Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files and Medicare claim files.

Time Frame: Medicaid data cover May 2018 through December 2020; FFS Medicare data cover May 2018 through December 2021.

Definitions: ED = emergency department; FFS = fee for service.

Other Notes: The percentage reduction is the impact estimate as a percentage of the Assistance Track control group mean for the outcomes in the eight quarters after screening (Medicaid) or the 12 quarters after screening (FFS Medicare).

- Particularly for FFS Medicare beneficiaries, the reduction in ED use in the Assistance Track was driven by avoidable ED visits that are considered likely to be nonemergent or potentially preventable through

better ambulatory care. FFS Medicare beneficiaries in the intervention group had 9% fewer avoidable ED visits relative to the control group. Medicaid beneficiaries in the intervention group also had fewer avoidable ED visits than the control group, but the difference was not statistically significant.

- The AHC Model assumed resolving beneficiaries' HRSNs will improve their health outcomes and reduce health care utilization. Although the AHC Model did not increase HRSN resolution, navigation may alter beneficiary behavior in ways that change health care utilization.

### **The AHC Model Did Not Impact Other Expenditure and Utilization Outcomes in the Assistance Track or Any Outcomes in the Alignment Track, Although Some Changes Were Directionally Promising**

- Impacts on other outcomes for the Assistance Track were directionally suggestive of reductions in expenditures and other hospital-related outcomes, although they were not statistically significant. Medicaid and FFS Medicare beneficiaries in the intervention group had lower total expenditures and fewer inpatient admissions, admissions for conditions like uncontrolled diabetes or hypertension that could be avoided with appropriate ambulatory care, and unplanned readmissions than control group beneficiaries.
- There were no statistically significant impacts on expenditures, ED visits, or hospital-related outcomes for the Alignment Track. In part, this was because there were not enough navigation-eligible beneficiaries in the Alignment Track to detect statistically significant differences. Although not statistically significant, impact estimates for the Alignment Track also were directionally suggestive of reductions for both Medicaid and FFS Medicare beneficiaries in overall ED visits, avoidable ED visits, total expenditures, and nearly all of the hospital-related outcomes.
- There were no statistically significant changes in primary care provider visit rates or follow-up visits and ED use after hospital discharge for either Medicaid or FFS Medicare beneficiaries in both model tracks.

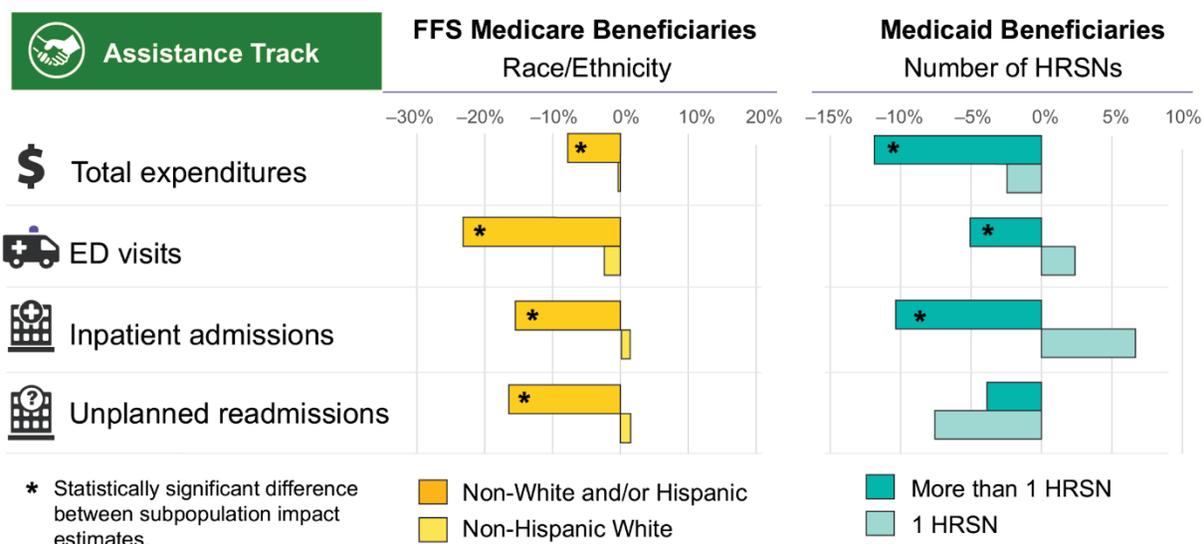
### **The AHC Model Showed a Few Promising Impacts on Health and Quality of Care in Both Tracks, but Most Outcomes Showed Little Change**

- Addressing the quality of housing conditions may reduce environmentally exacerbated asthma complications and respiratory illnesses that need treatment, thereby improving beneficiary health. There were statistically significant reductions in the percentage of beneficiaries receiving treatment for respiratory illness among Medicaid beneficiaries in the Assistance Track and FFS Medicare beneficiaries in the Alignment Track. Although there were no other statistically significant impacts, the measures of asthma complications and respiratory illness were both directionally suggestive of improvements in health outcomes for Medicaid and FFS Medicare beneficiaries in the Assistance Track. The direction of impacts on these measures in the Alignment Track was mixed.
- Resolving HRSNs could reduce external stressors, which in turn could improve beneficiaries' ability to seek and adhere to treatment for mental health conditions such as depression and substance use disorders. Quality-of-care outcomes related to continuity of antidepressant use and initiation of substance use treatment showed little change for either Medicaid or FFS Medicare beneficiaries in both model tracks.

## Assistance Track Impacts on Several Health Care Expenditure and Utilization Outcomes Differed by Race and Ethnicity Among FFS Medicare Beneficiaries and by Number of HRSNs Among Medicaid Beneficiaries, but Differences in Subpopulation Impacts Were Not Consistent Across Payers or Tracks

- Non-White and/or Hispanic FFS Medicare beneficiaries in the Assistance Track had larger reductions in four key expenditure and utilization outcomes than White beneficiaries (**Exhibit ES-6**). Medicaid beneficiaries with more than one HRSN in the Assistance Track had larger reductions in all of these outcomes except unplanned readmissions than beneficiaries with one HRSN.
- There were fewer differences in Assistance Track impacts for other subpopulations (disability status, rurality, and dual Medicare and Medicaid enrollment status), and the direction of impacts often varied across the four outcomes.
- Impacts on the four outcomes were not consistently more or less favorable for any subpopulation in the Alignment Track for both Medicaid and FFS Medicare.
- In general, differences in impacts for subpopulations were not consistent across payers or tracks.

**Exhibit ES-6. Assistance Track Impacts on Expenditures and Utilization for Selected Subpopulations**



Sample Size: N=20,063 for Medicaid; N=8,980 for FFS Medicare in the intervention group.  
 Methods: Weighted ordinary least squares estimated impacts on total expenditures. Weighted Poisson estimated impacts on ED visits and inpatient admissions. Weighted logistic estimated impacts on unplanned readmissions. Weight variable: Number of months during the year the beneficiary was eligible for Medicaid or FFS Medicare divided by 12.

Source: RTI analysis of Chronic Conditions Data Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files and FFS Medicare claim files.

Time Frame: Medicaid data cover May 2018 through December 2020; FFS Medicare data cover May 2018 through December 2021.

Definitions: ED = emergency department; FFS = fee for service; HRSN = health-related social need.

Other Notes: The percentage reduction is the impact estimate as a percentage of the Assistance Track control group mean for the outcomes in the eight quarters after screening (Medicaid) or the 12 quarters after screening (FFS Medicare).

## Bridge Organizations Met Their Requirement to Address Gaps in Community Service Availability in Different Ways

- Alignment Track bridge organizations were required to conduct an annual analysis of gaps in the availability of community services and develop a quality improvement (QI) plan to address identified gaps. Their plans varied in strength and fidelity to components required by the AHC Model, but nearly all improved their QI planning over time.
- QI plans focused on a variety of activities, including improving screening and navigation processes, improving inventories of community resources to which beneficiaries could be referred, building relationships between clinical and community partners, creating a culture of QI, and increasing the supply of community resources for prioritized HRSNs.
- Alignment Track bridge organizations were required to convene an advisory board of key partners (e.g., providers, CSPs, beneficiaries, Medicaid officials) and to share with it HRSN screening and navigation data. These data were used at advisory board meetings to review implementation performance and to gather input from board members on performance challenges and opportunities for improvement and to inform QI activities. Most Assistance Track bridge organizations had a formal or informal advisory board, even though it was not a requirement for them. However, they did not share data as widely as those bridge organizations in the Alignment Track.
- Alignment activities linked the “two worlds” of clinical care and community services. By convening at advisory board meetings, collaborating on strategic plans and mission and vision statements, and observing CSP operations firsthand, clinical and CSP groups began to understand and value their respective professions, standards, and regulations.
- Advisory boards benefitted from having beneficiaries as members, but many did not recruit them (even though it was a model requirement) or found it difficult to retain them because the beneficiary members had difficulty attending meetings.
- Because the Assistance Track also engaged advisory boards, comparisons between the Alignment Track and the Assistance Track control group are likely to understate the added benefit of funding alignment activities.
- Bridge organization leads reported that health resource equity statements, a requirement for bridge organizations in both tracks, informed how they collected and used data to support model planning. The equity statement was used to describe priority groups and subpopulations and to review data to identify needs. This information supported bridge organization efforts to improve their ability to reach and engage priority populations, including selection of CDSs that served priority populations and CSPs closer to where these populations lived.
- Bridge organization leads also reported working with partners to obtain and analyze monitoring data that they used to inform improvements related to health equity goals. For example, one AHC leader identified disparities in offers to screen beneficiaries and took steps to address those disparities with CDSs.
- Some bridge organization stakeholders and advisory board members talked about the “two worlds” of clinical care and community services and how the AHC Model helped close that gap. In terms of barriers to clinical-community collaboration, AHC stakeholders described a “culture side of things,” where clinical and community service representatives needed to learn each other’s language. Other CSP advisory board members added that they felt CDS representatives perceived clinical work as superior to community-

“Health equity is a theme that permeates the work of all of these people that are on our advisory board as well as ourselves ... we are always thinking about what populations are we missing? What do we need to do to make the work increase health equity?”

— Bridge Organization Lead

based services. However, through alignment activities—including convening at board meetings, collaborating on strategic plans and mission and vision statements, and observing CSP operations firsthand—clinical and CSP groups were perceived to be coming together, including the benefit of having CDSs learn the value of CSPs’ work and their professionalism, standards, and regulations.

## The COVID-19 Pandemic Disrupted Screening and Navigation Processes, but Bridge Organizations Found New Strategies That Minimized Disruptions

- Many bridge organizations reported that screening and navigation slowed or ceased entirely at the outset of the pandemic when face-to-face encounters at CDSs were suspended, but they eventually transitioned to virtual interactions. The number of beneficiaries screened increased after a sharp decline in the first months of the pandemic but never fully recovered to prepandemic levels.
- The percentage of screened beneficiaries who were eligible for navigation was largely unaffected by the pandemic, but the prevalence of the types of HRSNs changed within the navigation-eligible population.
- Many bridge organizations shifted responsibility for screening from CDS staff to bridge organization staff, which eased staffing challenges CDSs faced in continuing to support screening. Expanded use of telehealth visits and permission granted by the Centers for Medicare & Medicaid Services to extend the time frame to complete screening from a 5-day window around a visit to 2 weeks before and up to a year after a visit also helped bridge organizations maintain screening volume.
- Centralization of screening allowed bridge organizations to redesign screening and navigation processes. Some bridge organizations that used the same staff for screening and navigation found it allowed staff to develop a deeper rapport with beneficiaries and eliminated challenges with handoffs from screeners to navigators.
- The COVID-19 pandemic created new challenges to resolving beneficiaries’ HRSNs. Most bridge organizations encountered reduced availability of or access to CSPs, while CSPs reported increased demand for their services (especially food assistance) and decreased staffing capacity.
- Bridge organizations mentioned the beneficial impacts of government assistance during the pandemic, including extended Supplemental Nutrition Assistance Program benefits, schools offering food for students, and eviction moratoriums.

“The greatest accomplishment by navigators is helping people in the community ... and instead of being overwhelmed when workflow has changed so many times they adapt and figure out how we can make this work. They’ve excelled and really worked hard with patients.”

— Bridge Organization Lead



## Chapter 1: Introduction

In April 2017, the Center for Medicare & Medicaid Innovation (Innovation Center) launched the Accountable Health Communities (AHC) Model to test whether identifying and addressing core health-related social needs (HRSNs) of community-dwelling beneficiaries improve health outcomes and reduce health care costs and unnecessary utilization.

The Innovation Center funded 32 participants known as bridge organizations to implement the AHC Model in communities across the country in collaboration with clinical delivery sites (CDSs), community service providers (CSPs), state Medicaid agencies, and other community stakeholders. Bridge organizations included health systems and hospitals, health information technology providers, academic institutions, payers, nonprofit organizations, and a public health agency. The AHC Model's initial 5-year period of performance concluded in April 2022, but 18 bridge organizations received no-cost extensions to continue model activities for an additional 3 to 12 months.<sup>1</sup>

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<sup>1</sup> The Innovation Center originally funded 32 bridge organizations; four voluntarily terminated their participation in the AHC Model.

**The AHC Model’s three main goals were to:**



- Help Medicare and Medicaid beneficiaries with unmet HRSNs connect with community resources through screening, referral, and navigation services.



- Optimize community capacity to address HRSNs through quality improvement (QI), data-driven decision making, and coordination and alignment of community-based resources.



- Reduce inpatient and outpatient health care use and total costs by addressing unmet HRSNs through referral and connection to community services.

Community-dwelling Medicare and Medicaid beneficiaries who lived in a bridge organization’s Geographic Target Area (GTA) were screened before, during, or after a clinical encounter using a standard [AHC HRSN Screening Tool](#) for five core needs: housing instability, food insecurity, problems with transportation and utilities, and interpersonal violence. Beneficiaries with one or more of the five core HRSNs and two or more emergency department (ED) visits in the 12 months before screening were eligible to receive navigation assistance to address their HRSNs.

The model tested whether two interventions (Assistance versus Alignment) could affect health care utilization and costs by helping Medicare and Medicaid beneficiaries resolve their HRSN needs. Each intervention was implemented in separate tracks, and each AHC Model bridge organization participated in one of the two tracks (see **Exhibit 1-1**). The Assistance Track tested whether navigation assistance connecting navigation-eligible beneficiaries with community services results in increased HRSN resolution and reduced health care expenditures and unnecessary utilization. The Alignment Track tested whether navigation assistance, combined with engaging key stakeholders in community-level continuous quality improvement (CQI) to align community service capacity with the community’s service needs, results in greater increases in HRSN resolution and greater reductions in health expenditures and utilization than navigation assistance alone.

**Exhibit 1-1. Elements of the AHC Model by Track**

Elements of the Model	 <b>Assistance Track</b>	 <b>Alignment Track</b>
<b>Universal screening</b> of all community-dwelling beneficiaries who seek care from participating clinical delivery site or other designated sites.	✓	✓
<b>Standardized screening tool</b> for HRSNs that CMS developed to determine eligibility. May also screen for supplemental HRSNs.	✓	✓
<b>Community referral summary</b> , a list of resources tailored to the beneficiary’s unmet HRSNs. Populated from the <b>Community Resource Inventory</b> , a database of community service providers updated at least every 6 months.	✓	✓
<b>Randomization</b> of navigation-eligible beneficiaries into an intervention group or control group.	✓	.

(continued)

## Exhibit 1-1. Elements of the AHC Model by Track (continued)

Elements of the Model	 <b>Assistance Track</b>	 <b>Alignment Track</b>
<b>Navigation</b> involving in-depth assessment, planning, referral to community services, and follow-up until needs are resolved or determined to be unresolvable.	✓	✓
<b>Community-level continuous quality improvement</b> that includes an <b>advisory board</b> to ensure resources are available to address HRSNs, data sharing to inform a <b>gap analysis</b> , and a <b>quality improvement plan</b> .	.	✓

Definitions: CMS = Centers for Medicare & Medicaid Services; HRSN = health-related social need.

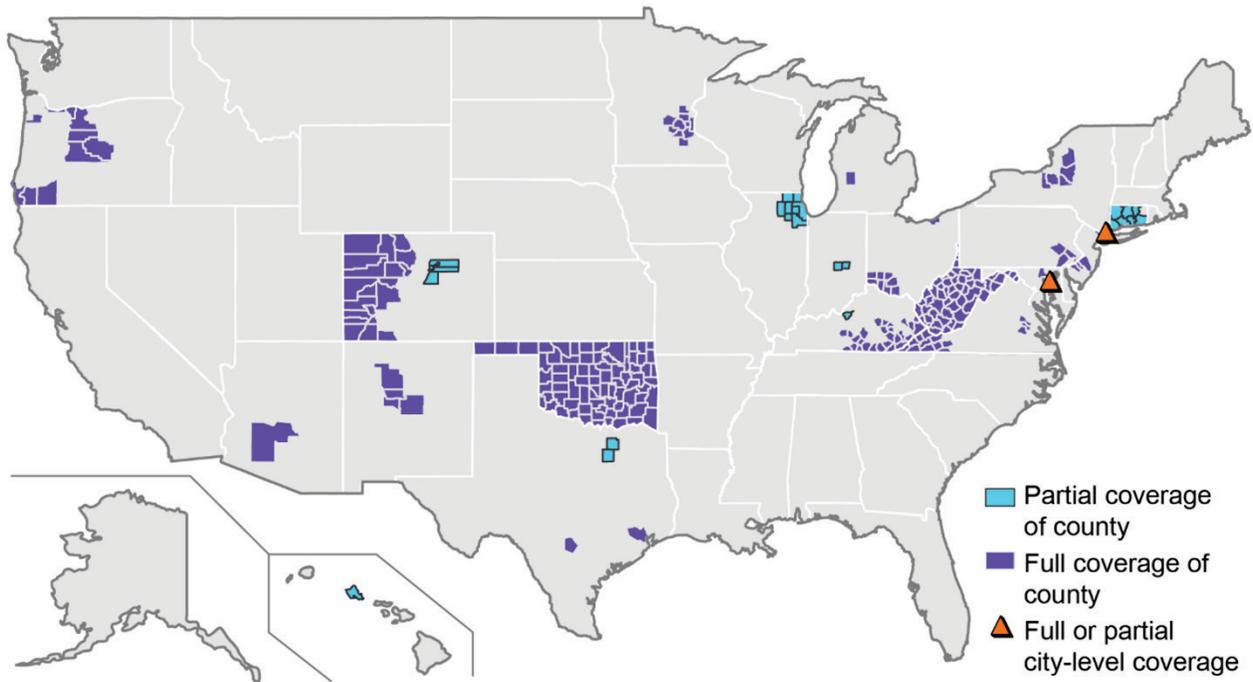
The Innovation Center contracted with RTI International in September 2018 to conduct an evaluation of the AHC Model to assess the model’s impact on these outcomes and the factors contributing to that impact. Beneficiary screening began in summer 2018.

This Second Evaluation Report prepared by RTI details the progress of the AHC Model toward achieving its goals and influencing key outcomes. The [First Evaluation Report](#) released in December 2020 described the key features of the model (eligibility, interventions, model participants) and the evaluation’s goals and design. It also presented baseline data on expenditures and utilization and preliminary impact estimates for the Medicare fee-for-service (FFS) population and assessments of program implementation through 2019. This Second Evaluation Report builds on those findings with an additional 2 years of data obtained through 2021.

## AHC Model Geographic Target Areas

The AHC Model served diverse communities across the United States, which vary by location, geography, and urbanicity, often within a single bridge organization (see **Exhibit 1-2**). Most bridge organizations served one or more counties, and the majority of these counties were metropolitan or an urban cluster having between 10,000 and 50,000 residents. Two bridge organizations served an entire state (West Virginia and Oklahoma), and two served a city (Baltimore and New York City) not otherwise part of a county.

## Exhibit 1-2. AHC Model Geographic Target Areas



Source: Bridge organization applications and direct communications from the Innovation Center.  
Other Notes: Not pictured are four bridge organizations that exited the model early.

## Evaluation Research Objectives

The context in which the AHC Model was implemented was a main focus of the research questions addressed in this report along with the model's impacts for Medicaid, FFS Medicare, and Medicare Advantage beneficiaries. Although it is still too early to definitively attribute changes in outcomes to the model, this report begins to examine the relationship between implementation and model impacts. This report, like the one before it, does not address each research question in its entirety but adds to the existing knowledge and informs the direction of future reports. The full set of research questions addressed in this report can be found in **Appendix A**.

The AHC Model's four research objectives are to:

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### Research Objectives for the AHC Evaluation

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Context



1. Examine the context within which the AHC Model was implemented for the purpose of understanding the:
  - a. implementation of the model,
  - b. characteristics of bridge organizations associated with its success or failure, and
  - c. generalizability of model impacts across a wider population.

Examine



2. Examine how the AHC Model was implemented to understand:
  - a. how variations or similarities in implementation affect success or failure and
  - b. the generalizability of the AHC interventions.

Impact



3. Relative to usual care, examine and estimate the impact of the interventions in the Assistance and Alignment Tracks.

Analysis



4. Examine the factors or conditions and the variations and similarities therein that brought about the impacts and how these factors affect the generalizability of the AHC interventions.
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## Sources of Evaluation Data

To fully understand the context in which the AHC Model operates and assess any impacts on key outcomes, the evaluation collected data from the following major sources: publicly available community data (e.g., American Community Survey, the Area Health Resources File, County Health Rankings); AHC screening and navigation data; Medicaid and Medicare claims and encounter data; key informant interviews; and surveys of beneficiaries and participating organizations (**Exhibit 1-3**).

The use of multiple sources of data provided opportunities to examine the consistency of the findings and the factors that explain them. However, even with multiple sources of data corroborating various findings, the evaluation had notable general limitations. First, not all data represented the same period, so findings from one source lag others. Our conclusions, thus, are tempered by the fact that not all the data were available to make definitive judgments. The Medicaid claims data, for example, were nearly a year behind the Medicare claims data. Second, survey and qualitative data may not be wholly representative of the views of all stakeholders. While we made an effort to identify those best able to address our queries, there were gaps in our data collection due to staff turnover, changes in roles and responsibilities, and survey nonresponse. Third, the Alignment Track was not sufficiently large to detect statistically significant differences in expenditures and health care utilization outcomes. In future reports, we will explore additional, complementary methodologies that may help overcome the challenges associated with not having a sufficiently large sample to detect statistically significant differences in

outcomes. Having multiple sources mitigates the loss of data from any single source due to its unique limitations. The limitations of individual data sources are discussed in the technical appendixes pertaining to them.

### Exhibit 1-3. Data Sources Used in the Second Evaluation Report

Data Source
<b>Publicly available data</b> on community measures of social need (e.g., food insecurity, housing) in the bridge organizations' GTAs through February 2021.
<b>AHC screening and navigation data</b> collected from bridge organizations through December 2021.
<b>Beneficiary claims and encounter data</b> for expenditures and health care utilization measures for Medicare Advantage through December 2019, Medicaid through December 2020, and FFS Medicare through December 2021.
<b>Qualitative key informant interview data</b> regarding experiences with screening, referral, and navigation and lessons learned collected from AHC bridge organizations, clinical delivery sites, community service providers, and beneficiaries through March 2022.
<b>Beneficiary survey data</b> on experiences with community service providers and resolution of HRSNs collected from beneficiaries enrolled in the model through January 2022.
<b>Organizational survey data</b> on the structural characteristics of the bridge organizations and clinical delivery sites; screening, referral, and navigation practices; staffing models; engagement with an advisory board or other governing body; and use of quality improvement methods collected through June 2021.
<b>Community service provider survey data</b> on experiences with model activities collected from community service providers participating in the model through July 2020.

Definitions: AHC = Accountable Health Communities; FFS = fee-for-service; GTA = Geographic Target Area; HRSN = health-related social need.

## Overview of the Second Evaluation Report

This Second Evaluation Report provides insights on the implementation of screening, referral, and navigation and related challenges and successes since the prior reporting period (through March 2019). Most notably, this reporting period covers the first 24 months of the COVID-19 pandemic, which presented unprecedented challenges to model implementation. These challenges are described in detail along with the innovations and adaptations employed to address them. This report also presents the impact estimates on expenditures and health care utilization. The evaluation's findings for this report are presented as follows:

- **Chapter 2** updates the descriptive analysis of HRSNs and sociodemographic characteristics of AHC-screened and navigation-eligible beneficiaries, navigation outcomes, and the effect of COVID-19 on HRSNs.
- **Chapter 3** describes the structural and organizational characteristics of bridge organizations and clinical delivery sites that may be associated with the implementation of model interventions.
- **Chapter 4** presents the evaluation's conceptual framework for measuring community capacity to address HRSNs and describes the resources available in AHC communities to address beneficiary needs, gaps in services, and effect of COVID-19 on community capacity.
- **Chapter 5** describes progress to date on implementation of alignment activities, including advisory boards, QI, and efforts to identify and address gaps in services.
- **Chapter 6** describes progress to date on screening beneficiaries for HRSNs and referring them to community services, including the effect of the COVID-19 pandemic on screening processes and workflows.

- **Chapter 7** presents progress to date on activities to connect navigation-eligible beneficiaries to community services and to resolve their HRSNs and the effect of the COVID-19 pandemic on those activities. This chapter also explores the effect of navigation on connecting beneficiaries to services and resolving their needs.
- **Chapter 8** presents estimates of impacts on expenditures and health care utilization for Medicare and Medicaid beneficiaries in both tracks, including differences in impacts for selected subpopulations of people who are underserved.
- **Chapter 9** offers conclusions about the performance of the model and impacts identified through the fourth year of model implementation.

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## Chapter 2: Beneficiary Characteristics and HRSNs

Bridge organizations served communities that varied widely in sociodemographic characteristics, reported health status, insurance coverage, poverty, and HRSNs. The characteristics of the AHC communities and beneficiaries who live in them may influence implementation of the AHC Model and its impact on model outcomes. This chapter addresses Research Objective 1, which seeks to understand the context of the AHC Model, including an analysis of three research questions describing the characteristics of the beneficiaries served under the AHC Model:

- What are their HRSNs and risk status?
- What are their demographic, socioeconomic, and health-related traits?
- Are there key differences or similarities (e.g., demographics, types of social needs identified) in the types of beneficiaries served between the two tracks, between the intervention and control groups, or across bridge organizations?

This chapter explores characteristics and HRSNs among AHC-screened, navigation-eligible, and navigation opted-in beneficiaries. We also examine characteristics by navigation outcomes among those who received up to 12 months of navigation. Understanding the persons the

### Key Takeaways

- Medicaid beneficiaries were more likely than Medicare beneficiaries to meet eligibility criteria for navigation, but the likelihood of opting into navigation among those who met the criteria did not vary by payer type.
- About one-fifth of screened beneficiaries and two-thirds of navigation-eligible beneficiaries reported having multiple needs.
- Food insecurity was the most common HRSN followed by housing, transportation, and utilities.
- Housing and transportation needs declined following the start of the COVID-19 pandemic, food needs increased, and utility needs were less affected.
- Beneficiaries from racial and ethnic minority groups were more likely than White beneficiaries to be connected to a CSP for at least one HRSN.
- Medicare beneficiaries were more likely than Medicaid beneficiaries to have an HRSN resolved.

AHC bridge organizations served is important to ensure that the AHC Model eligibility criteria successfully identified a high-risk beneficiary population and the nature of their HRSNs.

The data for this chapter came from the AHC screening and navigation data and Medicare and Medicaid enrollment files. (See **Appendix B** for additional details on the data used.)

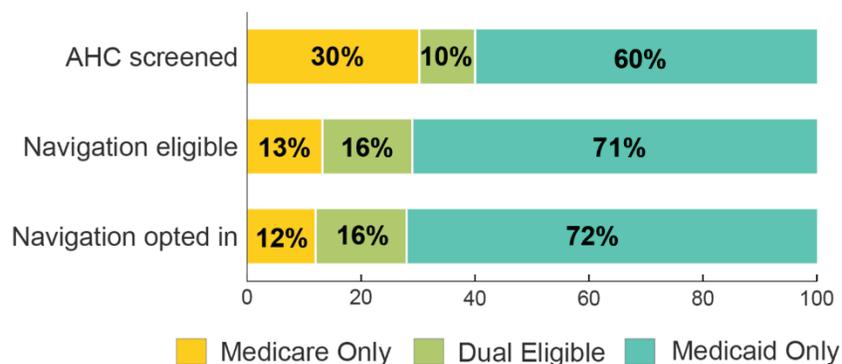
## The AHC Model Has Continued to Reach People Who are Underserved

### The Majority of AHC Beneficiaries Were Medicaid-Only Enrollees

The majority (60%) of AHC-screened beneficiaries were in Medicaid only, and another 10% were dually eligible for Medicare and Medicaid (**Exhibit 2-1**), which is consistent with the findings provided in the [First Evaluation Report](#). Of the navigation-eligible beneficiaries, 87% were covered by Medicaid only or dually eligible for Medicare and Medicaid compared to 70% of AHC-screened beneficiaries. This finding indicates that low-income beneficiaries were disproportionately likely to meet the AHC navigation eligibility criteria of having at least one HRSN and at least two ED visits in the past 12 months. These percentages are slightly higher than those presented in the [First Evaluation Report](#), indicating that the model continued to reach people who are underserved. However, the likelihood of opting into navigation among those meeting the eligibility criteria did not vary by payer type.

#### Exhibit 2-1. AHC-Screened, Navigation-Eligible, and Opted-In Beneficiaries by Payer Type

The majority of AHC beneficiaries were Medicaid-only enrollees.



Source: AHC screening and navigation data, May 2018–December 2021; Medicare enrollment files, 2015–2021; Medicaid enrollment files, 2015–2020. Definitions: AHC = Accountable Health Communities.

Other Notes: Navigation-eligible beneficiaries are community-dwelling beneficiaries with one or more core health-related social needs and two or more emergency department visits in the 12 months before screening. Payer type was missing for <1% of AHC-screened, navigation-eligible, and opted-in beneficiaries. Navigation opted-in beneficiaries are navigation-eligible Alignment Track and Assistance Track beneficiaries assigned to the intervention group who agreed to receive navigation services.

Differences in three sociodemographic characteristics (age, race or ethnicity, and education) between AHC-screened, navigation-eligible, and opted-in beneficiaries indicate that navigation-eligible Medicare beneficiaries (including dually eligible beneficiaries) came from more underserved communities (individuals younger than 65 years of age with a disability, racial and ethnic minority groups, and individuals with less than a high school education) than the AHC-screened Medicare population. Differences between AHC-screened and navigation-

eligible Medicaid populations were more modest because Medicaid specifically serves people with low incomes. The results below combine beneficiaries who are dually eligible for Medicare and Medicaid and those who only receive Medicaid; however, Appendix B includes the sociodemographic characteristics broken out by beneficiaries who are dually eligible for Medicare and Medicaid and those who only receive Medicare.

### **Beneficiaries Between 18 and 64 Years of Age Were More Likely Than Other Age Groups to Be Navigation Eligible, but the Likelihood of Opting into Navigation Did Not Differ by Age**

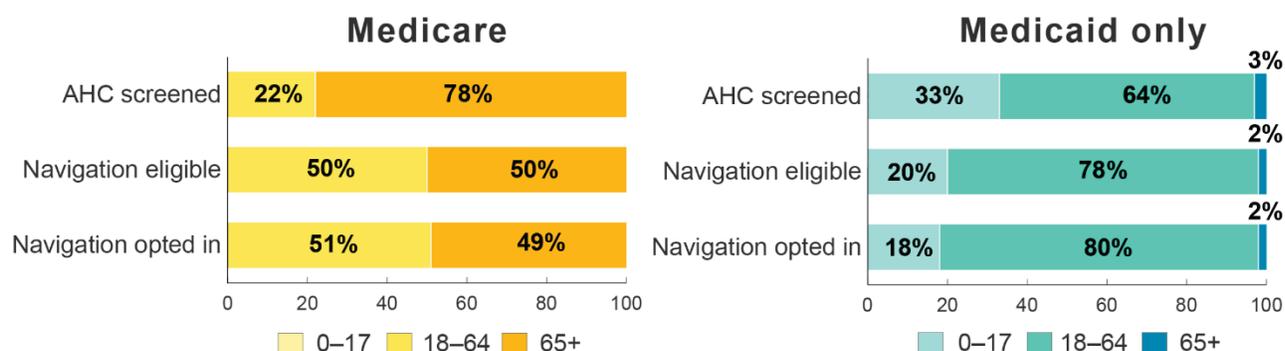
The AHC Model required universal screening of Medicare and Medicaid beneficiaries and allowed proxies to complete the screening to ensure the model included beneficiaries who were less likely to be able to do so independently (children, older adults, individuals with a disability). Although 78% of screened Medicare beneficiaries were 65 years of age or older and qualified for Medicare based on age, they were less likely to be navigation eligible than those between 18 and 64 years of age who qualified for Medicare based on disability (**Exhibit 2-2**). This is consistent with the findings presented in the [First Evaluation Report](#). The likelihood of opting into navigation did not differ by age: 50% of navigation-eligible beneficiaries and 49% of opted-in beneficiaries were 65 years of age or older; 50% and 51%, respectively, were between 18 and 64 years of age; and no Medicare beneficiaries were younger than 18 years of age.

Adult Medicaid beneficiaries between 18 and 64 years of age were more likely to be navigation eligible than those younger than age 18, which is consistent with the findings presented in the [First Evaluation Report](#). The likelihood of opting into navigation did not differ by age for Medicaid-only beneficiaries: 20% of navigation-eligible beneficiaries and 18% of opted-in beneficiaries were younger than 18 years of age; 78% and 80%, respectively, were between 18 and 64 years of age. A small number (2%) of navigation-eligible and opted-in Medicaid-only beneficiaries were 65 years of age or older, which may be due to reporting error in the program data. Additional data on the beneficiaries dually eligible for Medicare and Medicaid are included in **Appendix B**.



## Exhibit 2-2. Age at Screening Among AHC-Screened, Navigation-Eligible, and Opted-In Beneficiaries

Medicare beneficiaries who qualified through disability (i.e., younger than 65 years of age) were more likely than those who qualified by age to be eligible for and opt into the AHC Model. Adult Medicaid-only beneficiaries were more likely than children to be eligible for and opt into navigation.



Source: AHC screening and navigation data, May 2018–December 2021; Medicare enrollment files, 2015–2021; Medicaid enrollment files, 2015–2020.

Definitions: AHC = Accountable Health Communities.

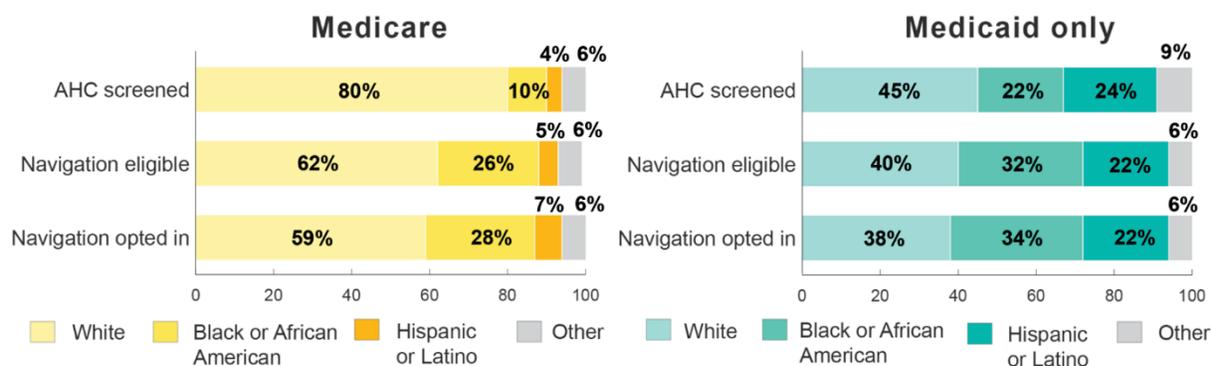
Other Notes: Navigation-eligible beneficiaries are community-dwelling beneficiaries with one or more core health-related social needs and two or more emergency department visits in the 12 months before screening. Medicare includes dually eligible beneficiaries. Medicaid beneficiaries identified as 65 years of age or older may be due to reporting error. Age was missing for <1% of AHC-screened, 2% of navigation-eligible, and 2% of opted-in beneficiaries with Medicare and for <1% of AHC-screened, <1% of navigation-eligible, and <1% of opted-in beneficiaries with Medicaid. Navigation opted-in beneficiaries are navigation-eligible Alignment Track and Assistance Track beneficiaries assigned to the intervention group who agreed to receive navigation services.

## Beneficiaries in Racial and Ethnic Minority Groups Were More Likely Than White Beneficiaries to be Navigation Eligible, but the Likelihood of Opting into Navigation Did Not Differ by Race and Ethnicity

Racial and ethnic differences between AHC-screened and navigation-eligible/opted-in beneficiaries also confirmed the greater vulnerability of navigation-eligible beneficiaries: beneficiaries in racial and ethnic minority groups were more likely than White beneficiaries to be navigation eligible (**Exhibit 2-3**). Once again, the difference was more pronounced among Medicare than among Medicaid beneficiaries. For Medicare beneficiaries, 20% of those screened were in racial and ethnic minority groups compared to 38% of navigation-eligible beneficiaries. For Medicaid beneficiaries, 55% of those screened were in racial and ethnic minority groups compared to 60% of those who were eligible for navigation. The likelihood of opting into navigation did not vary by race or ethnicity for either Medicare or Medicaid beneficiaries.

## Exhibit 2-3. Race and Ethnicity Among AHC-Screened, Navigation-Eligible, and Opted-In Beneficiaries

AHC-screened Medicare and Medicaid-only beneficiaries in racial and ethnic minority groups were more likely than White beneficiaries to be navigation eligible, but the likelihood of opting into navigation did not differ by race.



Source: AHC screening and navigation data, May 2018–December 2021; Medicare enrollment files, 2015–2021; Medicaid enrollment files, 2015–2020.

Definitions: AHC = Accountable Health Communities.

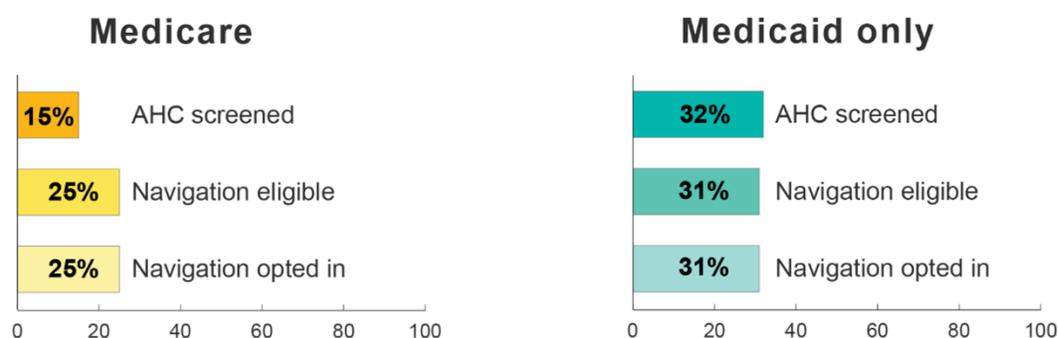
Other Notes: Navigation-eligible beneficiaries are community-dwelling beneficiaries with one or more core health-related social needs and two or more emergency department visits in the 12 months before screening. Medicare includes dually eligible beneficiaries. Race/ethnicity was missing for 4% of AHC-screened, 4% of navigation-eligible, and 4% of opted-in beneficiaries with Medicare and for 20% of AHC-screened, 17% of navigation-eligible, and 16% of opted-in beneficiaries with Medicaid. “Other” includes American Indian/Alaska Native, Asian, Hawaiian or Other Pacific Islander, and those who identify as multiple races. Navigation opted-in beneficiaries are navigation-eligible Alignment Track and Assistance Track beneficiaries assigned to the intervention group who agreed to receive navigation services.

## Navigation-Eligible and Opted-In Medicare Beneficiaries Were More Likely Than AHC-Screened Beneficiaries to Have Less Than a High School Education, but the Likelihood Did Not Differ for Medicaid-Only Beneficiaries

Education differences confirmed the greater vulnerability of navigation-eligible and opted-in beneficiaries compared to AHC-screened beneficiaries for Medicare but not Medicaid-only beneficiaries (**Exhibit 2-4**). For Medicare beneficiaries, individuals with less than a high school education were a larger share of the AHC-screened beneficiaries (15%) compared to navigation-eligible and opted-in Medicare beneficiaries (both 25%). This indicates Medicare beneficiaries with less than a high school education were more likely than other Medicare beneficiaries to meet the navigation eligibility criteria and opt in to navigation. For Medicaid beneficiaries, the share with less than a high school education was about the same for AHC-screened, navigation-eligible, and opted-in beneficiaries (32% and 31%, respectively). For both Medicare and Medicaid beneficiaries, the findings for AHC-screened and navigation-eligible beneficiaries are consistent with those presented in the [First Evaluation Report](#).

## Exhibit 2-4. AHC-Screened, Navigation-Eligible, and Opted-In Beneficiaries With Less Than a High School Education or Equivalent

Navigation-eligible and opted-in Medicare beneficiaries were more likely than AHC-screened beneficiaries to have less than a high school education—a difference that does not hold for Medicaid-only beneficiaries.



Source: AHC screening and navigation data, May 2018–December 2021; Medicare and Medicaid enrollment files. Definitions: AHC = Accountable Health Communities.

Other Notes: Navigation-eligible beneficiaries are community-dwelling beneficiaries with one or more core health-related social needs and two or more emergency department visits in the 12 months before screening. Medicare includes dually eligible beneficiaries. Education was missing for 26% of AHC-screened, 32% of navigation-eligible, and 34% of opted-in beneficiaries with Medicare and for 29% of AHC-screened, 31% of navigation-eligible, and 32% of opted-in beneficiaries with Medicaid. Navigation opted-in beneficiaries are navigation-eligible Alignment Track and Assistance Track beneficiaries assigned to the intervention group who agreed to receive navigation services.

## HRSNs of Beneficiaries Reached by the AHC Model

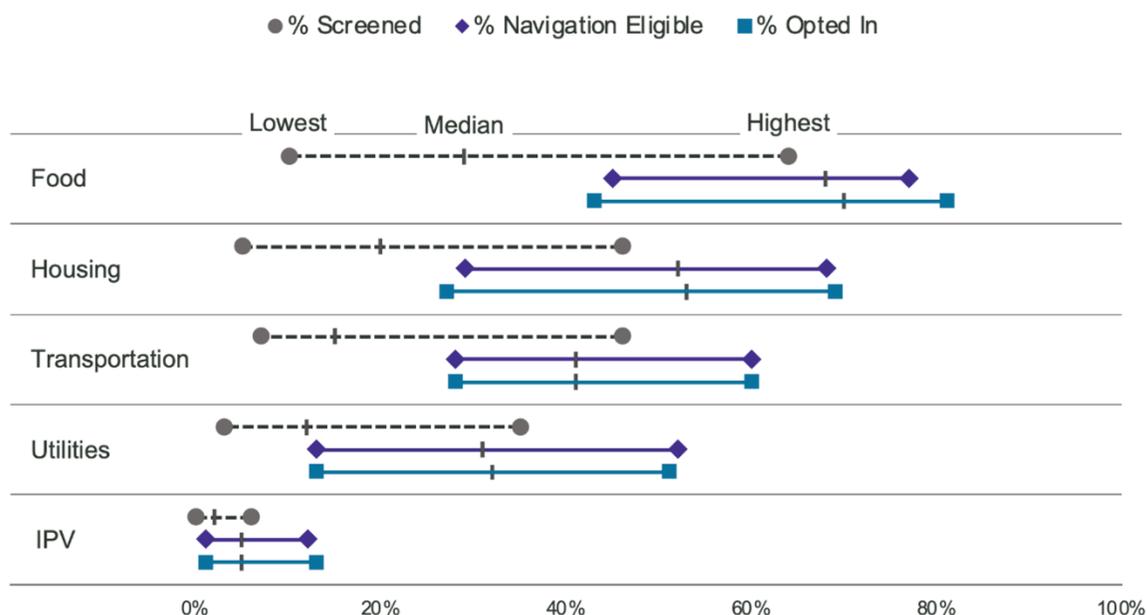
The AHC eligibility criteria—having at least one HRSN and at least two ED visits in the past 12 months—were intended to ensure model resources were provided to beneficiaries with HRSNs that may be associated with increased health care utilization. The [AHC HRSN Screening Tool](#) was used to screen Medicare and Medicaid beneficiaries to identify their HRSNs and determine eligibility for model navigation. Comparing the prevalence of the five core HRSNs among AHC-screened beneficiaries to core HRSN prevalence among navigation-eligible beneficiaries and opted-in beneficiaries helps identify the subset of high-risk beneficiaries the AHC Model targeted for assistance.

### Food Insecurity and Housing Remained the Most Prevalent HRSNs

More than one-third (37%) of screened beneficiaries had one or more of the five core HRSNs, and approximately one-fifth (19%) of screened beneficiaries had multiple HRSNs. About half of the beneficiaries with one or more HRSNs reported having two or more ED visits in the 12 months before screening and were thus eligible for navigation. Among screened beneficiaries with at least one HRSN, 63% had a food need, 47% had a housing need, 37% had a transportation need, 30% had a utility need, and 4% had an interpersonal violence need. The prevalence of each need among AHC-screened beneficiaries varied across bridge organizations, often considerably (**Exhibit 2-5**). These results are similar to the findings in the [First Evaluation Report](#).

## Exhibit 2-5. Range Across Bridge Organizations of Core Needs Among AHC-Screened, Navigation-Eligible, and Opted-In Beneficiaries

The median prevalence of food insecurity was 68% among navigation-eligible beneficiaries, which was the most common HRSN reported.



Source: AHC screening and navigation data, May 2018–December 2021.

Definitions: IPV = interpersonal violence.

Other Notes: Navigation-eligible beneficiaries are community-dwelling beneficiaries with one or more core health-related social needs and two or more emergency department visits in the 12 months before screening. Navigation opted-in beneficiaries are navigation-eligible Alignment Track and Assistance Track beneficiaries assigned to the intervention group who agreed to receive navigation services.

Overall across the bridge organizations, food insecurity (defined as sometimes or often worried that food would run out before money was available to buy more, or food bought did not last and money was unavailable to buy more) was the most common HRSN that AHC-screened, navigation-eligible, and opted-in beneficiaries reported, which is consistent with the findings presented in the [First Evaluation Report](#). However, prevalence varied among bridge organizations. The median prevalence of food insecurity was 68% among navigation-eligible beneficiaries and 70% among opted-in beneficiaries across all AHC bridge organizations, indicating a widespread need for food among the population the model serves.

The next most prevalent needs were related to housing (defined as worried about losing housing or having no steady place to live or problems with pests, mold, lead, heat, oven, smoke detectors, or water), transportation (defined as lack of reliable transportation for medical appointments, meetings, work, or getting things for daily living), and utilities (defined as electric, gas, oil, or water company threatened to shut off services or already shut off services). Across bridge organizations, the median prevalence of each need was similar for the navigation-eligible and opted-in populations—52% among navigation-eligible beneficiaries and 53% among opted-in beneficiaries for housing; 41% among both navigation-eligible and opted-in beneficiaries for transportation; and 31% and 32%, respectively, for utilities.

Interpersonal violence (defined as regular occurrence of being physically hurt, insulted, threatened with harm, or screamed or cursed at by another person, including a family member) was the least common HRSN that both AHC-screened and navigation-eligible beneficiaries reported; the median prevalence of reported interpersonal violence

among navigation-eligible beneficiaries across bridge organizations was only 5%. The low reported prevalence may be an underestimate, however. Beneficiaries may have been uncomfortable reporting such events, or screeners may have been hesitant to ask about them. The interpersonal violence items are the last core HRSN items in the [AHC HRSN Screening Tool](#) (most bridge organizations did not screen for supplemental needs) before the demographic items, which are also missing for many screened beneficiaries. Beneficiaries may have tired from answering the screening questions, or the screening may have been interrupted because beneficiaries were called away for some reason.

Navigation-eligible and opted-in beneficiaries reported a higher number of HRSNs than AHC-screened beneficiaries across all five core HRSNs. This finding is not surprising, given that the definition of navigation eligibility includes the presence of at least one core HRSN. The largest relative differences in needs reported by AHC-screened beneficiaries compared to navigation-eligible and opted-in beneficiaries were for food and housing, both of which have median percentages for navigation-eligible and opted-in beneficiaries outside the range for those screened. This disparity indicates that beneficiaries with food and housing needs were more likely than beneficiaries with other HRSNs to meet the high ED use eligibility requirement. The association between food and housing needs and ED use suggests food and housing are important areas for AHC navigation to address.

## **The COVID-19 Pandemic Changed the Prevalence of Food, Housing, and Transportation Needs Among Navigation-Eligible Beneficiaries**

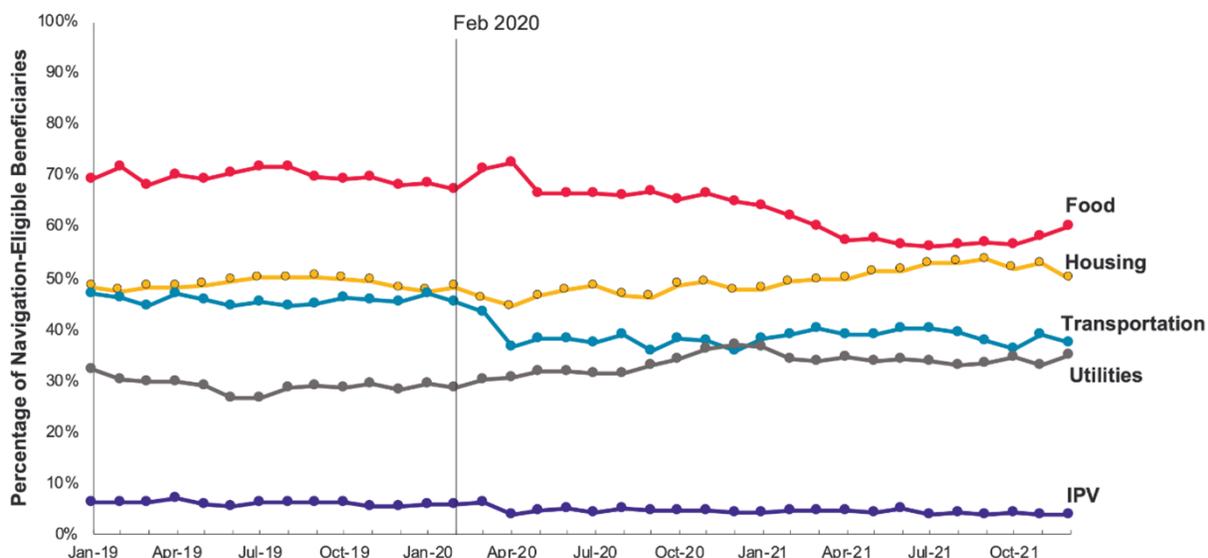
Social distancing measures enacted as a result of COVID-19 had an immense impact on the U.S. economy and the ability of families to afford basic needs. Unemployment increased, and adults and families were not able to pay rent, mortgage, and utility bills. In September 2020, the Centers for Disease Control and Prevention issued a temporary national moratorium on most evictions for nonpayment of rent, which ended in August 2021. The increases in unemployment, remote work, and being homebound also affected needs related to food, transportation, and interpersonal violence.

To trace the influence of COVID-19 on the prevalence of core HRSNs among navigation-eligible beneficiaries, **Exhibit 2-6** presents trends over the period from January 2019 through December 2021, with the start of the COVID-19 pandemic in February 2020 shown as a vertical line. Food was the most common HRSN among navigation-eligible beneficiaries throughout the 3-year period, starting at 70% in January 2019. Immediately following the start of the COVID-19 pandemic in February 2020, the percentage of beneficiaries with food needs increased for about 2 months; however, the percentage slowly decreased from May 2020 to October 2021 and then showed a slight increase in November and December 2021 but not to pre-pandemic levels.

Housing was the second most common need, but the prevalence of housing needs, which was at 50% through 2019, went down slightly immediately after the onset of COVID-19 and then increased through November 2021 to higher than pre-pandemic levels. Similar to housing needs, transportation needs declined in the period immediately after the onset of COVID-19. Before the pandemic, approximately 48% of eligible beneficiaries had a transportation need; the percentage dropped to approximately 40% following the start of the pandemic and then remained roughly steady through December 2021. Utility needs were less affected by the start of the COVID-19 pandemic. Before COVID-19, slightly over 30% of navigation-eligible beneficiaries had a utility need. The percentage changed little immediately following the onset of COVID-19, but the percentage rose steadily through December 2020 before declining slightly to about 35% in December 2021. About 5% of eligible beneficiaries reported a domestic violence need in January 2020, a percentage that declined very slightly through December 2021.

## Exhibit 2-6. Prevalence of Core Needs Among Navigation-Eligible Beneficiaries Over Time

In the period immediately following the start of the COVID-19 pandemic, the percentage of beneficiaries with housing and transportation needs decreased, while the percentage of beneficiaries with food needs increased.



Source: AHC screening and navigation data, May 2018–December 2021.

Definitions: IPV = interpersonal violence.

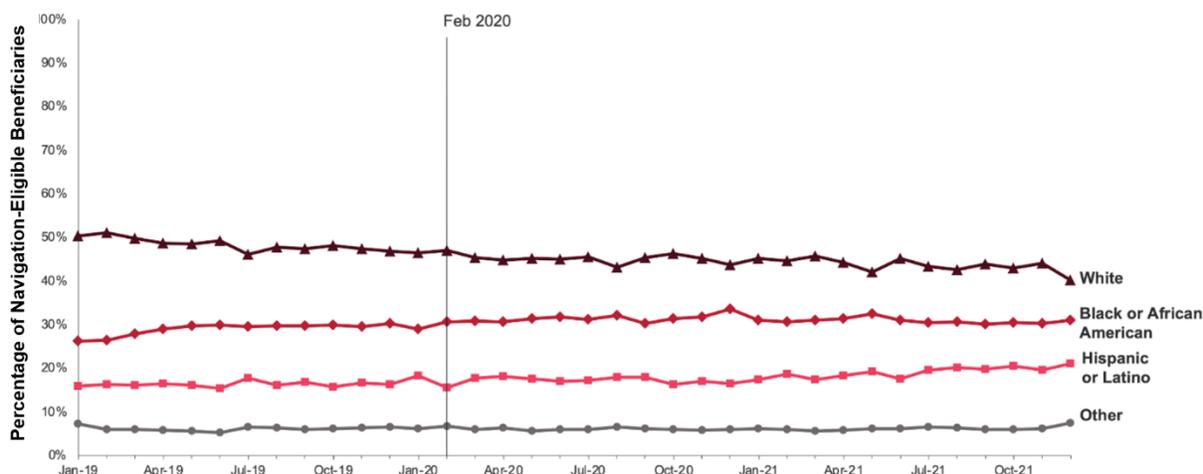
Other Notes: Navigation-eligible beneficiaries are community-dwelling beneficiaries with one or more core health-related social needs and two or more emergency department visits in the 12 months before screening. The vertical line indicates the beginning of the COVID-19 pandemic.

## COVID-19 Had Little Impact on the Racial or Ethnic Distribution of Navigation-Eligible Beneficiaries

To examine whether COVID-19 changed the racial or ethnic distribution of navigation-eligible beneficiaries, **Exhibit 2-7** shows the trends from January 2019 through December 2021, with the start of COVID-19 in February 2020 again shown as a vertical line. None of these trends by race or ethnicity showed any COVID-19 impact. The share of White navigation-eligible beneficiaries decreased steadily during the 3-year period, from about 50% in January 2019 to 40% in December 2021. The percentages of both Black and Hispanic/Latino navigation-eligible beneficiaries increased throughout the 3-year period (from about 25% to 30% and 15% to 20%, respectively). The percentage of eligible beneficiaries with another racial identity remained consistent throughout the period.

## Exhibit 2-7. Percentage of Navigation-Eligible Beneficiaries by Race or Ethnicity Over Time

The proportion of White beneficiaries decreased steadily during the 3-year period from January 2019 through December 2021, while the percentages of both Black and Hispanic/Latino eligible beneficiaries increased throughout this period.



Source: AHC screening, referral, and navigation data, January 2019–December 2021; Medicare and Medicaid Enrollment Files.

Definitions: AHC = Accountable Health Communities; ED = emergency department; HRSN = health-related social need.

Other Notes: Navigation-eligible beneficiaries are community-dwelling beneficiaries with one or more core HRSNs and two or more ED visits in the 12 months before screening. “Other” includes American Indian/Alaska Native, Asian, Hawaiian or Other Pacific Islander, and those who identify as multiple races.

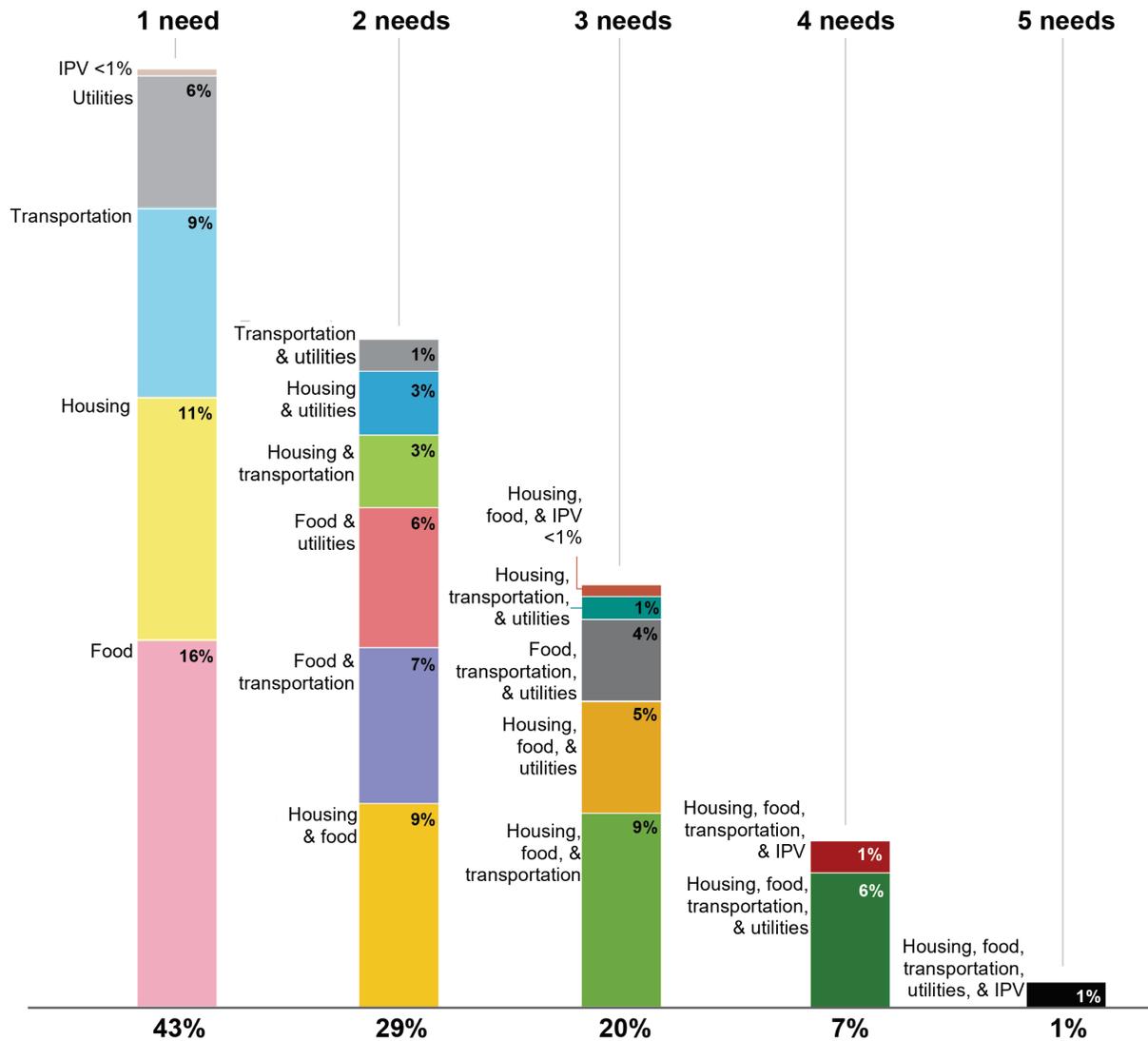
## More Than Half of Navigation-Eligible Beneficiaries Had Multiple HRSNs

Other research has shown that having multiple social and behavioral risk factors is related to poorer health outcomes and greater health care utilization (Caleyachetty et al., 2015; Echouffo-Tcheugui et al., 2016; Stein et al., 2010). If health effects are compounded by having multiple risk factors, beneficiaries with multiple HRSNs have the greatest potential to benefit from effective navigation and could show the greatest reduction in costs and utilization from participating in the AHC Model. The claims-based subpopulation analyses in Chapter 8 show greater reductions in expenditures and service use (specifically ED visits and inpatient admissions) for Medicaid beneficiaries in the Assistance Track with multiple needs compared to impacts for those with one need.

As noted, food, housing, transportation, and utilities were the most frequently reported core HRSNs among AHC-screened, navigation-eligible, and opted-in beneficiaries. As **Exhibit 2-8** shows, 43% of navigation-eligible beneficiaries had only one HRSN, and 57% reported more than one HRSN: 29% reported two HRSNs, 20% reported three HRSNs, 7% reported four HRSNs, and 1% reported all five HRSNs. These results are consistent with the findings presented in the [First Evaluation Report](#).

## Exhibit 2-8. Overlap Among Core Needs for Navigation-Eligible Beneficiaries

Nearly 60% of navigation-eligible beneficiaries reported having multiple needs.



Source: AHC screening and navigation data, May 2018–December 2021.

Definitions: IPV = interpersonal violence.

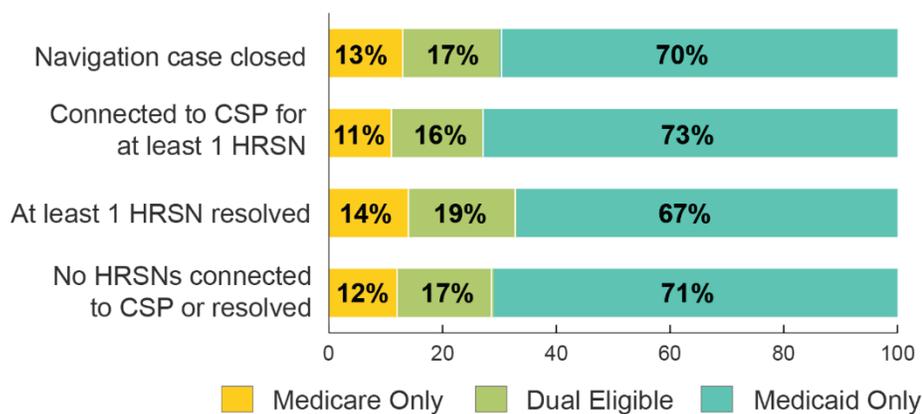
Other Notes: Navigation-eligible beneficiaries are community-dwelling beneficiaries with one or more core health-related social needs and two or more emergency department visits in the 12 months before screening.

## Navigation Outcomes Varied Slightly by Payer Type, Age, Race, and Education

As noted, low-income beneficiaries eligible for Medicaid only or dually eligible for Medicare and Medicaid were disproportionately more likely to meet AHC eligibility criteria. Among beneficiaries with a closed navigation case, where a closed navigation case is having received up to 12 months of navigation services, navigation outcomes varied only slightly by payer type (**Exhibit 2-9**). Beneficiaries with Medicaid coverage only comprised 70% of beneficiaries with a closed case, but only 67% of beneficiaries with at least one HRSN resolved. This finding indicates that low-income Medicaid-only beneficiaries were less likely than Medicare-only and dually eligible beneficiaries to have any resolved HRSNs. However, Medicaid-only beneficiaries were more likely than Medicare-only and dually eligible beneficiaries to be connected to a CSP for at least one HRSN.

### Exhibit 2-9. Navigation Outcomes Among Beneficiaries With a Closed Case by Payer Type

Navigation outcomes varied slightly by payer type.



Source: AHC screening and navigation data, May 2018–December 2021; Medicare enrollment files, 2015–2021; Medicaid enrollment files, 2015–2020.

Definitions: CSP = community service provider; HRSN = health-related social need.

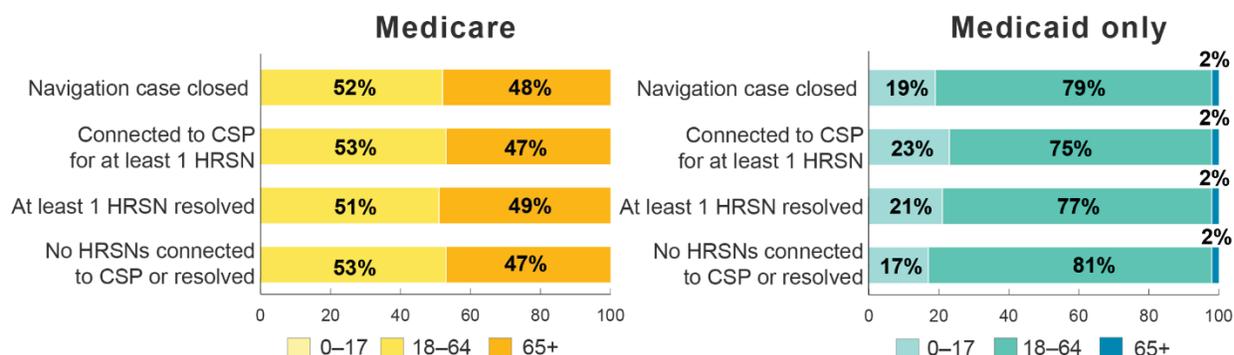
Other Notes: Insurance type was missing for <1% of closed navigation cases for beneficiaries. Connected to CSP for at least one HRSN means no HRSNs were resolved. Care New England and Delta Health Alliance were excluded from navigation outcomes due to voluntary termination from the model before 12 months of navigation for eligible beneficiaries was possible.

Navigation outcomes varied slightly by beneficiary demographic characteristics, which suggests the potential for inequities in navigation outcomes.

Among Medicaid-only beneficiaries with a closed navigation case, beneficiaries younger than 18 years of age were slightly more likely to be connected to a CSP for at least one HRSN and to have at least one HRSN resolved than beneficiaries 18 years of age or older (**Exhibit 2-10**). For Medicare beneficiaries, however, navigation outcomes varied very little by age.

## Exhibit 2-10. Navigation Outcomes Among Beneficiaries With a Closed Case by Age

Navigation outcomes did not vary by age for Medicare beneficiaries. Medicaid beneficiaries younger than 18 years of age were more likely than adults to be connected to a CSP and to have at least one HRSN resolved.



Source: AHC screening and navigation data, May 2018–December 2021; Medicare enrollment files, 2015–2021; Medicaid enrollment files, 2015–2020.

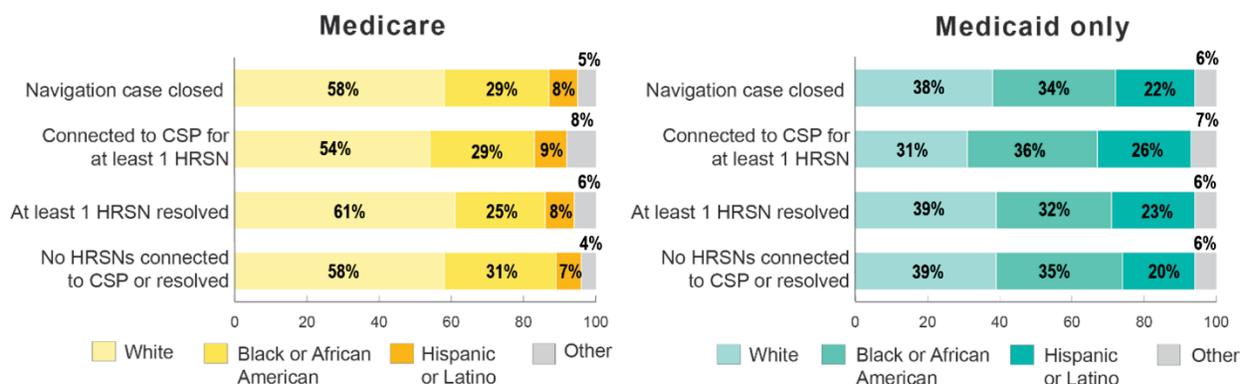
Definitions: CSP = community service provider; HRSN = health-related social need.

Other Notes: Medicare includes dually eligible beneficiaries. Medicaid beneficiaries identified as 65 years of age or older may be due to reporting error. Age was missing for 2% of closed navigation cases for beneficiaries with Medicare and <1% of closed navigation cases for beneficiaries with Medicaid. Connected to CSP for at least one HRSN means no HRSNs were resolved. Care New England and Delta Health Alliance were excluded from navigation outcomes due to voluntary termination from the model before 12 months of navigation for eligible beneficiaries was possible.

Among beneficiaries with a closed navigation case, for both Medicare and Medicaid, beneficiaries in racial and ethnic minority groups were somewhat more likely to be connected to a CSP for at least one HRSN than were White beneficiaries (see **Exhibit 2-11**). However, among beneficiaries with a closed navigation case, White Medicare beneficiaries were more likely to have at least one HRSN resolved than were beneficiaries in racial and ethnic minority groups. This difference suggests potential inequities by race or ethnicity in navigation outcomes among beneficiaries with a closed navigation case. Chapter 7 discusses navigation and HRSN resolution in more detail, and these potential inequities will be examined further in the Third Evaluation Report.

## Exhibit 2-11. Navigation Outcomes Among Beneficiaries With a Closed Case by Race or Ethnicity

Both Medicare and Medicaid beneficiaries in racial and ethnic minority groups were somewhat more likely to be connected to a CSP than were White beneficiaries but less likely to have an HRSN resolved.



Source: AHC screening and navigation data, May 2018–December 2021; Medicare enrollment files, 2015–2021; Medicaid enrollment files, 2015–2020.

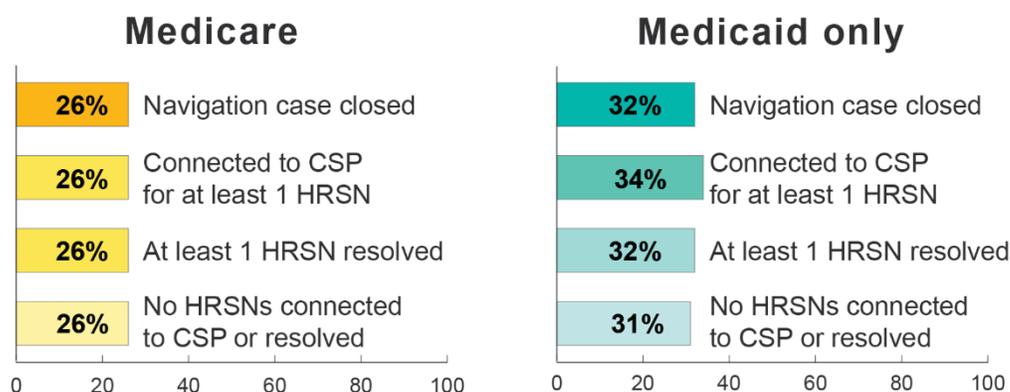
Definitions: CSP = community service provider; HRSN = health-related social need.

Other Notes: Medicare includes dually eligible beneficiaries. Race/ethnicity was missing for 4% of closed navigation cases for beneficiaries with Medicare and 16% of closed navigation cases for beneficiaries with Medicaid. Connected to CSP for at least one HRSN means no HRSNs were resolved. Care New England and Delta Health Alliance were excluded from navigation outcomes due to voluntary termination from the model before 12 months of navigation for eligible beneficiaries was possible.

Navigation outcomes among those beneficiaries with a closed navigation case were not associated with having less than a high school education or equivalent for Medicare beneficiaries but differed somewhat for Medicaid beneficiaries (**Exhibit 2-12**). Medicare beneficiaries with less than a high school education comprised equal shares of closed navigation cases and each of the navigation outcome categories (26%), indicating their likelihood of each navigation outcome did not differ from other Medicare beneficiaries. However, relative to their share of closed navigation cases (32%), Medicaid beneficiaries with less than a high school education or equivalent were proportionately more likely than other Medicaid beneficiaries to be connected to a CSP for at least one HRSN (34%) and proportionately less likely to have no HRSNs connected to a CSP and no HRSNs resolved (31%).

## Exhibit 2-12. Navigation Outcomes Among Beneficiaries With a Closed Case With Less Than a High School Education or Equivalent

Medicaid beneficiaries with less than a high school education or equivalent were slightly more likely to be connected to a CSP for at least one HRSN, but navigation outcomes did not vary for Medicare beneficiaries.



Source: AHC screening and navigation data, May 2018–December 2021; Medicare and Medicaid enrollment files.

Definitions: CSP = community service provider, HRSN = health-related social need.

Other Notes: Medicare includes dually eligible beneficiaries. Education was missing for 33% of closed navigation cases for beneficiaries with Medicare and 30% of closed navigation cases for beneficiaries with Medicaid. Connected to CSP for at least one HRSN means no HRSNs were resolved. Care New England and Delta Health Alliance were excluded from navigation outcomes due to voluntary termination from the model before 12 months of navigation for eligible beneficiaries was possible.

## Conclusions

This chapter examined the characteristics and HRSNs among AHC-screened, navigation-eligible, and navigation opted-in beneficiaries, finding that the AHC Model was successful at identifying people who were underserved within the broader communities served by the bridge organizations. Although low-income beneficiaries who were eligible for Medicaid only or dually eligible for Medicare and Medicaid continued to be more likely to meet eligibility criteria for navigation, the likelihood of opting into navigation did not vary by payer type. In examining key differences in the characteristics of beneficiaries served, Medicare and Medicaid beneficiaries who were in racial and ethnic minority groups were somewhat more likely to be connected to a CSP than were White beneficiaries but less likely to have an HRSN resolved. Medicaid beneficiaries who had less than a high school education or equivalent were slightly more likely to be connected to a CSP for at least one HRSN, but navigation outcomes did not vary for Medicare beneficiaries.

Nearly 60% of navigation-eligible beneficiaries reported having multiple needs, which is consistent with the [First Evaluation Report](#) findings. Food and housing continued to be the most prevalent needs among this population, both of which can significantly affect health and have been associated with higher rates of acute care. Immediately after the onset of the COVID-19 pandemic, housing and transportation needs declined, but food needs increased. High unemployment could reduce the need for transportation to a workplace and increase food insecurity, so this result is not surprising.

Providing navigation for beneficiaries with multiple needs is likely even more challenging than providing navigation for any single need; however, effective navigation for these beneficiaries may yield the greatest benefits. Chapter 8 delves into claims-based subpopulation analyses that find greater reductions in expenditures, ED visits, and inpatient admissions for Medicaid beneficiaries with multiple needs as compared to those beneficiaries with a

single need. Furthermore, resolution of one need may facilitate resolution of another need. We will continue to explore those possibilities in future reports.



## Chapter 3: Characteristics of Bridge Organizations and Clinical Partners

This chapter describes the AHC bridge organizations' and their CDSs' organizational characteristics and staffing practices for screening, referral, and navigation.

Within both the Assistance and Alignment Tracks, the structural and organizational characteristics of the bridge organizations and their CDS partners played a pivotal role in the approaches used to screen and navigate community-dwelling Medicare and Medicaid beneficiaries and then resolve their HRSNs. This chapter addresses Research Objective 1, which seeks to understand the context of the AHC Model, including an analysis of three research questions:

- What are the key structural and organizational characteristics of bridge organizations?
- What are the key structural and organizational characteristics of CDSs?
- What screening, referral, and navigation approaches did bridge organizations and CDSs implement?

Answering these questions is important to the AHC Model evaluation for two reasons: 1) to confirm that the bridge organizations and their CDS partners have the capacity to implement activities consistent with the AHC Model's

### Key Takeaways

- Both structural and organizational characteristics of the 29 bridge organizations and their CDS partners varied widely.
- Because more than half of the bridge organizations operated in non-health care settings, they partnered with either a single large health care organization or multiple smaller ones to meet the model's screening, referral, and navigation milestones.
- The majority of CDSs were primary care providers with one to four locations and participated in other CMS models.
- The diverse screening, referral, and navigation approaches bridge organizations and their CDS partners implemented reflected their different structural and organizational characteristics.

(continued)

intent and 2) to identify the characteristics of bridge organizations and CDSs that contribute to implementation success and model impacts.

The quantitative data for this chapter came from the Organizational Structural Survey that bridge organization leads completed between April and June 2020, the CDS survey that key CDS staff identified by the bridge organization leads completed between April and June 2020, and an additional CDS survey round completed in April and June 2021 by CDSs that did not respond to the original round. The results presented for bridge organizations are based on survey responses from 29 bridge organizations (though in some noted instances, this number is 28<sup>2</sup>). The results presented for CDSs are based on the responses of 236 (70%) of the 336 CDSs identified by bridge organization leads to participate in the CDS survey. See **Appendix E** for more information about the surveys, including frequencies for all survey items. Some data included in this chapter were reported in the [First Evaluation Report](#); this chapter updates the associated findings with more complete survey data. Finally, the qualitative data for this chapter came from semi-structured interviews conducted in January through March 2022 with AHC stakeholders at the 28 active bridge organizations.<sup>3</sup>

## Key Takeaways (continued)

- How funding for the screening and navigation workforce is integrated into existing operations may have important implications for sustainability.

## Structural Characteristics of Bridge Organizations

The AHC Model employed a collaborative, multisector structure in which bridge organizations coordinated with CDSs and CSPs, the state Medicaid agency, and other community stakeholders to connect Medicare and Medicaid beneficiaries to community resources. Within this structure, bridge organizations were responsible for developing and maintaining partner relationships, establishing standard operating procedures, developing the processes for sharing beneficiary data, and aligning the AHC Model with other initiatives. Notably, the Centers for Medicare & Medicaid Services (CMS) allowed a broad array of organizations to apply for AHC Model funding. We expected diverse awardee characteristics, including organization type (clinical or nonclinical), GTA, annual number of patients served directly by the bridge organization (for clinical bridge organizations), and the insurance mix of those patients, to influence model implementation and performance.

### The Majority of Clinical Bridge Organizations Were in the Assistance Track, While the Majority of Nonclinical Bridge Organizations Were in the Alignment Track

Almost half (14, or 48%) of the participating bridge organizations were hospitals, health systems, or integrated delivery systems that provide clinical services (**Exhibit 3-1**). Nine of these clinical bridge organizations (64.2%) were in the Assistance Track; the remaining five were in the Alignment Track. The 15 nonclinical bridge organizations consisted of independent nonprofits, universities, health care payers, health information technology companies, public health departments, and consulting firms. Critically, the non-health care settings in which the nonclinical bridge organizations operated did not have direct access to patients, thus requiring partnerships with health care organizations to meet the model's screening, referral, and navigation requirements. In contrast to the clinical

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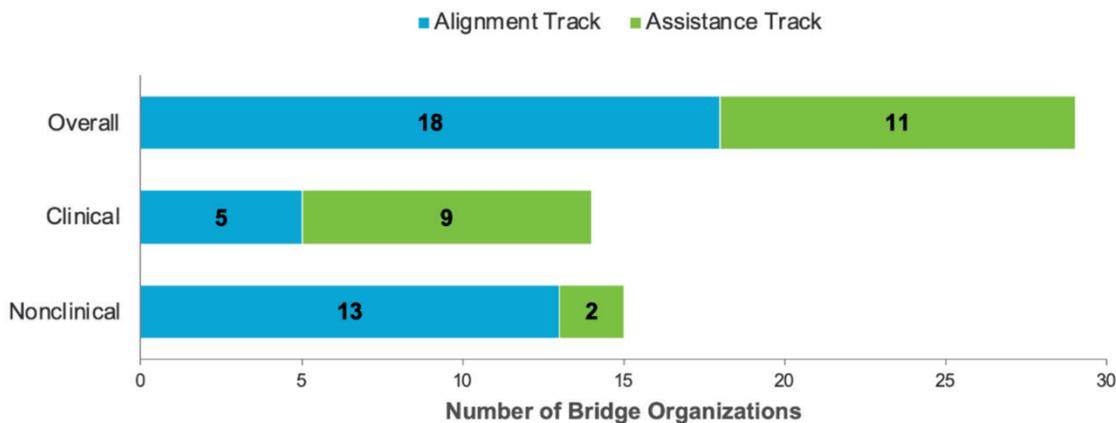
<sup>2</sup> Missing response item issues included instances where one or more of the bridge organizations did not respond to a given survey question and include one instance where a bridge organization exited the AHC Model between surveys.

<sup>3</sup> The 28 active bridge organizations that participated in the semi-structured interviews differed from the 29 bridge organizations that participated in the surveys because one bridge organization exited the AHC Model after the survey and before the semi-structured interviews were conducted.

bridge organizations, most of which participated in the Assistance Track, 13 of the 15 nonclinical bridge organizations (86%) were in the Alignment Track; only two were in the Assistance Track.

### Exhibit 3-1. Bridge Organization by Organization Type and Track

The majority of nonclinical bridge organizations (87%) were in the Alignment Track, while the majority of clinical bridge organizations (64%) were in the Assistance Track.



Sample Size: The total N was 29 bridge organizations (11 Assistance Track and 18 Alignment Track).

Source: Survey of Bridge Organizations.

Time Frame: April–June 2020.

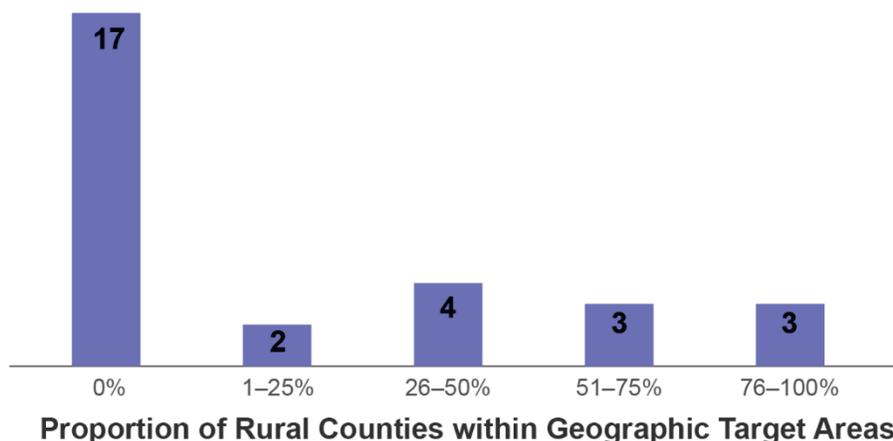
### Bridge Organizations Served Diverse Communities and Differed in the Extent to Which Their Geographic Target Areas Included Rural Areas

The bridge organizations served diverse communities across the United States and varying combinations of urban, suburban, and rural counties in their GTAs. While all 29 bridge organizations included urban or suburban counties, the extent to which the GTAs included rural counties differed (Exhibit 3-2). A majority of bridge organizations (17) had GTAs with no rural counties. The remaining 12 bridge organizations served at least two rural counties, and rural counties made up 50% or more of the GTAs of six of those bridge organizations. The varying urban/suburban/rural makeup of the GTAs was expected to have an impact on bridge organizations’ screening performance because all bridge organizations were held to the same intervention screening milestones.<sup>4</sup> Bridge organizations serving urban and suburban areas with larger populations may have been able to identify and screen enough eligible beneficiaries in relatively small GTAs, whereas bridge organizations predominantly serving rural areas may have needed considerably larger GTAs and more CDS partners to identify and screen enough beneficiaries to reach the intervention milestones.

<sup>4</sup> The Funding Opportunity Announcement for the AHC Model established bridge organization milestones that CMS monitored, including number of beneficiaries screened, referred, and navigated and number of beneficiaries who had their HRSNs resolved. CMS established these numbers to ensure the AHC Model would have sufficient sample size for the evaluation.

### Exhibit 3-2. Proportion of Rural Counties Within Bridge Organization GTAs

Six bridge organizations (21%) served predominantly rural areas.



Sample Size: The total N was 29 bridge organizations (11 Assistance Track and 18 Alignment Track).  
Source: Survey of Bridge Organizations.  
Time Frame: April–June 2020.

### Bridge Organizations Varied Considerably in the Number of Patients They Served Annually

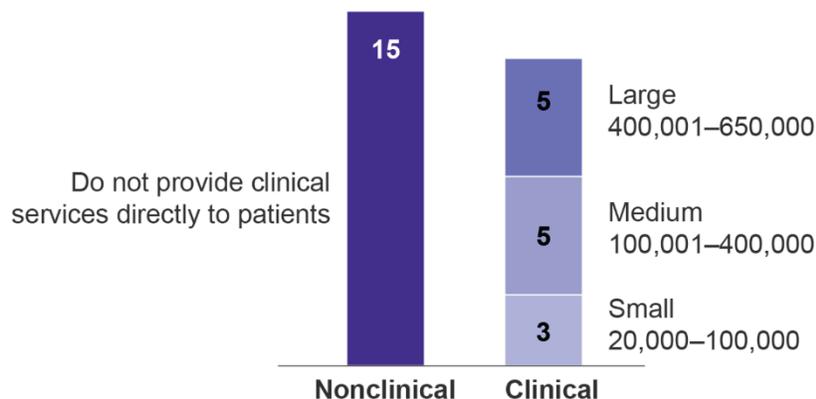
Clinical bridge organizations that served a large patient population may have had a sufficient pool of beneficiaries to screen from their own patient populations. Clinical bridge organizations that served fewer patients and nonclinical bridge organizations needed to draw from multiple pools of beneficiaries to meet screening milestones. **Exhibit 3-3** illustrates the variation in the number of patients served annually by the bridge organizations. As noted, 15 of the bridge organizations did not provide clinical services directly to patients, having to rely on CDSs external to their organization for screening. Among the 13 responding clinical bridge organizations,<sup>5</sup> three served small numbers of patients (20,000 to 100,000 annually), five served medium-sized patient populations (100,001 to 400,000 annually), and the remaining five served large patient populations (400,001 to 650,000 patients annually).

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<sup>5</sup> Thirteen of the 14 clinical bridge organizations responded to the survey question on the number of patients served annually.

### Exhibit 3-3. Number of Patients Served Annually by Bridge Organizations

About half of the bridge organizations did not provide clinical services directly to patients; clinical bridge organizations served a range of patient population sizes.



Sample Size: The total N was 28 bridge organizations (11 Assistance Track and 17 Alignment Track) due to 1 missing response.

Source: Survey of Bridge Organizations.

Time Frame: April–June 2020.

### The Composition of Patients by Insurance Type Varied Across Clinical Bridge Organizations

Insurance type was a key beneficiary eligibility criterion; patients who were uninsured or covered by private insurance were not eligible for navigation under the AHC Model. Bridge organizations serving larger proportions of Medicare and Medicaid beneficiaries were expected to have fewer challenges in meeting screening milestones. Bridge organizations serving higher proportions of privately insured or uninsured patients were expected to have more challenges in meeting screening milestones.

For nearly half of the 14 clinical bridge organizations, more than 50% of their patient populations were Medicare or Medicaid beneficiaries or both (**Exhibit 3-4**). The patient populations for five bridge organizations were evenly divided between Medicare and/or Medicaid beneficiaries and privately insured/uninsured patients. Three bridge organizations reported that more than 50% of their patient populations comprised patients covered by private insurance. None of the bridge organizations had more than 50% of their patients uninsured.

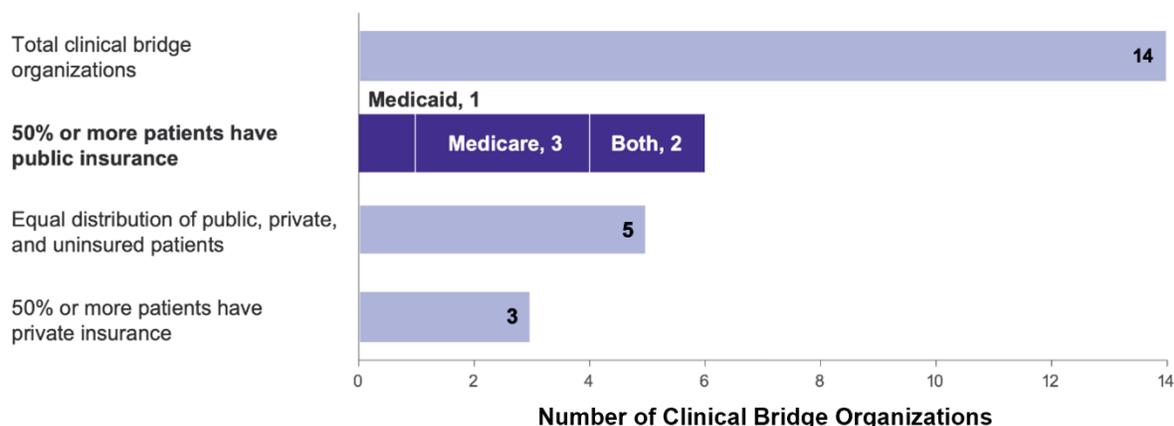
### Structural Characteristics of CDSs

Critical to the bridge organizations were the activities of their CDS partners, who engaged beneficiaries through screening and community referral summaries and connected eligible beneficiaries with navigators. Bridge organizations, in accordance with AHC Model requirements, were required to include at least one hospital (including EDs, labor and delivery units, and inpatient psychiatric units, if applicable), one primary care provider, and one behavioral health provider as CDS partners. Bridge organizations were also permitted (though not required) to partner with other types of organizations as a CDS partner, such as rehabilitation centers, home health agencies, and schools. Bridge organization leads reported a combined total of 808 CDSs, a figure that could be inflated as CDSs exited their partnerships with bridge organizations and were subsequently replaced by other CDSs and also influenced by differences in how bridge organization leads accounted for CDSs in their responses

(see **Appendix C** for further details). The CDS survey collected data on CDSs, including organizational type.<sup>6</sup> We expected that structural characteristics of the CDSs, including organization type, number of physical locations, and the extent to which CDSs participate in initiatives similar to the AHC Model, could influence bridge organizations' ability to meet screening requirements.

### Exhibit 3-4. Patients by Insurance Type Across Clinical Bridge Organizations

In nearly half of the clinical bridge organizations, 50% or more of their patient populations had public insurance (i.e., Medicare, Medicaid, or both).



Sample Size: The total N was 14 clinical bridge organizations.  
 Source: Survey of Bridge Organizations.  
 Time Frame: April–June 2020.

### CDSs Varied in Their Organizational Types

Primary care health providers or practices represented the majority (59%) of CDS organization types, followed by hospitals (39%); behavioral health service providers (21%); and other organizational types such as specialty practices, dental care practices, public health departments, and homeless shelters (12%) (**Exhibit 3-5**).<sup>7</sup> As described in the [First Evaluation Report](#), the CDS organization types may be an important factor in a bridge organization's ability to meet its screening milestones. Several bridge organizations reported the advantages of conducting screening, referral, and navigation in hospitals and emergency departments, compared to primary care practices and other settings. Two major advantages cited were 1) higher volumes of potentially eligible beneficiaries, particularly high-risk patients, visit hospitals and 2) hospital staff have more time to spend with potential beneficiaries (which reportedly increased the likelihood that eligible beneficiaries would accept navigation).

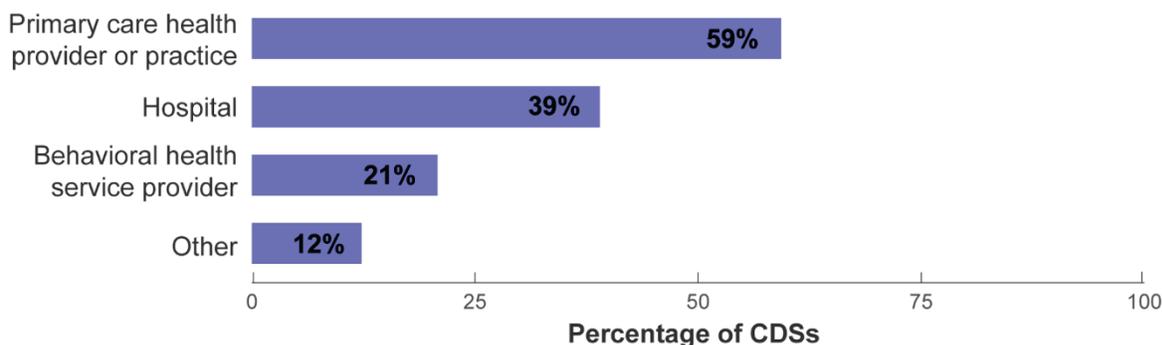
“While they're here in the emergency department, I feel like you're more likely to leave the room with a complete screening ... you have more playtime here in the emergency department than you would at the clinic.”  
 — Emergency Department Navigator

<sup>6</sup> Results for CDSs are based on the responses of 236 (or 70%) of the 336 CDSs identified by bridge organization leads to participate in the CDS survey.

<sup>7</sup> Answers do not sum to 100% because survey respondents could select multiple responses on the associated survey question.

### Exhibit 3-5. CDS Organization Types

Primary care health providers or practices represented the majority of CDS organization types.



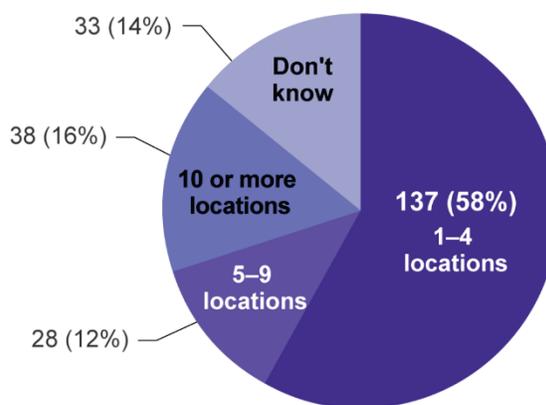
Sample Size: The total N was 236 clinical delivery site respondents.  
 Source: Survey of Bridge Organizations, Survey of Clinical Delivery Sites  
 Time Frame: April–June 2020 and April–June 2021.  
 Definitions: CDS = clinical delivery site.  
 Other Notes: Answers do not sum to 100% because survey respondents could select multiple responses on the associated survey question.

### Nearly Two-Thirds of CDSs Had Four or Fewer Locations

A majority (58%) of CDSs responding to the CDS survey reported their organizations had between one and four physical locations (**Exhibit 3-6**). CDSs with 10 or more locations were the second most prominent type (16%). Nearly 12% of responding CDSs had between five and nine physical locations. The number of CDS physical locations (and the associated patient volume for each location) may have influenced bridge organizations’ ability to meet screening milestones, but the expected direction of any relationship is not yet clear. On the one hand, CDSs with more physical locations could have had greater opportunity to reach the requisite volume of patients, whereas their counterparts with fewer locations could have had access to a smaller volume of patients. On the other hand, having more locations could make engaging with CDSs more complicated for bridge organizations, resulting in less screening uniformity. Future reports will clarify the relationship between number of CDS physical locations and AHC Model implementation and performance.

### Exhibit 3-6. Number of Physical Locations per CDS

A majority of CDSs had between one and four locations.



Sample Size: The total N was 236 clinical delivery site respondents.  
 Source: Survey of Bridge Organizations, Survey of Clinical Delivery Sites.  
 Time Frame: April–June 2020 and April–June 2021.

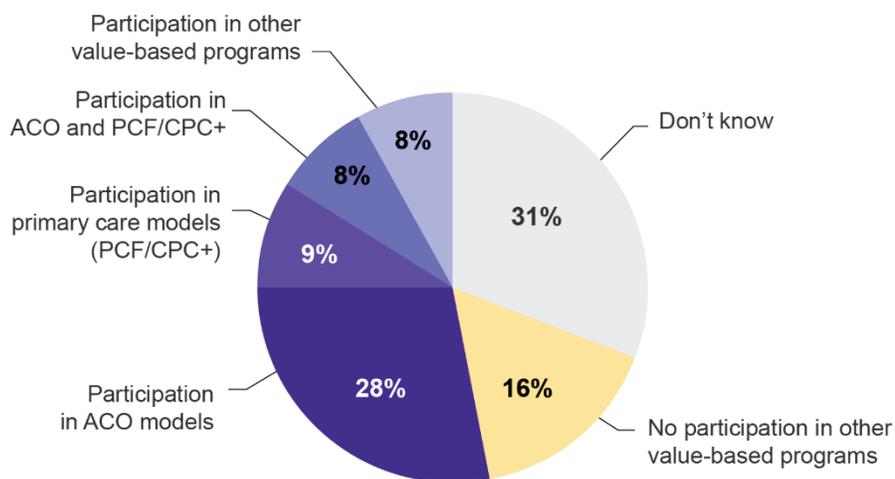
### A Majority of CDSs Participated in Other CMS Models

Accounting for CDSs’ participation in other initiatives similar to AHC is important for the evaluation because participation in overlapping, duplicative, or competing initiatives could influence AHC Model implementation and

performance, and not accounting for those other initiatives could cause us to incorrectly attribute any observed effects solely to the AHC Model. For instance, participation in an overlapping or competing initiative could positively or adversely affect implementation and subsequently introduce distortions (i.e., inaccuracies) in estimating the effects of the AHC Model, which may incorrectly suggest that the AHC Model is potentially more or less effective than it actually is. This is particularly likely for value-based initiatives and quality programs that reward health care providers with incentive payments for the quality of care they provide to Medicare beneficiaries. A number of value-based care initiatives and CMS quality programs have been implemented over the past decade and a half. Of these, two CMS models are likely to have the largest potential for confounding the AHC evaluation: Accountable Care Organization (ACO) models<sup>8</sup> and primary care models (Primary Care First/Comprehensive Primary Care Plus [PCF/CPC+]).<sup>9</sup> These are large-scale initiatives that aim to coordinate high-quality care for high-risk Medicare beneficiaries with chronic health conditions. More than half (53%) of CDSs reported they were engaged in one or more of these CMS models in addition to AHC (**Exhibit 3-7**). Among CDSs participating in the survey, 28% participated in an ACO model, 9% participated in one of the primary care models, and 8% participated in both initiatives. Another 8% participated in other value-based payment programs;<sup>10</sup> 31% said they did not know.

### Exhibit 3-7. CDS Participation in Other CMS Initiatives

Over half of CDSs reported engaging in one or more CMS models in addition to AHC.



Sample Size: The total N was 236 clinical delivery site respondents.  
 Source: Survey of Bridge Organizations, Survey of Clinical Delivery Sites.  
 Time Frame: April–June 2020 and April–June 2021.  
 Definitions: ACO = Accountable Care Organization; PCF/CPC+ = Primary Care First/Comprehensive Primary Care Plus.  
 Other Notes: Answers do not sum to 100% because survey respondents could select multiple responses on the associated survey question.

<sup>8</sup> The CDS survey asked respondents whether they participated in “Accountable Care Organizations” broadly but did not provide examples of specific ACO models.

<sup>9</sup> ACOs are groups of doctors, hospitals, and other health care providers who voluntarily work together to provide coordinated, high-quality care to Medicare beneficiaries. [PCF](#) is a voluntary alternative payment model that rewards value and quality in the delivery of advanced primary care. [CPC+](#), which ended December 31, 2021, prioritized clinician-patient relationships and enhancing care for patients with complex chronic needs.

<sup>10</sup> Other value-based payment programs included the Hospital Value-Based Purchasing Program, the Hospital Readmissions Reduction Program, and the Hospital-Acquired Condition Reduction Program.

# The Structural and Organizational Characteristics of Bridge Organizations and CDSs Influenced Screening, Referral, and Navigation Approaches

Bridge organizations and CDSs worked together to design and implement AHC screening, referral, and navigation processes to identify and resolve beneficiaries' HRSNs. Many bridge organizations and their CDSs were already screening beneficiaries for HRSNs and providing limited navigation services before participating in the AHC Model (see Chapter 3 of the [First Evaluation Report](#)). Participating in the AHC Model provided the opportunity for bridge organizations to expand and formalize their screening, referral, and navigation workflows. The diversity of the screening, referral, and navigation approaches bridge organizations implemented reflected the varied organizational characteristics of the bridge organizations and their CDS partners. Key variations in the bridge organizations' screening, referral, and navigation approaches pertained to the number of CDSs engaged in screening per bridge organization; the size and composition of screening, referral, and navigation staff; and the processes used to share screening and navigation data. These factors are discussed below. **Chapter 6** of this report discusses the implementation of screening and referral practices. **Chapter 7** discusses the implementation of navigation processes.

## The Number of CDSs Engaged in Screening Varied Considerably Across Bridge Organizations

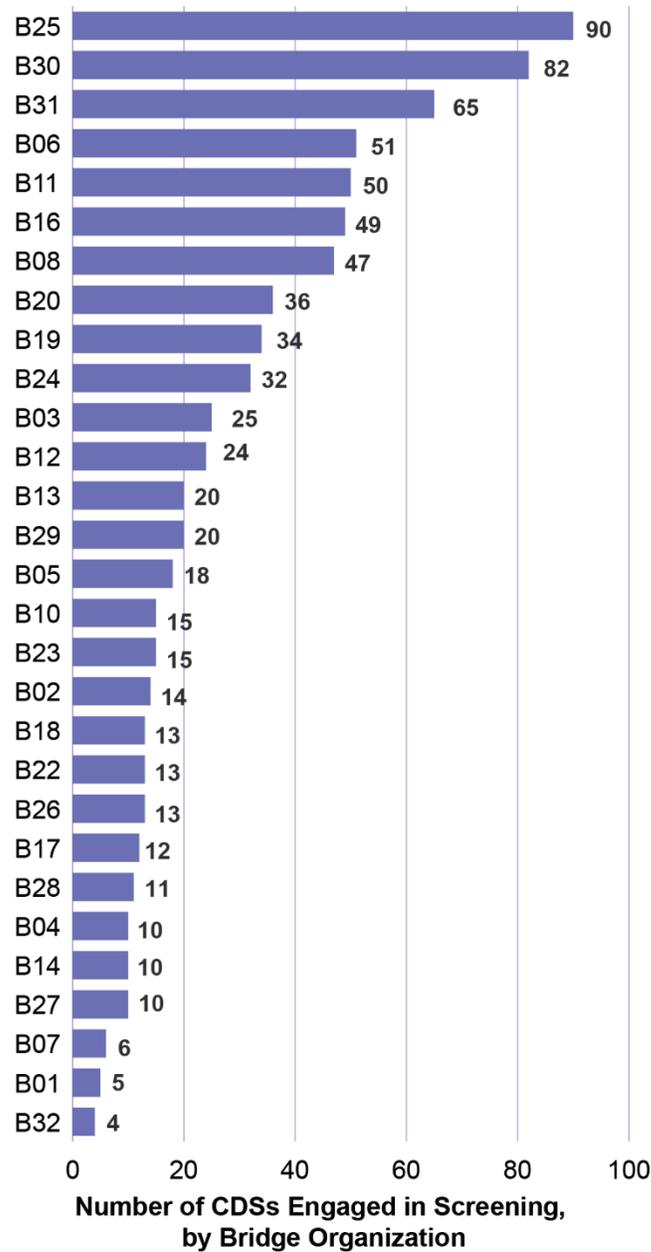
Within the AHC Model, CDSs were responsible for 1) conducting universal screening of Medicare and Medicaid beneficiaries to identify beneficiaries within the community who have one or more HRSNs and then 2) referring eligible beneficiaries for navigation services. The number of CDSs participating in screening varied widely across the bridge organizations, ranging from 4 to 90, with a mean of 27<sup>11</sup> (**Exhibit 3-8**). As with the number of CDS physical locations discussed earlier, the number of CDSs engaged in screening per bridge organization can be expected to influence the ability of the bridge organizations to meet screening requirements, though the direction of this relationship is not yet clear. On the one hand, a greater number of CDSs engaged in screening could have increased the ability of bridge organizations to reach a greater number of beneficiaries. On the other hand, a greater number of CDSs could have introduced greater complexity into the AHC Model, which could have hindered the ability of bridge organizations to meet screening requirements.

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<sup>11</sup> Note that there are important distinctions between the figures reported in **Exhibit 3-6** (CDS physical locations) and **Exhibit 3-8** (CDS participation in screening by bridge organization). The number of physical locations reported in **Exhibit 3-6** was measured at the CDS level and represents the number of physical locations for each CDS. In contrast, the number of CDSs engaged in screening was measured at the bridge organization level and represents the number of CDSs engaged in screening across each bridge organization.

### Exhibit 3-8. CDS Participation in Screening by Bridge Organization

The number of CDSs participating in screening ranged widely from 4 to 90, with a mean of 27 per bridge organization.



Sample Size: The total N was 29 bridge organizations (11 Assistance Track and 18 Alignment Track).

Source: AHC screening and navigation data.

Definitions: CDS = clinical delivery site.

Other Notes: Items on the vertical axis correspond to blind identifiers for the bridge organizations.

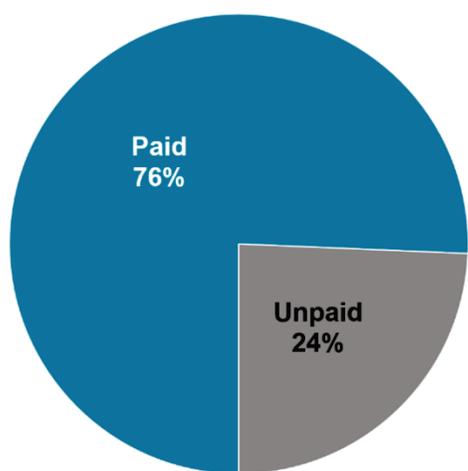
## CDSs Differed in the Size of Their Screening and Navigation Workforce but Used Similar Staffing Approaches

The size and composition of screening and navigation staff are likely to have a particularly important influence on model implementation and performance: larger staffs are able to screen higher volumes of patients and subsequently navigate more beneficiaries. CDSs indicated a mean of 23.5 individuals who conducted screening for HRSNs under the AHC Model, but a much smaller mean of only 4.7 individuals who served as patient navigators (see Exhibit 3-9).

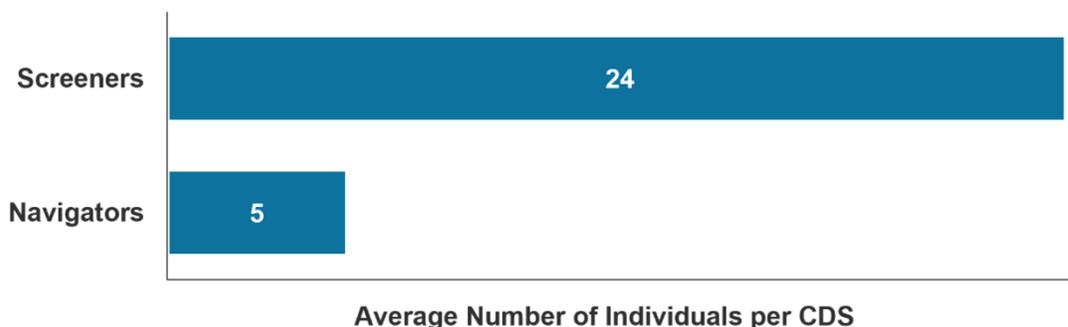
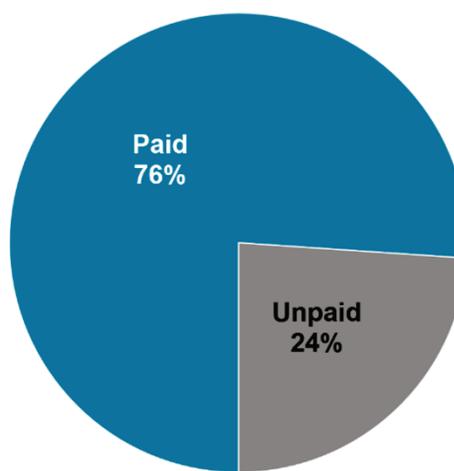
### Exhibit 3-9. Size and Type of Screening and Navigation Staff

Over three-quarters of screeners and navigators were in paid positions; on average, CDSs had five times more screeners than navigators.

#### Screeners



#### Navigators



Sample Size: n=189 responding CDSs for the percentage of paid/unpaid screeners; n=117 responding CDSs for the percentage of paid/unpaid navigators; n=209 responding CDSs for the average number of screeners and navigators per CDS.

Source: Survey of Clinical Delivery Sites.

Time Frame: April–June 2020 and April–June 2021.

Definitions: CDS = clinical delivery site.

Other Notes: Navigation-eligible beneficiaries are community-dwelling beneficiaries with one or more core health-related social needs and two or more emergency department visits in the 12 months before screening. The percentage navigation eligible is the percentage of beneficiaries screened by each bridge organization who are eligible for the AHC Model.

Unlike the differences in the relative size of screening and navigation staffs, bridge organizations and their CDSs reported similar compositions of paid versus volunteer staffs for both screening and navigation. The ways screening and navigation staffs were funded by the AHC Model have important implications for sustainability. If the financing of model activities was integrated into existing systems or if the use of volunteer staff was routinized, we expect that activities will be easier to sustain when model funding ends. For most CDSs (76%), individuals in paid positions conducted all screenings. CDSs with 1% to 24% of screening staff in unpaid positions was the next most frequent staffing approach (7%). Similarly, in the majority of CDSs (76%), individuals in paid positions conducted all patient navigation. CDSs with 1% to 24% of navigation staff in unpaid positions was the second most frequent staffing approach (5%).

## Bridge Organizations Used a Variety of Methods for Sharing Screening and Navigation Data

Employing effective and efficient methods for sharing screening and navigation data between bridge organizations and CDSs is critical for establishing a seamless feedback loop through which clinical staff are provided the requisite data on beneficiaries eligible for navigation and subsequently receive data on navigation case status and HRSN resolution. As illustrated in **Exhibit 3-10**, the primary methods bridge organizations reported using for both screening and navigation data with CDSs were digital methods such as email, spreadsheets, data dashboards, and data systems (13 bridge organizations, or 45%). The next most frequent method reported was electronic health records (EHRs) (21% for screening and 17% for navigation). Sharing screening and navigation data via a combination of digital and nondigital methods was the third most frequently used approach (10% and 7%, respectively). Notably, health information exchanges (HIEs), which allow clinical staff to securely share a beneficiary's medical information electronically, were used infrequently. One bridge organization<sup>12</sup> used an HIE to share screening data with its CDS partners; no bridge organization reported HIE use to share navigation data with CDSs.<sup>13</sup>



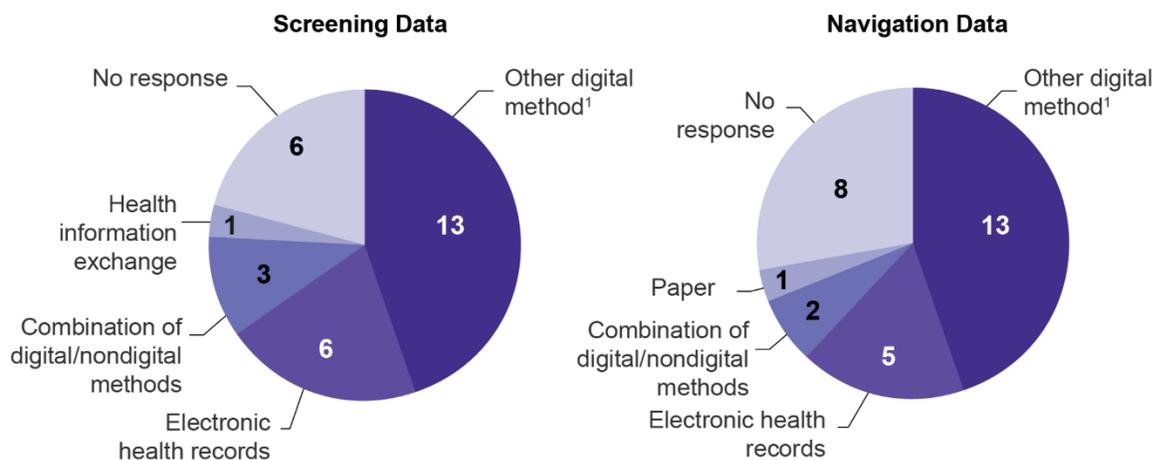
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<sup>12</sup> One bridge organization served as the statewide HIE and was able to incorporate this infrastructure into its AHC Model.

<sup>13</sup> Despite low levels of adoption of data exchange by bridge organizations and their CDS partners, HIEs and EHRs are still considered promising methods for sharing screening and navigation data. Application programming interfaces, which help applications to communicate with each other, offer an important technological solution that would allow HIEs and EHRs to share screening and navigation data in a more effective and efficient manner.

### Exhibit 3-10. Sharing of Screening and Navigation Data

Digital methods such as email, spreadsheets, data dashboards, and data systems were the most prominent method of sharing data, followed by electronic health records.



<sup>1</sup> Other digital method includes email, spreadsheets, data dashboards, and data systems.

Sample Size: The total N was 29 bridge organizations (11 Assistance Track and 18 Alignment Track).

Source: Survey of Clinical Delivery Sites, Survey of Bridge Organizations.

Time Frame: April–June 2020 and April–June 2021.

## Conclusions

This chapter addressed research questions pertaining to the key structural and organizational characteristics of bridge organizations and CDSs. Understanding the key structural and organizational characteristics of bridge organizations and CDSs can help provide insight into two primary issues: 1) whether the bridge organizations and their CDSs had the capacity to implement activities consistent with the intent of the AHC Model and 2) the staffing practices and data-sharing processes among bridge organization and CDSs that contributed to resolving the HRSNs of beneficiaries receiving navigation services.

The structural and organizational characteristics of the 29 bridge organizations differed by organization type and model track, the proportion of rural counties in GTAs, and (for clinical bridge organizations) the number of patients served annually and the patient distribution by insurance type. The characteristics of CDSs differed by organizational type, number of physical locations, and participation in other CMS initiatives. These differences in structural and organizational characteristics, in turn, influenced the screening, referral, and navigation approaches the bridge organizations and their CDS partners implemented, including the number of CDSs participating in screening; number of staff engaged in screening, referral, and navigation; and methods used to share screening and navigation data.

The diverse structural and organizational characteristics of the bridge organizations and their CDS partners demonstrated that the AHC Model operated in an array of organizations, settings, and locations. This diversity and the evaluation’s identification of the structural and organizational characteristics that influenced model implementation and performance will have important implications for subsequent efforts to replicate, implement, and scale the AHC Model.

This chapter’s descriptive findings on structural and organizational characteristics, which are expanded on in subsequent chapters of this report, will be explored further in future evaluation reports. **Chapters 6** (Screening and Referral for HRSNs) and **7** (Navigation and HRSN Resolution) of this report expand on the nature of the

partnerships and collaborations between bridge organizations and CDSs and their screening, referral, and navigation approaches. Subsequent evaluation reports will use a combination of descriptive analyses and a series of qualitative comparative analysis models to better understand how structural and organizational characteristics affect model implementation and performance. These additional analyses will provide opportunities to examine the characteristics and contextual conditions under which AHC interventions are more likely to succeed or fail and the implementation factors associated, or unassociated, with screening high numbers of beneficiaries for HRSNs, connecting navigation-eligible beneficiaries to CSPs, and contributing to the sustainability of the AHC Model the different bridge organizations implemented.



## Chapter 4: Community Capacity to Address HRSNs

Community capacity is critical to AHC Model success. Bridge organizations depend on their communities' resource availability to successfully connect beneficiaries to services that address their HRSNs.

This chapter defines community capacity and describes resource availability—a core component of community capacity—in AHC Model communities at baseline and during the early model years. The AHC Model Alignment Track, in particular, was designed to improve capacity among AHC Model communities as they assessed and addressed service gaps. This chapter addresses Research Objective 1, which seeks to understand the context of the AHC Model, including an analysis of the following research questions:

- What types of community resources are available to address HRSNs in the AHC Model communities within which bridge

### Key Takeaways

- AHC communities varied in their HRSN resource availability at the start of AHC Model implementation. The variability did not differ by track. The COVID-19 pandemic strained resource availability at most CSPs.
- When asked to reflect broadly, many bridge organization stakeholders reported resource gaps in available housing and transportation services in their communities, which limited the AHC Model's capacity to address HRSNs.
- Despite reported service gaps, more than half of CSPs reported they usually had enough staffing and funding to effectively deliver services for their existing clients and that capacity to meet HRSNs had increased since the start of the AHC Model.

organizations are located? How do the availability and quality of community resources vary across bridge organizations?

- How do the types and amounts of community resource availability affect delivery of the AHC interventions? How does availability of community resources evolve over the course of model implementation?

Qualitative data are from interviews with CSPs, beneficiaries, and bridge organization stakeholders conducted in 2020 and 2021. Quantitative data are from a survey of CSPs from July through November 2020. CSPs that bridge organizations reported referring beneficiaries to often or sometimes were surveyed, and 282 of the 687 (41%) that were sampled responded. To provide a fuller assessment of community capacity than could be derived from bridge organization data alone, we combined the data gathered from the bridge organizations with county-level measures of community services, social service expenditures, and community resources from various data sources between 2017 and 2018. (See **Appendix F** for detail.)

## Defining Community Capacity for the AHC Model

Researchers, community organizers, and sociologists have developed various definitions of community capacity (see Goodman et al., 1998; Hawe et al., 1997; and Labonte and Laverack, 2001, for examples). Although definitions vary, all agree that community capacity is complex, multidimensional, and dynamic. We reviewed existing definitions of community capacity from which we developed a definition and framework of community capacity specifically for the AHC Model (**Exhibit 4-1**). Existing literature and descriptions of the AHC Model from the Innovation Center informed the framework, and workgroup meetings among AHC evaluation subject matter experts helped refine it.

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***Definition of AHC community capacity:** AHC community capacity is the interplay between **resource availability** and the community's **ability to leverage those resources** to meet beneficiaries' health-related social needs.*

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AHC community capacity had two core components: 1) a community's HRSN resource availability and 2) the community's ability to leverage those resources to meet beneficiaries' HRSNs. Both of these two related but distinct core components, further defined below, were important for ensuring an AHC Model community had adequate community capacity to successfully address beneficiaries' HRSNs. On the one hand, a community may have had limited resources but may have excelled at mobilizing those resources to ensure it met beneficiaries' needs. On the other hand, a community may have had ample resources but struggled to effectively mobilize those resources, leaving beneficiaries' needs unaddressed. It is the interplay between these two concepts that defined an AHC Model community's capacity to address beneficiaries' HRSNs.

**Resource availability** in the AHC Model measured types, accessibility, appropriateness, and quality of community resources to address the five core AHC HRSNs. It comprised the yellow key elements shown in the outer circle of **Exhibit 4-1**: 1) number of CSPs participating in the AHC Model; 2) availability, meaning the number and type of CSPs in the community as a whole; 3) CSP resources, meaning organizational resources like staffing, funding, space, and access to technology and other resources CSPs have at their disposal to resolve HRSNs, like affordable housing units, transportation infrastructure, and food donations; 4) CSP accessibility, meaning geographic accessibility, eligibility requirements, language and cultural congruence, hours of operation; and 5) CSP appropriateness and quality, meaning how well CSPs and the services they offer align with the community's needs and service quality.

**Resource leverage** measured the community’s ability to use available resources to meet beneficiaries’ needs. It comprised the blue-green elements shown in the outer circle of **Exhibit 4-1**: 1) interagency coordination, collaboration, and network development; 2) resource reallocation to better align services; 3) mechanisms, process, and strategies to measure success and track referrals; 4) QI activities, like needs assessments and gaps analysis, to improve service coordination and planning; and 5) awareness of available services among CSPs, beneficiaries, and navigators. These were the core elements of the Alignment Track model activities.

**Exhibit 4-1. AHC Community Capacity Framework**

Community capacity comprises two parts: HRSN resource availability and the ability of a community to leverage available HRSN resources.



Definitions: CSP = community service provider; HRSN = health-related social need.  
 Other Notes: Definitions of the core components (inner circle) and key elements (outer circle) of community capacity are in Appendix E.

In the Assistance Track, community capacity was expected to function as a moderator of AHC Model impact, affecting the strength of the model’s expected effects. More specifically, communities with lower HRSN resource availability and/or lower ability to leverage available resources were likely to have had a harder time addressing beneficiaries’ HRSNs. Conversely, communities with higher HRSN community capacity, holding needs constant, were expected to have an easier time.

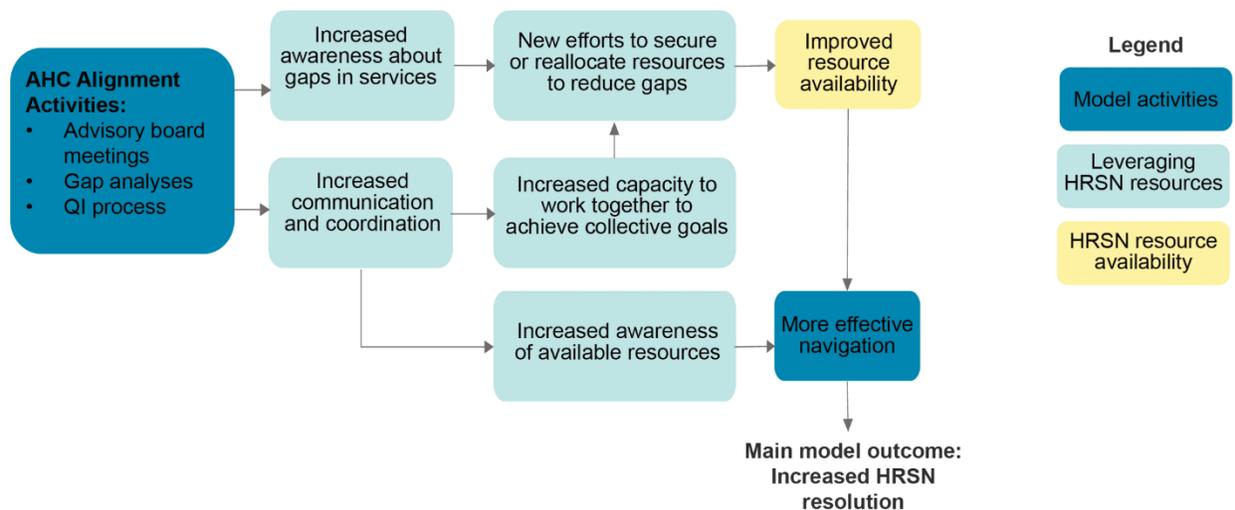
In the Alignment Track, community capacity was expected to function as a mediator of model impact by synergistically increasing the model’s expected effects. For example, Alignment Track activities (which include QI, data-driven decision making, and coordination of community resources [see **Chapter 5**]) directly increase a community’s ability to leverage available HRSN resources (CMS, 2021). In addition, these alignment activities may,

in some cases, lead to increased HRSN resource availability—through reallocation of resources or improvements in HRSN appropriateness or quality (as the theory of change pathway in **Exhibit 4-2** illustrates). Any such effect will be indirect, however, because the AHC Model does not provide funding or other physical resources to increase HRSN resource availability.

Subsequent sections of this chapter focus on the HRSN resource availability component of community capacity.

### Exhibit 4-2. Impacts of Alignment Activities on Community Capacity

Alignment activities may indirectly improve resource availability.



Definitions: HRSN = health-related social need; QI = quality improvement.

Other Notes: Subsequent sections of this chapter focus on the HRSN resource availability component of community capacity. Chapter 5 addresses the ability to leverage HRSN resources, which is closely linked to alignment activities. Chapter 7 addresses success in tracking referrals, which is closely linked to leveraging HRSN resources.

## Resource Availability Varied Across AHC Communities

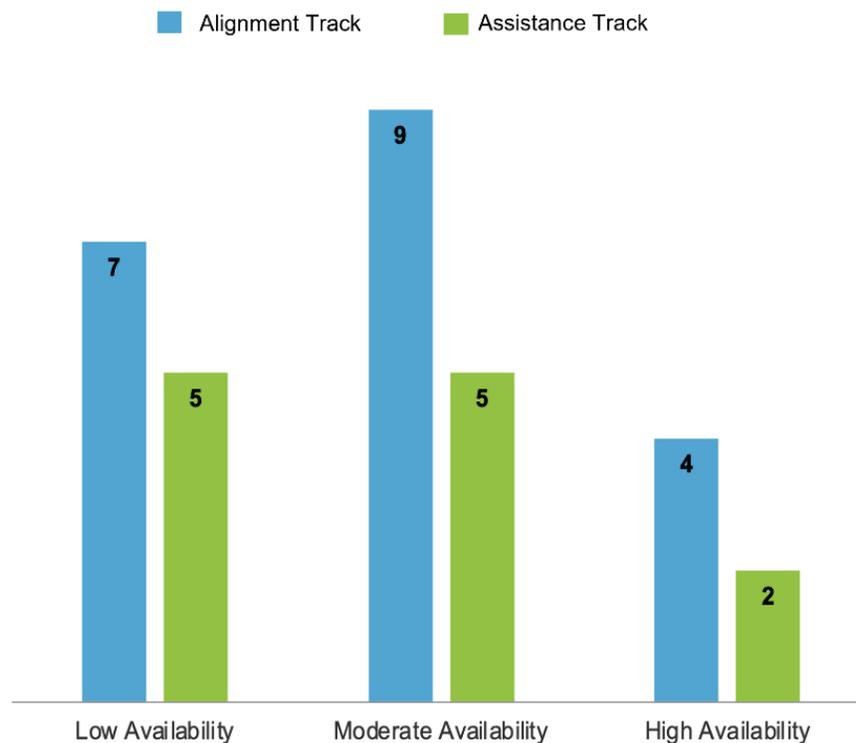
No existing data sources fully captured HRSN resource availability. Three factors made measuring resource availability difficult: 1) most existing data sources looked at only one type of resource (e.g., housing or food); 2) resource availability was tightly linked to local context, meaning that some measures (e.g., access to public transportation or vehicle ownership) were more meaningful in certain geographic areas than others; and 3) resources for some social needs, like utilities assistance and interpersonal violence, were often embedded in other services. Although any estimate of a community’s resource availability was likely incomplete, we constructed two measures that gave some idea of the range of CSPs that bridge organizations potentially engaged to resolve beneficiaries’ HRSNs (see next section). We then described how the resources available in the community the bridge organization served did not always match that community’s resource needs (see **Exhibit 4-5** later in this chapter).

## In Both Tracks, Baseline Resource Availability in AHC Model Communities Was Typically Low or Moderate

To estimate overall HRSN resource availability in all AHC Model communities at baseline, we used data from the Urban Institute National Center for Charitable Statistics (NCCS)<sup>14</sup> 2017 Core Files, which lists all active, reporting tax-exempt (nonprofit) organizations filing a Form 990, 990-EZ, or 990-PF with the Internal Revenue Service in a given year (see **Appendix E** for detail). These data allowed us to approximate the resource availability key elements of “CSP availability” and “CSP accessibility,” as described in **Exhibit 4-1**. We then categorized baseline community resource availability across AHC Model communities as high (more than 30 social service organizations per 100,000 people), moderate (21–30 social service organizations per 100,000 people), or low (10–20 social service organizations per 100,000 people) (**Exhibit 4-3**). In the Alignment Track, 16 out of 20 bridge organizations had low or moderate resource availability. In the Assistance Track, 10 out of 12 had low to moderate resource availability.

### Exhibit 4-3. Resource Availability at Baseline

The level of overall social service resource availability in AHC Model communities at baseline tended to be moderate or low.



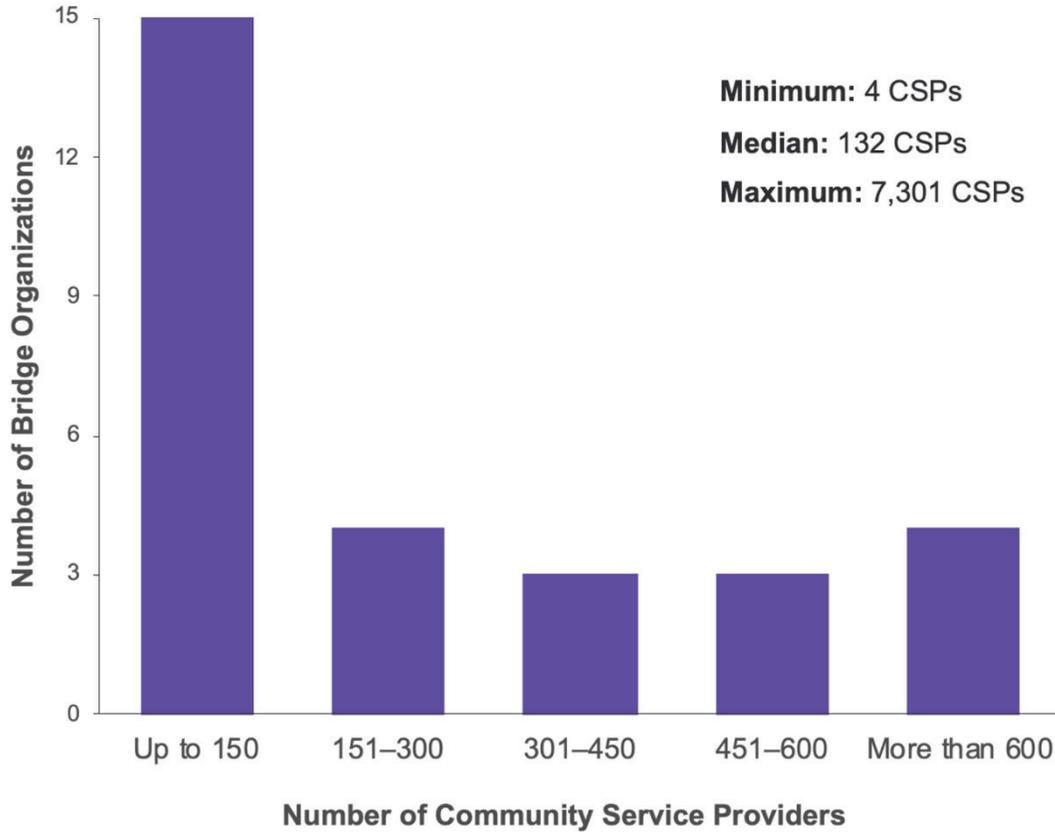
Other Notes: Data on social service organizations were from the Urban Institute National Center for Charitable Statistics 2017 Core Files, and 2018 county population estimates were from the Area Health Resources Files. Low = 10–20 social service providers per 100,000 people; Moderate = 21–30 social service providers per 100,000 people; High = More than 30 social service providers per 100,000 people.

<sup>14</sup> <https://nccs.urban.org/>

The lists bridge organizations developed of CSPs in their local communities to which they could refer beneficiaries to address HRSNs, known as community resource inventories (CRIs), varied widely by bridge organization—from a maximum of 7,301 CSPs to a low of only four CSPs (**Exhibit 4-4**). Half of the 32 bridge organizations’ CRIs listed fewer than 150 organizations. Four bridge organizations’ CRIs listed more than 600 CSPs.

**Exhibit 4-4. Number of CSPs on Bridge Organization CRIs**

Half of bridge organizations listed 150 or fewer CSPs on their CRIs.



Source: Bridge organizations' Community Resource Inventories, collected in 2019.  
Definitions: CSP = community service provider.

We caution against drawing any firm conclusions from the length of CRI lists, however, for two reasons. First, the number of CSPs listed in these CRIs was not highly correlated with the number of identified social service organizations in each bridge organization’s GTA identified in the NCCS data (not shown). Second, qualitative examination of the CRIs determined that data quality varied across bridge organizations. Some CRIs contained detailed entries listing an organization’s comprehensive services, hours of operation, contact name, and full contact information, while others had substantial amounts of missing information. CRI development and updating were required of bridge organizations for AHC Model participation, but the extent of information and organizations included in each CRI, how the CRI was used, and how the CRI was updated varied substantially (see **Chapters 6 and 7**).

**Community Resource Availability Was Not Always Matched to Community Needs**

Measures of resource availability that do not account for population size or need should be interpreted cautiously because they account for only the supply of resources and services without accounting for need among the

underlying population. If resources and services are equitably distributed, geographic areas with more people in need will also have more resources and services to meet those needs.

To assess the comparability issue, we looked at resource availability, measured as the number of social service organizations per 100,000 people in the bridge organization’s GTA, compared to a broad marker of need, the Social Deprivation Index. This composite measure of need comprises multiple community sociodemographic characteristics, including poverty, education, employment, housing, and transportation (see Butler et al., 2013; Robert Graham Center, n.d.). Scores range from 1 to 100, with higher scores indicating greater deprivation and higher need for social services. Bridge organizations serving communities with higher deprivation scores were likely to need more available resources to address HRSNs because their communities had higher proportions of people in need of services. When we examined Social Deprivation Index scores for counties reached by the AHC Model (AHC counties) compared to those not reached by the model (non-AHC counties), we found that AHC counties had a higher average social deprivation score than non-AHC counties—56.2 compared to 48.8. This statistically significant difference suggests that the AHC Model did indeed reach higher-need counties.

We measured aggregated county-level Social Deprivation Index scores for the GTAs served by each bridge organization (marker of need) against the number of social service organizations per 100,000 people in the bridge organization’s GTA (marker of resource availability).<sup>15</sup> **Exhibit 4-5**, which plots these values in quadrants, shows where each bridge organization lies on the two measures. Sites in the top-right and bottom-left quadrants are sites where need and resource availability loosely matched each other. In contrast, sites in the top-left quadrant had



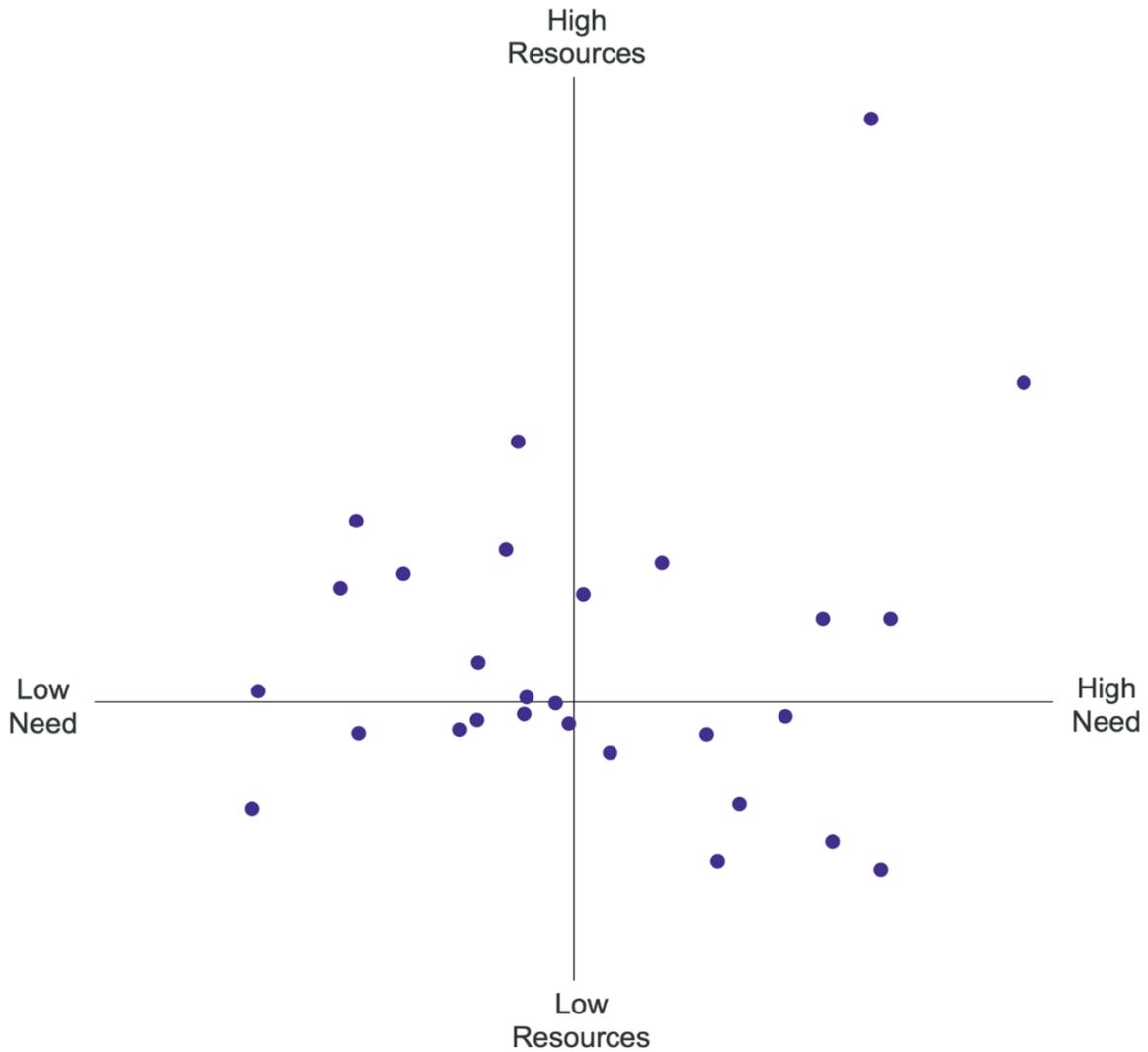
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<sup>15</sup> For similar measures of social service availability, see Dorch et al. (2010), Kim and Xiang (2021), Kuhlthau (2011), Snow et al. (2015).

low needs but high resource availability; sites in the bottom-right quadrant had high needs but low resource availability. The seven sites in the bottom-right quadrant had the most need and the fewest resources and were thus locations where the AHC Model was expected to generate less positive impacts. These communities may have had better success in models like AHC if given additional funding to support resource availability in addition to navigation.

**Exhibit 4-5. Resource Needs Compared to Resource Availability**

Some bridge organizations serving high-need areas had low resource availability.



Methods: AHC-related social service organizations were determined using North American Industry Classification System codes (see Appendix E). Average Social Deprivation Index score and number of social service provider organizations were assessed for all counties within each bridge organization’s Geographic Target Area. The Social Deprivation Index score and total number of organizations were then standardized by the population living in counties within the Geographic Target Area.  
 Source: Appendix E.

# Stakeholders Reported HRSN Resource Availability Was Not High Enough to Successfully Address Beneficiaries’ Needs

In interviews conducted from 2020 to 2021, bridge organizations in both tracks shared that their communities lacked sufficient resources to fully address beneficiaries’ HRSNs. Bridge organizations stressed that resource availability is more critical to resolving beneficiaries’ needs than better leveraging of available resources. Simply put, bridge organizations felt that improved resource leveraging could only do so much to increase resource availability in communities with insufficient resources.

“... some of the [CSPs] initially were sort of worried ... because they felt that once we start screening patients and sending them all over the community, they would potentially run out of resources.”  
 — Bridge Organization Lead

Bridge organizations also reported that CSPs were sometimes hesitant to partner with them for the AHC Model because they were concerned about increases in client volume without funding or other support to serve new clients.

## Many Bridge Organization Stakeholders Reported Gaps in Housing and Transportation Services

The 2020 CSP survey, which was completed by 282 CSPs (41%) of a total of 687 CSPs that bridge organizations reported referring beneficiaries to often or sometimes, covered services to address AHC’s five core HRSNs (housing, food, transportation, utilities assistance, and interpersonal violence services) and mental health services. Mental health services were included because in qualitative interviews CSPs described gaps in mental health services in AHC Model communities and emphasized how unaddressed mental health needs hinder beneficiaries from accessing other needed services.

Overall, 66% of surveyed CSPs provided food assistance, the most common need identified in AHC screenings; 58% provided housing assistance; 40% and 46% provided transportation and utilities assistance, respectively (**Exhibit 4-6**). Only 18% and 25% of CSPs provided interpersonal violence counseling/support services and mental health services, respectively. The distribution of CSPs providing each type of service was similar across Assistance and Alignment Tracks.

### Exhibit 4-6. Proportion of CSPs Delivering Services to Address Five HRSNs and Mental Health (2020 CSP Survey)

Assistance with food and housing were the most commonly offered services by CSPs.

Service	Overall	Assistance Track	Alignment Track
Food assistance	66%	67%	65%
Housing assistance	58%	53%	62%
Transportation assistance	43%	43%	44%
Assistance for utilities	40%	42%	39%
Interpersonal violence counseling or support	18%	19%	17%
Mental health services	25%	26%	23%

Source: Data from AHC Community Service Provider Survey Round 1 (July–November 2020).  
 Other Notes: 78% of CSPs provided multiple types of services, so percentages do not sum to 100.

Although the percentage of CSPs in the CSP survey that provided housing services (defined as providing help with finding housing; providing help with improving housing quality; permanent, transitional, or temporary housing; or shelter services or emergency housing) was relatively high, data from qualitative interviews found that affordable housing itself was often lacking in AHC Model communities, which coincided with findings reported in the [First](#)

[Evaluation Report](#). A common gap identified in interviews included lack of affordable housing units. Additionally, respondents highlighted that eligibility criteria and application processes for subsidized housing were restrictive, and wait-lists for subsidized housing units were long.

“You’ve got 600 people on a waiting list who are wanting to get into housing, and you have 50 units across the entire county that become open every 30 days. So, it’s just a trickle of putting people that are homeless or chronically homeless into housing.”

— CSP Representative

Lack of transportation hindered access to other social services, as described in the [First Evaluation Report](#). Without sufficient transportation, a beneficiary may not be able to access services, such as getting to housing intake appointments or accessing food pantries. Beneficiaries living in urban areas may have access to public transportation, and many communities offer subsidized transportation passes. But one elderly beneficiary shared that her income was too high for her to qualify for subsidized fares, and many geographic areas lack reliable public transportation systems altogether. Available transportation services in both urban and less densely populated areas may include specialized transportation options, such as vans that transport patients to and from medical appointments. However, in interviews beneficiaries reported that specialized transportation services often leave general transportation issues unaddressed. One CSP representative envisioned an ideal local bus route that “would do stops at a lot of these community service providers,” so individuals could conveniently access government and private-sector resources. Transportation issues are particularly salient in rural areas. One CSP leader expressed, “We’re in a rural area, so ... there’s transportation issues. Whether or not it shows up as a need ... it’s a reality. Sometimes it does take 40 minutes or an hour to go to the place that you may need to go.”

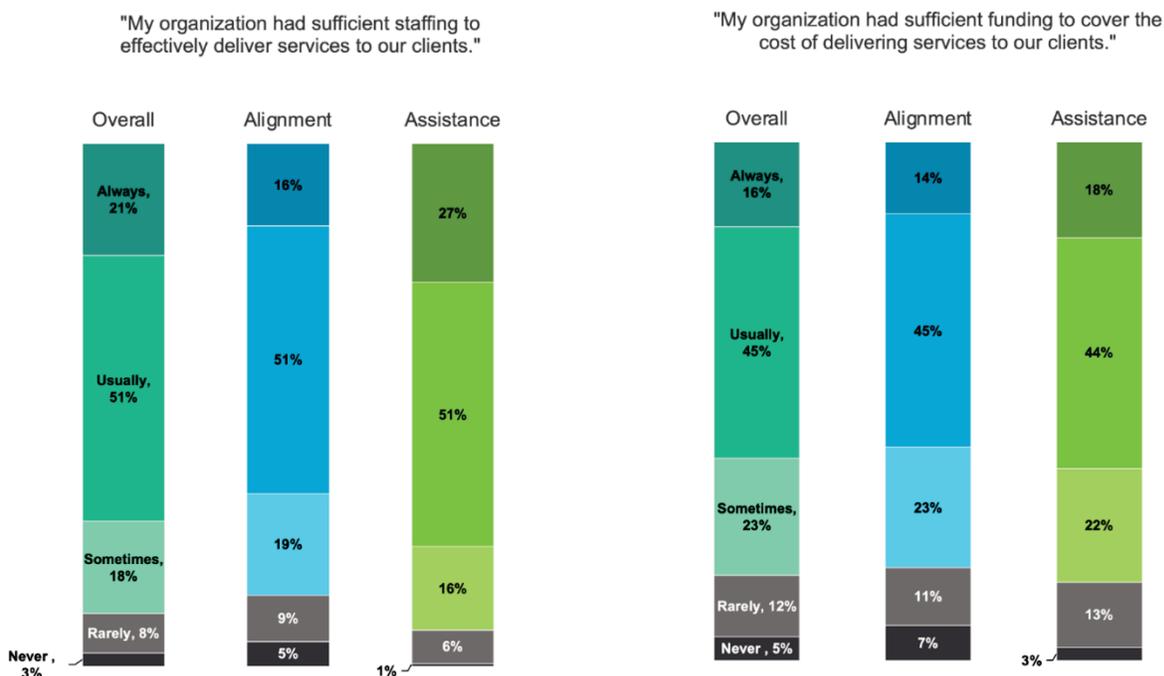
Another common barrier to resolving HRSNs was the lack of mental health services. Access to mental health services was tightly linked to health outcomes (Ohrnberger et al., 2017) and the ability to access social services for HRSNs (Forchuk et al., 2016; Hatem et al., 2020; Sederer, 2016). Gaps in mental health services were cited by bridge organizations and CSPs in many AHC Model communities. When asked if there were enough community services to address the five core HRSNs, one interviewed CSP illustrated the link between addressing mental health needs and addressing HRSNs: “No, with like a capital N-O, exclamation point, exclamation point ... the challenge that we run into is we don’t have enough mental health providers and that makes it difficult to address the core HRSNs.”

## CSPs Typically Reported Having Sufficient Resources to Serve Eligible Clients

Although bridge organization stakeholders frequently lacked sufficient resource availability for certain needs, CSP survey data showed that CSPs themselves often reported having adequate resources (staffing, funding, and partnerships with other organizations) to provide services to their existing clients. For example, 72% of surveyed CSPs said they always or usually had sufficient staffing to effectively deliver services to their existing client base ([Exhibit 4-7](#)); 61% reported always or usually having sufficient funding to cover their service delivery costs. Among CSPs who always had sufficient staffing to effectively deliver services, significantly more Assistance Track than Alignment Track CSPs were in the always have sufficient staffing category (27% versus 16%).

## Exhibit 4-7. Staffing and Funding Sufficiency at CSPs

Most CSPs reported always or usually having sufficient resources (staffing and funding) to effectively deliver services.



Methods: Because the survey was fielded during the COVID-19 pandemic, we asked respondents to think about the entire year, rather than the portion of the year affected by the pandemic. The survey question asked, "Please indicate how often you felt your organization had the following resources in the past 12 months. Please do your best to think about the year as a whole even though COVID-19 may have caused unusual impacts in the last few months."

Source: AHC Community Service Provider Survey Round 1 (July–November 2020).

The predominance of the "usually" adequate staffing and funding categories may reflect eligibility constraints CSPs were forced to impose. For example, they may have limited the size of their client population to fit within their resources because resources were inadequate to meet the needs of all potential clients who could benefit from the service. Data from CSP interviews, for example, showed that reported resource availability varied depending on the characteristics of those seeking services. Factors such as age, income level, disability status, sex, whether one has dependent children, or language preference dictated the services for which a client might qualify. Some AHC beneficiaries said they were not eligible for services, despite their demonstrated needs. One CSP echoed this sentiment: "We have lots of seniors in our community who are here with very little support systems in place and cannot qualify for the public programs due to making a little too much money, or they don't have the correct Medicaid, or they have a wrong insurance, or they live just outside the geography that's served by those programs." Eligibility requirements and limits also created gaps in services. In one example, a bridge organization noted having no transportation resources for individuals younger than age 55 years, but several options for those older than age 55 years.

Beneficiaries sometimes had difficulty accessing services even when CSPs had adequate resources to provide those services. Factors limiting resource accessibility were cumbersome application processes or CSPs not responding to telephone inquiries. Some beneficiaries reported high paperwork burdens or confusing application processes that impeded beneficiaries' ability to access existing services. Some beneficiaries also reported CSPs not answering the phone or not responding to requests. One CSP reported challenges for beneficiaries who work and have limited

time to get to a CSP with limited weekday hours: “If you work and they [the CSP] are not open after 5:00 ... you’re stuck.”

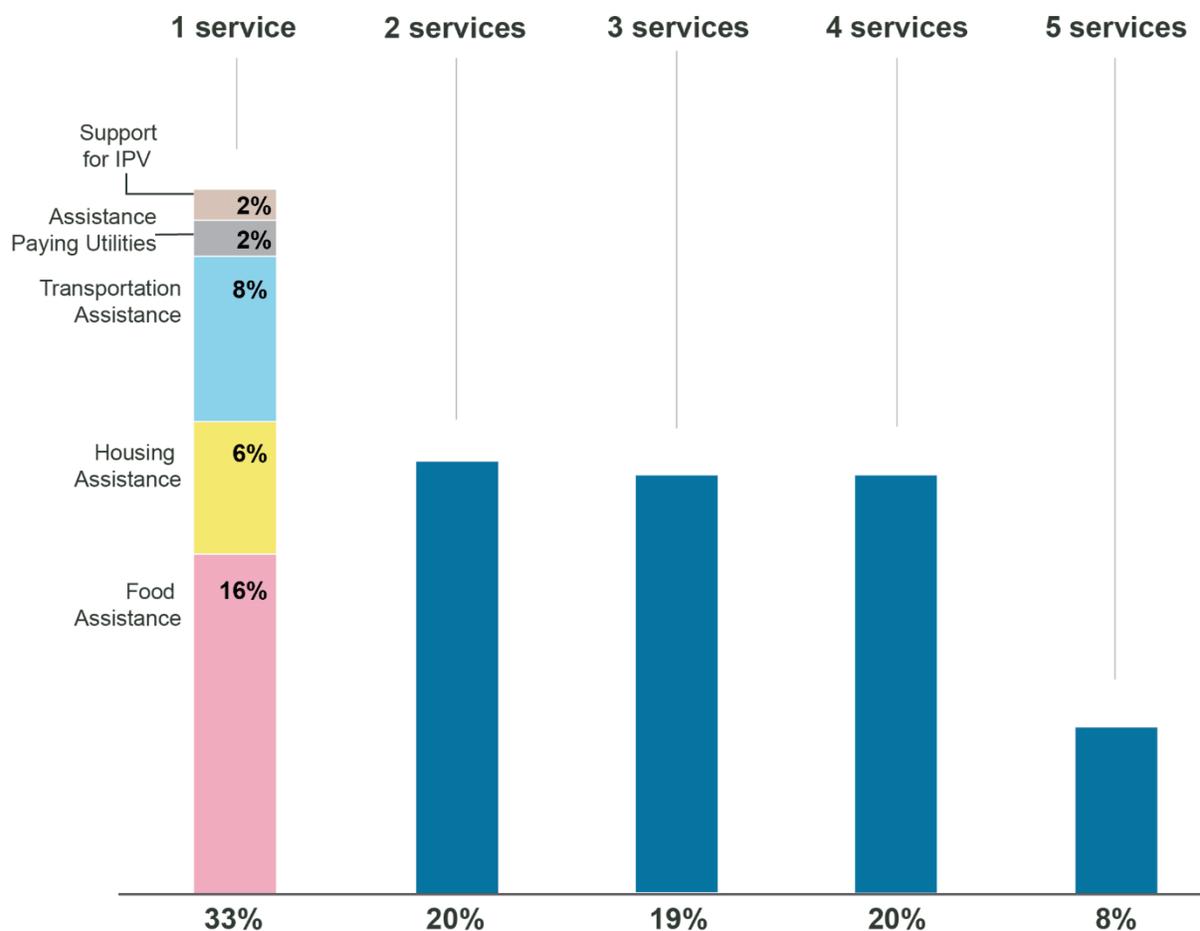
## Most CSPs Provided Services for Multiple Needs, Which Corresponds to the Multiple, Intersecting Beneficiary Needs

Beneficiaries often have had multiple, overlapping HRSNs (see **Chapter 2**). CSP survey data showed that 67% of CSPs offered more than one type of service (**Exhibit 4-8**), indicating a single organization may be able to address many (perhaps all) of the HRSNs a beneficiary is experiencing. Addressing more than one need, however, depends on congruence among a beneficiary’s needs, the specific services an organization provides, the ability of a beneficiary to access those services, and program eligibility requirements. There were no significant differences between Assistance and Alignment Track CSPs with respect to the proportion that offered one or more than one type of service.



### Exhibit 4-8. CSPs That Provided One Versus More than One Type of Service

Many CSPs provided multiple types of services.



Source: AHC Community Service Provider Survey Round 1 (July–November 2020).  
 Definitions: IPV = interpersonal violence.

### CSPs Reported That Capacity to Meet HRSNs Had Increased Since the Start of the AHC Model

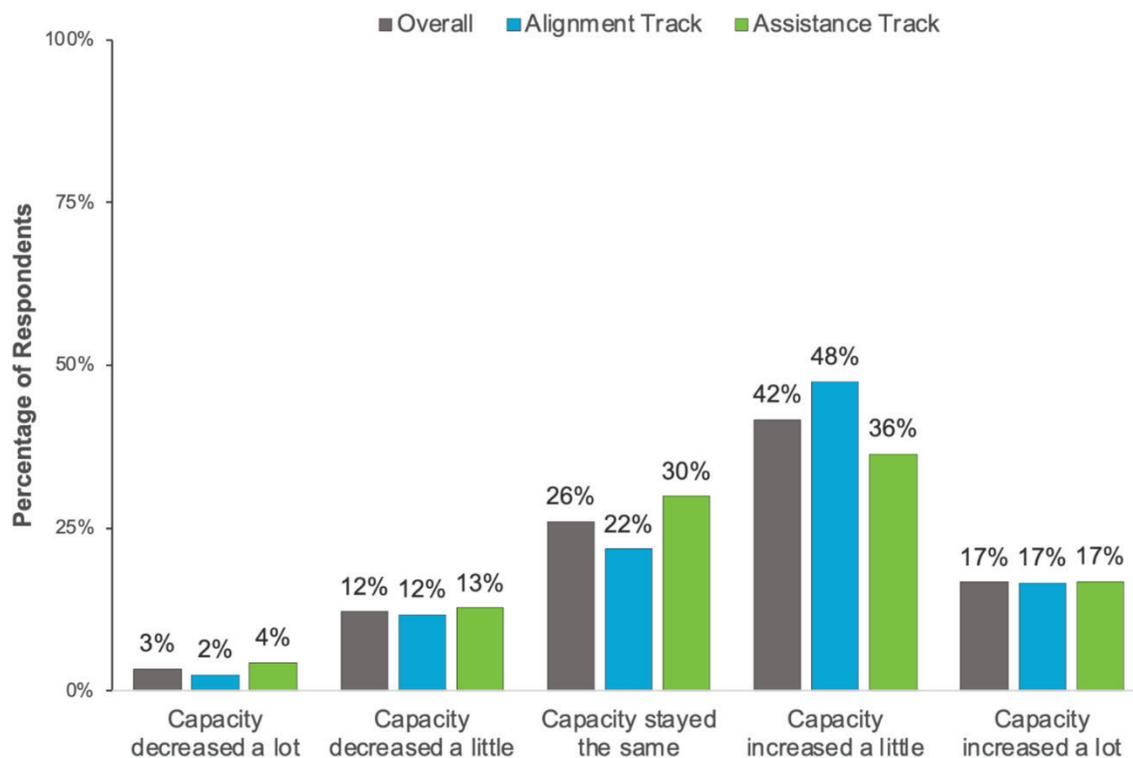
When CSPs were asked in the 2020 survey a general question about whether community capacity had increased since the AHC Model began in 2017, 59% said there had been improvement compared to 41% who said capacity had stayed the same or decreased (**Exhibit 4-9**). This finding provides suggestive evidence that community capacity for addressing HRSNs improved over that time period. Given that this survey took place from July to November 2020, it is possible that these changes reflect increases in funding for social services as part of federal, state, and local responses to the COVID-19 pandemic. Several CSP interviewees, for example, noted they received increased funding for services and experienced improved coordination of services among social service providers because of government responses to the COVID-19 pandemic, including the Coronavirus Aid, Relief, and Economic Security (CARES) Act, Paycheck Protection Program loans, and Community Development Block Grant funding. In addition, Alignment Track CSPs were slightly more likely than Assistance Track CSPs to report seeing increases in community capacity (65% versus 53%). This difference between the two tracks, though not statistically significant, suggests a

potential emerging difference between tracks that is consistent with the AHC Model’s intent. We found no substantive difference in perceived changes in community capacity by main type of service the CSP provides (housing, food, or other). These relationships will be reexamined later in the evaluation.

One potential driver of improvements in perceived community capacity could be that bridge organizations were increasingly partnering with available CSPs in their communities. The bridge organizations’ CRI lists of the CSPs each bridge organization reported referring beneficiaries to showed that bridge organizations named 31% more CSPs in 2021 compared to 2019 (900 compared to 687).

### Exhibit 4-9. Changes in Observed Community Capacity Since the Beginning of the AHC Model (2017)

59% of CSPs observed increases in community capacity since the start of the AHC Model, but 41% observed no change or decreases in community capacity.



Other Notes: Data from AHC Community Service Provider Survey Round 1 (July–November 2020). This survey question asked, “Please choose the best option for each of the following questions. Would you say the following decreased, stayed the same, or increased since May 2017?: Community capacity to meet residents’ health-related social needs.”

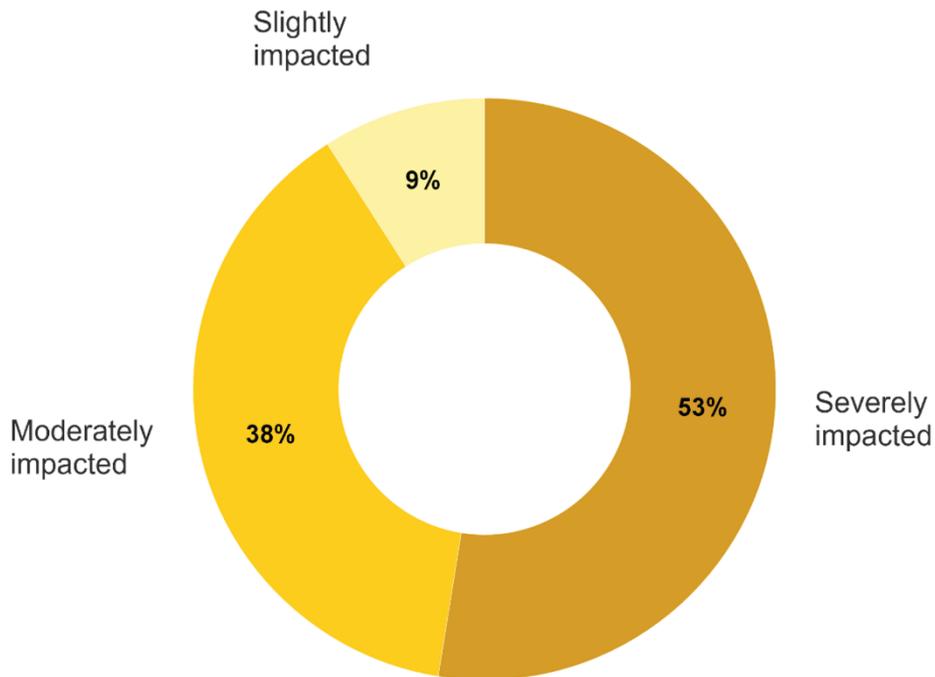
### Resource Availability Changed During the COVID-19 Pandemic

Over 90% of surveyed AHC Model CSPs reported being at least moderately or severely affected by the COVID-19 pandemic (Exhibit 4-10). CSPs in counties with higher COVID-19 case rates (greater disease burden) and those with lower poverty rates were more likely to report being severely affected by the pandemic.

### Exhibit 4-10. Level of COVID-19 Pandemic Impact on AHC CSPs

Almost all CSPs reported being moderately or severely affected by COVID-19. No CSPs reported being unaffected.

#### "How much has COVID-19 impacted your organization?"



Source: AHC Community Service Provider Survey Round 1 (July–November 2020).  
Definitions: COVID-19 = coronavirus disease 2019.  
Other Notes: 0% of respondents reported "Almost no impact."

The latter finding could be partially due to lower poverty areas having less robust social service systems than high-poverty areas (Allard, 2004; Allard and Roth, 2010), where social services were already supporting substantial portions of their populations before the pandemic. Because bridge organizations serve counties with higher social deprivation scores than non-AHC counties—calculations that rely heavily on poverty rates (see section “Community Resource Availability Was Not Always Matched to Community Needs”)—they were likely to have more services in place to meet beneficiaries’ needs. Additionally, CSPs with federal funding were less likely to report being severely affected by the pandemic, plausibly because CSPs without federal funding depended more heavily on state and local funding, which was more strained than federal funding during the pandemic (Harrison, 2020). There were no differences in the likelihood of a CSP being severely affected based on the main type of service it offered.

The ways CSPs reported being affected fall into six major categories:

- Increased demand for services, especially food assistance: Some CSPs cited a surge in food insecurity in their service area because of the pandemic that led to twice the usual demand for food assistance. Other CSPs reported their organizations had to absorb clients from partnering organizations that closed or suspended services during the pandemic. Several additional CSPs reported an increase in the number of clients financially eligible for services because of pandemic job loss and economic strain.

- Decreased staffing capacity and trouble hiring or finding enough staff or volunteers to meet demand for services: Decreased staff capacity was due to staff contracting COVID-19, staff caring for sick family members, or organizations needing to furlough staff to conserve resources. One barrier to recruiting volunteers was that volunteers were often older (older than 65 years) and preferred to stay home to avoid contracting COVID-19.
- Increased need to adopt more COVID-safe methods of service delivery, such as virtual services, curbside meal delivery, and food pantry pickup to minimize face-to-face contact and ensure social distancing.
- Decreased donations as individuals and corporations faced financial insecurity.
- Increased costs due to COVID-19 safety protocols, such as social distancing, cleaning, masking, and routine testing.
- Partner organizations already at full capacity, limiting CSPs' ability to make necessary referrals.

## Conclusions

Community capacity, an important element of the AHC Model's ability to improve participants' HRSNs, is essential to model success. Yet capacity is complex, multidimensional, and challenging to measure. AHC community capacity had two core components: 1) a community's HRSN resource availability and 2) the community's ability to leverage those resources to meet beneficiaries' HRSNs. AHC Model activities related to community capacity primarily focused on improving how beneficiaries and communities can leverage HRSN resources; model activities did not directly increase HRSN resource availability because AHC funds provided to bridge organizations could not be used to pay for social services. AHC communities cited having resources available and accessible as critical to resolving beneficiaries' HRSNs. Resource availability varied across AHC Model communities, with no significant differences in resource availability between tracks. Persistent deficiencies in affordable housing and transportation services, in particular, were cited as affecting communities' ability to get beneficiaries' HRSNs addressed. Most CSPs reported having sufficient organizational resources—in terms of staffing and funding—to address clients' needs. However, eligibility requirements created gaps in who could be served. Almost all CSPs reported being moderately or severely affected by the COVID-19 pandemic, even though most CSPs observed increases in community capacity since the start of the AHC Model.

Below we summarize the challenges and lessons learned about community capacity to date. The Third Evaluation Report will further explore how resource availability may have changed over the course of AHC Model implementation and how community capacity may influence AHC Model outcomes.



- Community capacity is multidimensional and difficult to measure in a way that is comparable across communities because there are no "gold standard" metrics.
  - A limitation of the quantitative measures of resource availability presented in this chapter is that they focus on CSP availability, CSP accessibility, participating CSPs, and CSP organizational resources but do not account for other types of CSP resources such as the supply of affordable housing units or transportation infrastructure, which stakeholders identified as important factors in community capacity to address HRSNs. Also, CSP survey data reflected only the perspectives of CSPs that responded to the survey; perspectives of those that did not respond were not captured.
  - The AHC Model did not directly support resource availability, although resource availability was critical for helping resolve beneficiaries' HRSNs.
  - There were persistent deficiencies in housing and transportation services, and resource availability varied across bridge organizations.
- To shift community capacity, effort is needed to improve not only a community's ability to leverage existing resources, but also the underlying level of resource availability.
  - Most CSPs reported that community capacity increased since the beginning of the model. This may be partially due to COVID-related resource infusions. However, capacity increased slightly more in the Alignment than Assistance Track. Although the difference was not statistically significant, it is in line with the intent of the AHC Model.

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## Chapter 5: Implementation of Alignment

Alignment Track bridge organizations were responsible for implementing additional model requirements that included convening an advisory board to review and prioritize beneficiary and community needs, conducting an annual assessment of community services to identify gaps, and creating a QI plan to better align community services to meet beneficiary needs.

Exploring Alignment Track bridge organizations' activities was critical to understanding if the model was implemented as designed and uncovering strategies and best practices for achieving Alignment Track goals. Through these findings, the Innovation Center may better pinpoint how to refine and improve model implementation in the future.

### Key Takeaways

- Advisory boards were forums to report and advance Alignment Track requirements and helped build partnerships between clinical providers and CSPs, representatives who otherwise seldom interacted.
- Advisory boards benefitted from having beneficiaries as members, but many did not recruit them (even though it was a model requirement) or the beneficiary members had difficulty attending meetings.

(continued)

Although this chapter is focused on the Alignment Track, we included supplemental information on the Assistance Track when appropriate. This chapter addresses Research Objectives 1 and 2, which seek to understand the context of the AHC Model and the approaches to implementation, respectively. Specifically, this chapter explores five research questions:

- How are bridge organizations and CDSs implementing AHC alignment interventions?
- How have bridge organizations operationalized community alignment?
- What kinds of unanticipated challenges arose during alignment model implementation?
- What types of supports must bridge organizations and CDSs receive to successfully implement alignment in the AHC Model?
- What other types of alignment initiatives and multisector partnerships to address social determinants of health (SDOH) are underway in communities where AHC awardees are located that might affect the AHC Model or be important for understanding the impact of the AHC Model?

Qualitative findings are based on review and abstraction of Alignment Track bridge organizations' program documents and semi-structured interviews with AHC stakeholders from all bridge organizations active at the time of data collection: January through March 2021. Interviews were conducted with AHC leaders (project directors or managers), state Medicaid staff, and QI specialists (Alignment Track only). Interviewees were selected to represent stakeholders most engaged with and knowledgeable about key topics; however, findings should be interpreted with the recognition that interviewees are not representative of all individuals or organizations engaged on these issues. Quantitative findings are based on a survey of 235 advisory board members, conducted from July through September 2020, and a survey of 29 bridge organizations, conducted from April through June 2020. (See **Appendix D** for the interviews and thematic analysis, and **Appendix C** for the survey protocol and methods.)

## Advisory Board Implementation, Participation, and Engagement

The AHC Model required that each Alignment Track bridge organization convene an advisory board to assess and prioritize stakeholder and community needs, assist the bridge organization in preparing an annual gap analysis, and support development of a QI plan. The board had to meet at least quarterly and include representatives from state Medicaid agency(ies), local government(s) (e.g., Department of Public Health, mayor's office), participating CDSs, participating CSPs (i.e., CSPs for each HRSN identified by the [AHC HRSN Screening Tool](#)), local health and community service payers and providers, and beneficiaries and their caregivers.

### Key Takeaways (continued)

- Alignment Track stakeholders reported more data sharing than their Assistance Track counterparts. There may be value in having formal structures to disseminate and deliberate on model data to improve implementation.
- Over half of Assistance Track bridge organizations reported implementing advisory boards and QI plans, which may make it more difficult to detect Alignment Track model impacts. AHC leaders reported that health equity statements informed how they collected and used data to inform model planning and described progress toward health equity through engaging a wider variety of partners.
- Alignment activities linked the “two worlds” of clinical care and community services. By convening at board meetings, collaborating on strategic plans and mission and vision statements, and observing CSP operations firsthand, clinical and CSP groups established mutual understanding.

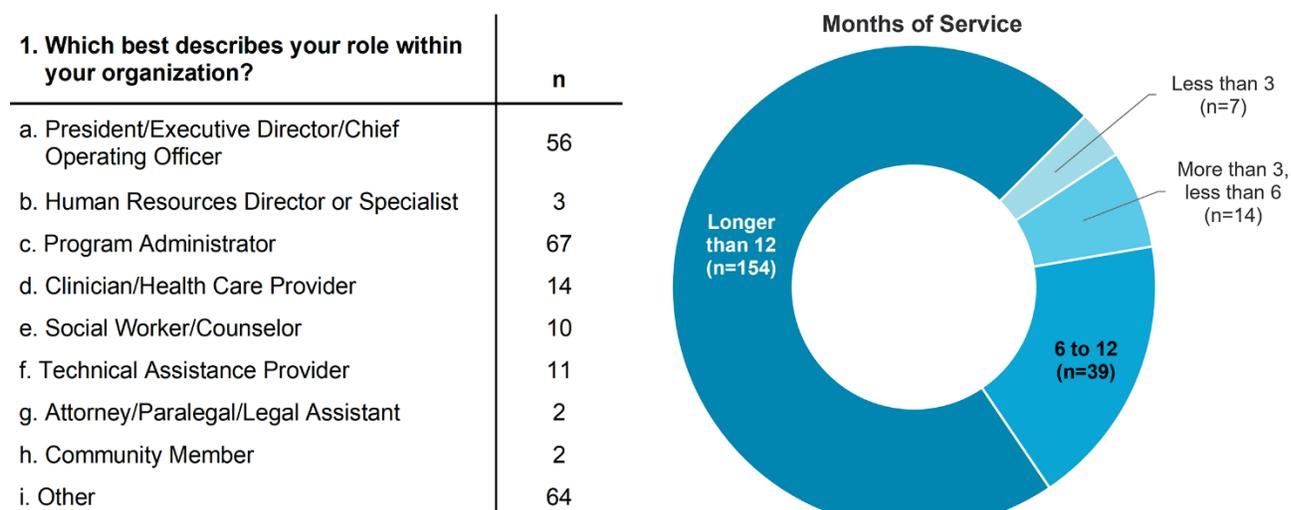
## Advisory Board Membership Covered a Wide Range of Professions

AHC stakeholders from the 18 Alignment Track bridge organizations described convening advisory boards, which in some cases included small working groups. Most advisory board members reported meeting once or twice every couple of months and serving on the boards longer than 1 year. The groups represented in the largest numbers on advisory boards were representatives from AHC CDSs, CSPs, and state Medicaid agencies.

The roles advisory board members played in their own organizations covered a wide range. Program administrators and presidents/executive directors/chief operating officers represented 29% and 24%, respectively, of the membership on the advisory boards (**Exhibit 5-1**). Only 6% were clinicians/health care providers. Next, in descending order, were social workers, technical assistance (TA) providers, community members, human resources directors or specialists, and attorneys/paralegal professionals (each category at less than 5%). The remaining members, which together accounted for 26% of the total, spanned many different roles (the main ones were chief medical officer, medical director, policy analyst, researcher, community health worker, project coordinator, and patient advocate).

### Exhibit 5-1. Alignment Track Advisory Board Membership

Advisory board members held a variety of roles in their individual organizations, and most members served on boards for longer than 1 year.



Source: Survey of Advisory Board Members  
 Time Frame: July–September 2020  
 Track: Alignment Track

## Advisory Board Agendas Focused on a Range of Alignment Activities

Advisory board agendas, as AHC stakeholders described them, covered a variety of topics that evolved over time. Some AHC stakeholders mentioned that their earliest meetings were informational, focused on implementation performance (e.g., reviewing screening and navigation data). With time, agendas became more interactive—gathering input from members (such as asking CSPs and patient navigators for their thoughts on performance challenges and opportunities), as well as focusing on other alignment activities, such as QI. Examples of advisory board activities and discussion topics included implementation performance, advisory board goals, networking and sharing about new community resources, gap analyses and assessments of community needs, addressing and prioritizing of identified needs, alignment of capacity with needs, investments, and process improvements. A few

AHC stakeholders mentioned talking about policies, advocacy, data interoperability and access, and understanding of how AHC may align with new and related initiatives at the state and federal levels.

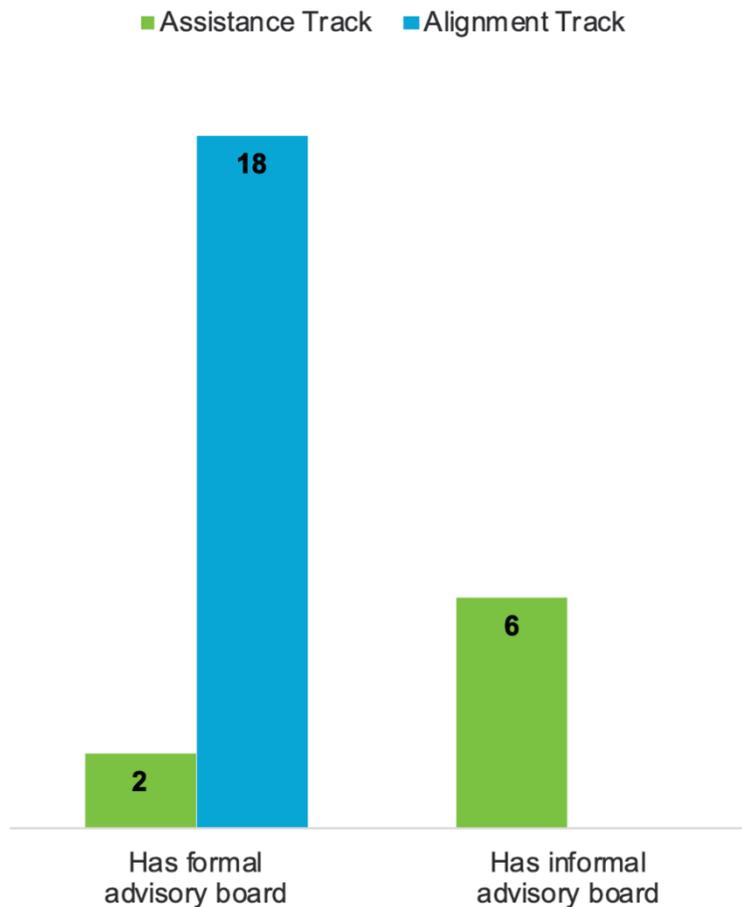
### Advisory Boards Were Implemented Across Model Tracks

In addition to the advisory board activities of Alignment Track bridge organizations, survey data revealed that most Assistance Track bridge organizations (8 out of 11) also reported having either a formal or informal advisory board, collaborative, or council in place during model implementation (**Exhibit 5-2**).

This finding has implications for using Assistance Track bridge organizations as the comparison group for Alignment Track bridge organizations, because having many Assistance Track bridge organizations engaged in alignment-type activities runs the risk of attenuating the documented impact of any added benefit from Alignment Track activities.

#### Exhibit 5-2. Bridge Organizations With Advisory Groups

All Alignment Track and most of the Assistance Track bridge organizations reported having an advisory board, collaborative, or council. Three Assistance Track bridge organizations did not have any advisory board function.



Sources: Survey of Bridge Organizations (n=26; 3 Assistance Track bridge organizations did not report any advisory board function), April–June 2020; semi-structured interviews with AHC stakeholders from all bridge organizations, January–March 2021.

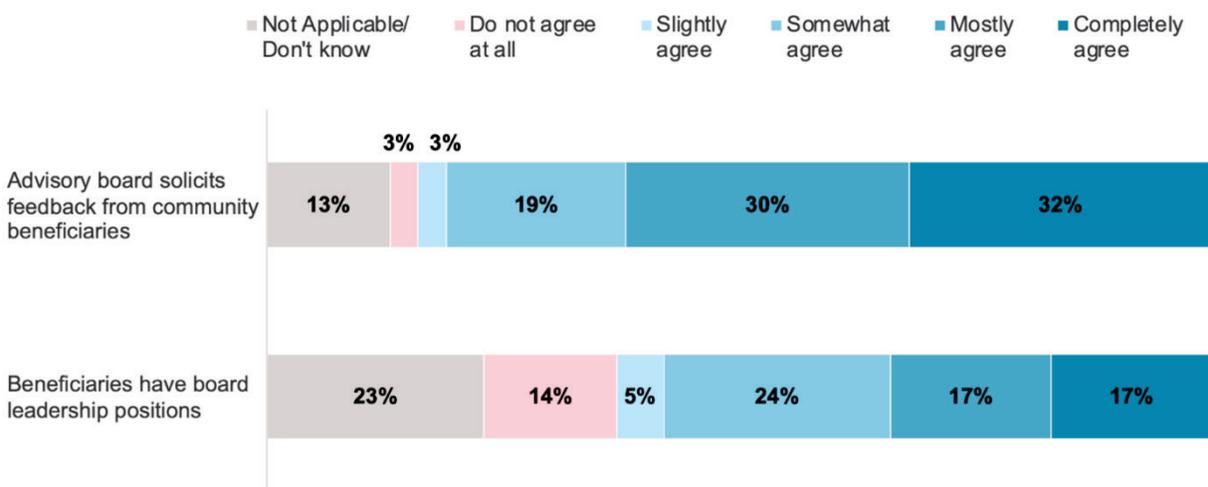
## AHC Stakeholders Found It Difficult to Engage Certain Groups on Advisory Boards

Among the range of types of advisory board members, Alignment Track bridge organization leads and advisory board members described challenges with engaging and/or retaining community members and executive leadership positions, although the issues involved were different for the two groups.

The AHC Model required that Alignment Track bridge organizations include “beneficiaries and their caregivers” as advisory board representatives. Here, we interpreted this category as meaning community members who may represent and speak to the HRSN-related services and needs of the community or people who may have received screening, referral, or navigation services at a CDS (related and unrelated to the AHC Model). Based on advisory board member survey findings (see **Exhibit 5-1**), only approximately 5% of the board members surveyed reported their role in their organization as community member. When asked about community engagement in advisory board activities, 62% of advisory board survey respondents completely or mostly agreed that the advisory board solicited feedback from community beneficiaries, and 34% of respondents completely or mostly agreed that community beneficiaries held board leadership positions (**Exhibit 5-3**). Beneficiaries may have been underrepresented in the survey findings because they either had less of an incentive than other groups to complete the survey or served in several of the roles listed in the survey (e.g., program administrator and community member) and selected just one role in their survey response. Nonetheless, these findings suggest there is opportunity for improvement in engaging more community beneficiaries on boards and in board leadership roles.

### Exhibit 5-3. Community Engagement in Alignment Track Bridge Organization Advisory Boards

Most survey respondents agreed that advisory boards solicited feedback from community members, while a little more than a third of members surveyed agreed that community members have leadership positions on the board.



Source: Survey of Advisory Board Members.

Time Frame: April–June 2020.

Other Notes: Each respondent=0.45%. Note that representation across bridges is unequal, so the values do not represent bridges, but respondents.

AHC stakeholders reported a variety of barriers to beneficiary engagement. A few bridge organization leads described being unsure about how to integrate beneficiaries respectfully and meaningfully into the meetings, and that beneficiary engagement was not prioritized because of the complexity of model implementation. Another bridge organization lead reported that it would require “mindset shifting” by some board members before they would agree to or feel prepared to include a beneficiary in advisory board activities. Yet other bridge organization leads described challenges with identifying available beneficiaries because they were not direct service providers or that engaging beneficiaries was difficult because these community members had a hard time traveling to, or taking time off to attend, meetings during the day. In several cases, bridge organization leads reported that their patient navigators had invited and encouraged beneficiaries to attend meetings, but they did not go or “maybe once or twice they’ve come.”

“And [the beneficiary advisory board member] was just a champion. He was very much a connector ... I want to say specifically, he was kind of a champion of our community resource inventory. We created a website and a web application and he was good about trying to connect dots between other people who might not be involved in our project, who might need to know about it. Sharing that information with his other organizations that he was in involved in.”

— Bridge Organization Lead

A few bridge organization leads noted that although beneficiaries were challenging to engage and retain, they had developed strategies to overcome barriers to inclusion. For one advisory board with seven beneficiary representatives, AHC stakeholders attributed success with engagement to a formal onboarding plan that included paid transportation to meetings (which was discontinued during the COVID-19 pandemic). A couple of other bridge organization leads described relying on navigator advisory board members to “tell beneficiary stories,” including what was and was not working well for beneficiaries.

Bridge organization leads perceived important alignment benefits to beneficiary inclusion. A few bridge organization leads highlighted that beneficiary representatives held rich knowledge about community resources that could be used to update CRIs. Others added that beneficiary members can share experiences with receiving clinical and community services and “provide a human face and voice” to advisory board topics that remind executive leadership that “these are people’s lives that [the board] is talking about.” These insights allowed other board members to better understand why some people with HRSNs may reject services that could possibly benefit them and thus reveal opportunities to improve the model.

Having executive-level members was reported to be a significant alignment implementation facilitator because these members had decision-making power at their respective organizations and could facilitate advisory board actions that otherwise would have taken longer to implement or possibly not happened at all. However, some bridge organization staff reported challenges retaining executive-level members on advisory boards because of scheduling conflicts and competing priorities. The value of their participation was lost when leadership staff left, were unable to attend advisory board meetings regularly, or were replaced with staff without executive power. To address these challenges, AHC stakeholders may need both guidance and resources to help transition and onboard new advisory board members and to effectively engage beneficiaries and their caregivers on advisory boards.

“[The beneficiary advisory board member] really kept us focused and reminded us, don't forget about this, bringing their thoughts about how other Medicare or Medicaid individuals might be affected, and what we could do better. Things like that. So, we were very lucky in having them on board with us.”

— Bridge Organization Lead

## Advisory Boards Can Be a First Step in Aligning Clinical Care With Community Services

Some bridge organization stakeholders and advisory board members talked about the “two worlds” of clinical care and community services and how the AHC Model helped close that gap. In terms of barriers to clinical-community

collaboration, AHC stakeholders described a “culture side of things,” where clinical and community service representatives needed to learn each other’s language. Other CSP advisory board members added that they felt CDS representatives perceived clinical work as superior to community-based services. However, through alignment activities—including convening at board meetings, collaborating on strategic plans and mission and vision statements, and observing CSP operations firsthand—clinical and CSP groups were perceived to be coming together, including the benefit of having CDSs learn the value of CSPs’ work and their professionalism, standards, and regulations.

## “We’re all in this work together”: Building Clinical and Community Partnership Through Alignment

The following three vignettes share bridge organization lead and advisory board member perceptions of the value of advisory board activities for building collaboration among the “two worlds” of clinical and community services.

**Creating connection and shared meaning through meetings.** One physician leader described feeling intimidated at their first advisory board meeting. They thought everyone else in attendance knew more than they did. After building relationships during meetings, however, they found that everyone felt that way at first, and meetings helped build empathy and the feeling that “we’re all in this work together.” This physician also said that advisory board meetings were different from other meetings they had run in their life: everyone was learning as they went, and it was clear for the first time “how integrally connected all our work is.” Before AHC alignment work, the physician added that “we didn’t know how all our work was linked together for the benefit of the patient. When we solve a problem in housing, it helps their diabetes, etc.” They ended by saying, “Regardless of what the data show about the triple aim and everything, we know that we’re doing good work, we’re changing the work that’s done. Patients are really benefiting.”

**Building partnership through collaboration on strategic plans and mission and vision statements.** At their first advisory board meeting, one CSP staff person recalled how clinical partners sat on one side of the table and community partners on the other, each staring at each other without talking. What brought the sides together, however, was developing the AHC advisory board strategic plan and mission and vision statement and talking about simple questions such as “Why are we here? What does it mean to us?” Specifically, these activities were perceived to bridge the communication gap and solidify the importance of creating a culture change, which began at advisory board meetings and spread to day-to-day clinical-community collaborations.

**Enhanced understanding and appreciation through observing CSP operations firsthand.** One advisory board member explained how engaging clinical providers in CSPs’ day-to-day work could build clinical-community partnership. Using the example of a food event at a community clinic and focusing on a clinician who attended, one CSP representative explained, “[the clinician was] so happy he was there helping people carry groceries out to their car. I mean, it was just awesome ... and the clinical providers saw very clearly what the community providers could do for them.”

## Data Sharing Facilitated Advisory Board Implementation

Meetings created opportunities for AHC stakeholders to share and review clinical screening and referral data and insights about available community resources. Advisory board members described how access to screening and referral data incentivized advisory board participation and engagement for at least three reasons. First, one bridge organization lead described how CDS members were interested to see progress across sites in the screening and referral results and were excited about potentially bringing those results back to their institutions. Second, a few advisory board members explained that reviewing and talking through AHC data brought members together. Third, advisory board members described how access to HRSN data could help organizations build capacity to address HRSNs, including as inputs for funding such as grant applications or planning for new programming.

## **The COVID-19 Pandemic's Influence on Advisory Board Meeting Engagement Was Mixed**

AHC stakeholders reported that the onset of the COVID-19 pandemic led to in-person advisory board meetings being temporarily canceled and then reconvened virtually by phone or video. Advisory board members described the transition to virtual meetings as having a mixed impact on attendance and engagement. Some AHC stakeholders reported that virtual meetings increased advisory board attendance because no one had to travel to the meeting. One bridge organization lead also reported that the pandemic-forced move to virtual meetings gave members the opportunity to implement responsive and new meeting formats quickly, such as virtual breakout rooms, which increased engagement and resource sharing. But some advisory board members were less likely to be available for meetings because they were overwhelmed by their community's COVID-related needs. At one bridge organization, an advisory board member described virtual meetings leading to decreased engagement because participants could avoid interacting with other participants by simply turning their cameras off or just dialing in.

## **Implementation of Gap Analysis and Quality Improvement Plan Activities**

The AHC Model Alignment Track required bridges to analyze the extent to which available community services addressed the HRSNs of high-risk community-dwelling beneficiaries. To meet this requirement, bridge organizations conducted an annual gap analysis, including developing baseline information about the five core HRSNs, existing community service capacity, and gaps in community services. The aim of the annual analysis was to help bridge organizations assess actual and desired performance—to reveal and prioritize opportunities for improvement related to clinical and community alignment, not only for screening and referral but also at the community level, to improve availability of resources and beneficiaries' access to them.

### **Alignment Track Bridge Organizations Used Data to Identify and Prioritize Gaps in HRSNs**

The Alignment Track bridge organizations' gap analyses generally included background and purpose, methodology and approach, results (findings about needs and gaps by HRSN), and prioritization of gaps and conclusions. The analysis reports varied in length across bridge organizations, from fewer than 20 to almost 100 pages. Bridge organizations and their partners reported using a variety of data to create their gap analyses, including secondary data such as CMS data (including referral completion rates and resolution of HRSNs), publicly available datasets (e.g., American Community Survey, U.S. Census Bureau QuickFacts, Community Health Rankings published by the Robert Wood Johnson Foundation, city health department data), and reports and research studies (e.g., Hospital Association study, neighborhood health profiles, completed community health needs assessments). Some analyses included primary qualitative data, including interviews and focus groups with screening staff and patient navigators.

AHC stakeholders described drafting gap analyses through advisory board subcommittees and working groups, AHC leaders, and contractors such as local universities or with input from data specialists. Draft reports were often then shared with advisory board members, who reviewed and commented on identified gaps and helped prioritize a subset of the core HRSNs for QI projects. AHC stakeholders described different approaches to prioritizing needs, including focusing on the greatest needs, strategies or prioritization areas across the five core HRSNs, or HRSNs perceived to have the greatest barriers to access. For one bridge organization, AHC stakeholders described how the gap analysis and prioritization steps informed and catalyzed work on a large, regional transportation plan, something that had never happened before they implemented the Alignment Track of the AHC Model.

AHC stakeholders valued the gap analysis activity for revealing limitations in data for assessing gaps in HRSNs and the breakdown of needs by race and ethnicity. AHC stakeholders also expressed how completing gap analyses developed their understanding of the range of resources that exist in their communities. In addition, the gap analysis activity provided advisory board members with data they may not have seen or had access to before, which AHC stakeholders described as valuable for increasing participants' engagement and interest in understanding and addressing HRSN gaps and needs.

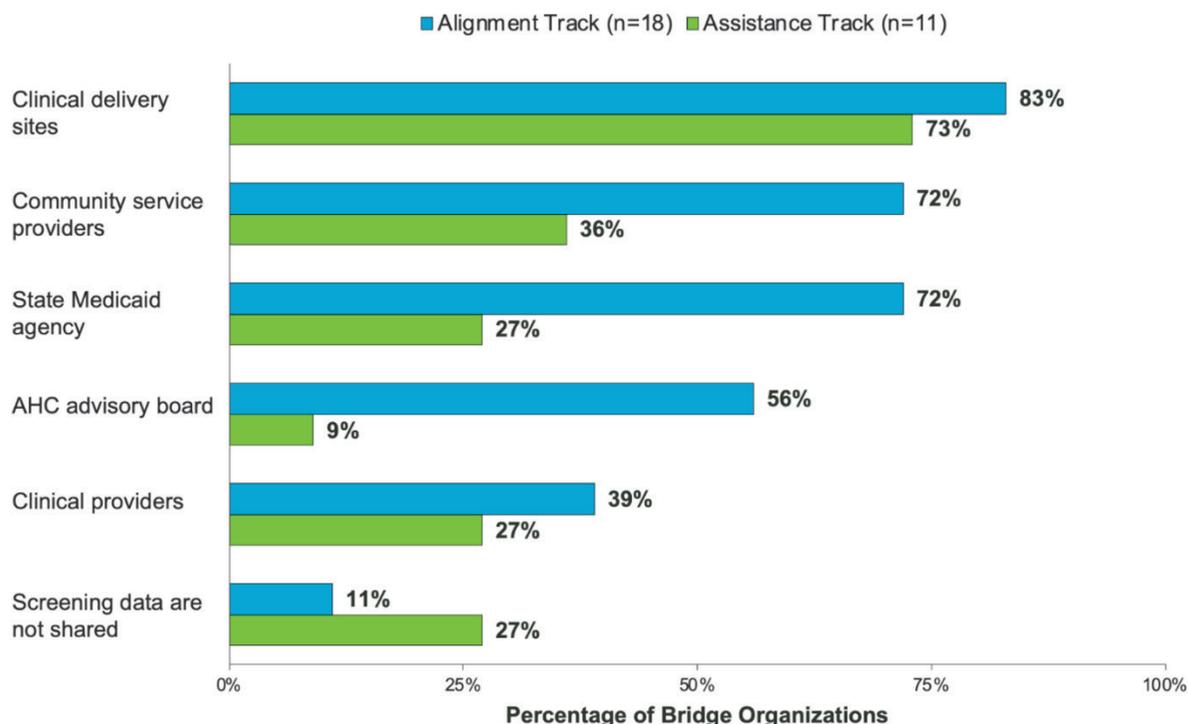
### **Alignment Bridge Organizations Reported Sharing Data More Widely Than Assistance Bridge Organizations**

As part of a CQI approach, Alignment Track bridge organizations were required to share data with model participants and advisory board members to inform their gap analyses and QI plans. As specified by the model, these were de-identified data on participating community-dwelling beneficiaries' HRSNs. To administer the data sharing for the CQI requirement, the model also specified that Alignment Track bridge organizations have a QI facilitator as key personnel.

Based on bridge organization survey findings, most Alignment Track bridge organizations reported sharing screening data with their advisory board members (**Exhibit 5-4**). Some Assistance Track bridge organizations shared data with model partners (e.g., CDSs, CSPs, state Medicaid agencies), although they were not required to do so. Survey findings confirmed that more alignment-type data-sharing collaboration occurred among Alignment Track bridge organizations and their AHC stakeholders than among Assistance Track bridge organizations. These findings suggest that formal goals, structures, and roles (i.e., a CQI approach, QI facilitator, and an advisory board) do indeed add value in promoting the types of data dissemination and deliberation that improve implementation.

### Exhibit 5-4. With Whom Are AHC Data Shared?

Most Alignment Track bridge organizations reported sharing screening data across a variety of AHC stakeholders, including advisory board members. More Alignment than Assistance Track bridge organizations shared data.



Source: Survey of Bridge Organizations  
 Time Frame: April–June 2020.  
 Definitions: AHC = Accountable Health Communities.  
 Other Notes: multiple answers allowed.

### Alignment Track Bridge Organizations Varied Widely in QI Plan Strength, but Nearly All Improved Their QI Planning Over Time

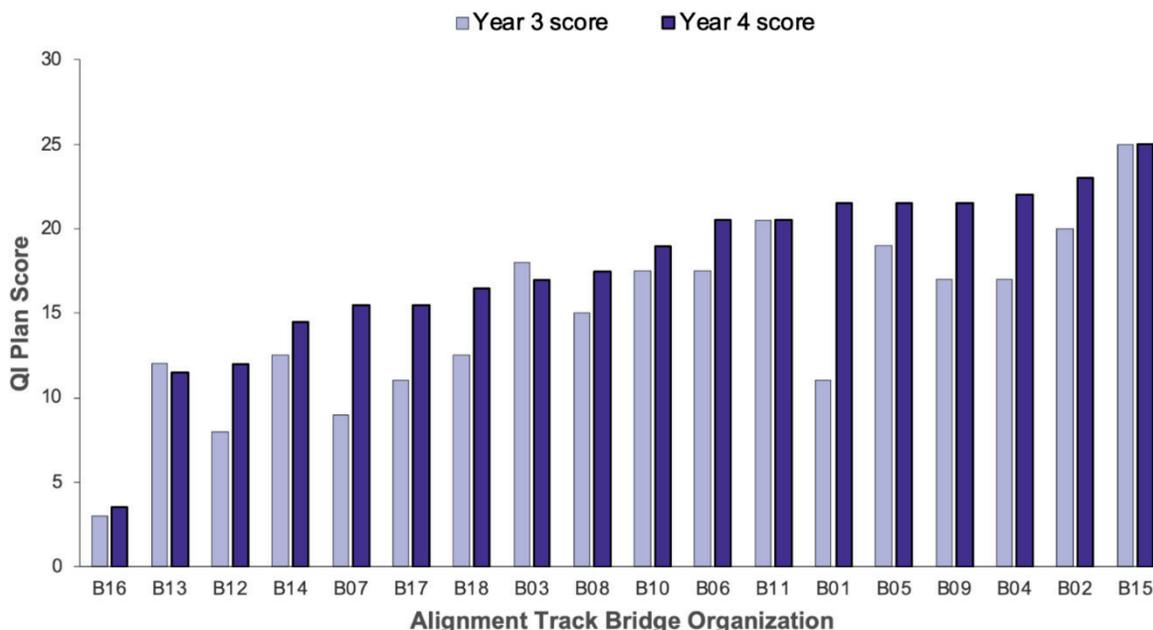
Alignment Track bridge organizations, as noted, were required to collaborate with their advisory boards to develop a QI plan and update the plan annually based on the gap analysis. The QI plan served as a guidance document for bridge organizations and model participants to implement the model, including how activities to address community service gaps were managed, implemented, assessed by the bridge organization and its advisory board, and coordinated with model participants. The AHC QI plan had five required components: 1) goals over a defined time frame; 2) methods for managing and monitoring all plan activities; 3) standard quality tools and techniques in use; 4) method for communicating QI progress to advisory boards; and 5) evaluation processes, measures, and outcomes to ensure quality and effectiveness of the QI plan implementation.

To assess the quality of Alignment Track bridge organizations’ QI plans, QI subject matter experts systematically analyzed the Year 3 and Year 4 QI plans submitted and assigned the plans a score between 0 and 5 (in 0.5 increments) to each of the five required QI plan components. A score of 0 meant the QI plan did not include any information on the required element. A score of 1 meant weak inclusion. A score of 5, the strongest level of inclusion, meant that the plan fully met all AHC Model specifications. Scores were then summed across the five elements for a total possible fidelity/strength score of 25. The analysis showed that, even though QI plans’ strength and fidelity to required components varied widely (Exhibit 5-5), nearly all could be strengthened. From

Year 3 to Year 4 of model implementation, all but two of the 18 Alignment Track bridge organizations improved in fidelity and strength, including seven that improved their score by more than 20%.

### Exhibit 5-5. Change in QI Plan Strength Score

Alignment Track bridge organizations' QI plans varied widely in their strength and fidelity to required plan components, and the majority improved from Year 3 to Year 4 of model implementation.



Source: RTI analysis of bridge organizations' Y3 and Y4 quality improvement plans, conducted by two evaluation team QI subject matter experts.  
 Definitions: QI = quality improvement.  
 Track: Alignment Track.

During this time, Alignment Track bridge organization QI plan teams received additional coaching on QI methodologies and strategies. This training, which was described as largely informal and facilitated through advisory board or other project-related meetings (e.g., quality meetings), likely contributed to plan improvements. For the two Alignment Track bridge organizations whose QI plans scored lower in Year 4 than in Year 3, bridge organization staff mentioned in interviews that they had lost key program staff between Years 3 and 4 as a result of the pandemic, which may have contributed to the plans' deterioration.

### QI Plan Improvement Goals Varied Widely

The Alignment Track bridge organizations' improvement goals described in the Year 4 QI plans aligned with the projects and goals AHC stakeholders described during interviews. These goals focused on AHC milestones and alignment goals—ranging from improving screening and navigation processes to meeting key performance indicators, improving CRIs, building relationships between clinical and community partners, creating a QI culture, and increasing the supply of community resources for prioritized HRSNs. Some bridge organization staff members explained that their QI plan's focus on improving beneficiary screening/referral and navigation processes was often necessary to meet the model's required key performance targets, which they sometimes found difficult to reach.

In addition to the QI plan goals focused on AHC Model implementation, QI plans included goals related to sustaining the model longer term. In both QI plans and interviews, AHC stakeholders discussed the challenges of

establishing consensus in a sustainability approach, including which model elements to standardize/maintain across CDS partners; what tools to use; how to maintain staffing; and, in some cases, how to proactively create new payment models that would sustain the bridge organizations’ work with community partners.

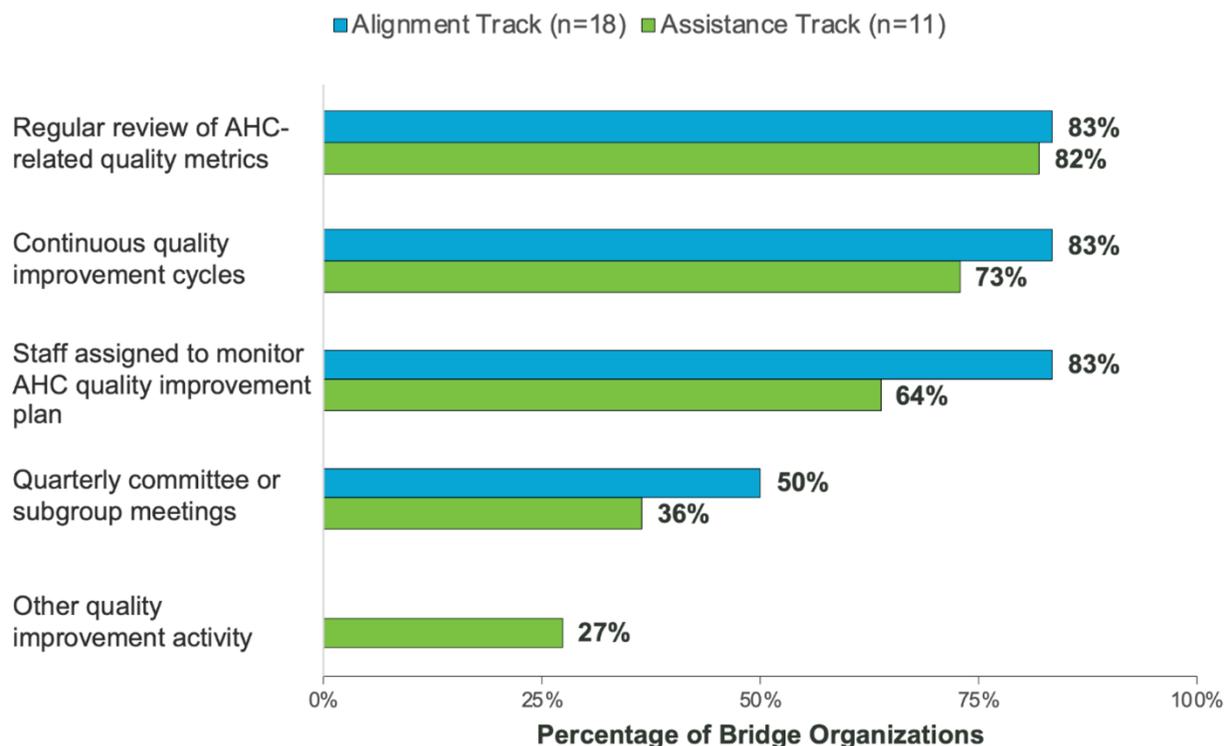
### Though Not a Model Requirement, Some Assistance Track Bridge Organizations Implemented QI Plans and Other QI Activities

All Assistance Track bridge organizations’ stakeholders reported engaging in QI activities, as noted, even though they were only required to do so in relation to improving screening and navigation services and not in relation to community alignment. The activities that they reported engaging in included CQI cycles, review of AHC-related quality metrics, and assignment of staff to monitor a QI plan.

As **Exhibit 5-6** demonstrates, however, fewer Assistance than Alignment Track bridge organizations reported engaging in each QI activity. This outcome likely reflects the fact that only Alignment Track bridge organizations were required by the AHC Model to develop QI plans. As noted, and overall, the finding that Assistance Track bridge organizations also engaged in a variety of QI activities may complicate the use of Assistance Track bridge organizations as the comparison group for the Alignment Track impact analysis, potentially underestimating the true impact of the alignment intervention.

#### Exhibit 5-6. QI Activities to Monitor Effectiveness

Bridge organizations in both AHC tracks reported engaging in QI activities.



Source: Survey of Bridge Organizations.  
 Time Frame: April–June 2020.  
 Definitions: AHC = Accountable Health Communities.  
 Other Notes: Each respondent=0.45%. Note that representation across bridges is unequal, so the values do not represent bridges, but respondents. Multiple answers allowed.

## Sources of Support to Implement Alignment Track Activities

Alignment Track stakeholders' views regarding the types of support bridge organizations valued provide insight into the types of support bridge organizations and their partners need to succeed in their service alignment activities.

### Bridge Organizations Valued Support From CMS Project Officers and Peers

Alignment Track bridge organization stakeholders reported using, and in general appreciating, the variety of formal or structured resources offered to AHC awardees to implement the model. Alignment Track bridge organization staff also reported using more informal means of implementation support, including connecting with other bridge organizations.

Bridge organizations reported that their main and most helpful source of support came from meeting with Innovation Center project officers; they applauded project officers for being not only open and receptive to implementation challenges, but also supportive, understanding, and responsive. Some bridge organization staff also mentioned how AHC affinity groups supported alignment implementation. These groups, organized by the Innovation Center on AHC topics, enabled AHC stakeholders to share and learn best practices. According to one bridge organization staff member, however, some groups were less helpful than others because members varied in their implementation-related knowledge, and for this bridge organization in particular, the discussion was too basic to be helpful.

Bridge organizations particularly appreciated informal support from Alignment Track bridge organization peers. This support included learning from and connecting with other AHC stakeholders through Innovation Center-offered learning events and from ad hoc contacts with peers. Some bridge organizations also learned from, or formed relationships with, other bridge organizations in non-AHC- and even non-Innovation Center-sponsored forums such as invited presentations. From these connections, bridge organization staff reported identifying the less tangible but perhaps equally important benefit of knowing “you are not alone” in facing similar challenges and experiences as those involved in AHC Model implementation.

### Bridge Organization Staff Noted Certain Topics as Particularly Important

In addition to the value of people and forums for supporting alignment implementation generally, Alignment Track bridge organization staff described the importance of receiving TA on topics related to model sustainability and alignment activities, such as help with QI plans, the Innovation Center's sharing of evaluation findings, and Innovation Center-provided templates. Some bridge organizations added that they would have liked even more TA on sustainability and on advisory board and gap analysis implementation.

## AHC Alignment-Like Initiatives and Multisector Partnerships

Understanding what other alignment-like initiatives and partnerships were underway in AHC communities is important for identifying the impact of the Alignment Track and the AHC Model more generally. For example, advisory board participation may have been shaped by members' commitments to other coalitions, and AHC QI activities may have been informed by other SDOH-related commitments or requirements (e.g., community health needs assessments completed by nonprofit hospitals to maintain their nonprofit status).

### Stakeholders Were Aware of and Often Engaged in AHC-Similar Alignment Work

During interviews, AHC stakeholders reported initiatives and work, both connected and not connected to the AHC Model, that resembled AHC alignment activities, such as building cross-sector partnership and better aligning

health and social care in AHC communities. In some cases, AHC stakeholders reported only awareness of these efforts; in other cases, they reported participating in these efforts (Exhibit 5-7).

### Exhibit 5-7. Other Alignment-Related Initiatives Reported as Underway in AHC Communities

Main Type	Subtype
Medicaid	Medicaid cross-agency care coordination with social services
	Medicaid Section 1115 waivers to provide beneficiaries resources to address HRSNs
State- and community-level Initiatives or work	State-led SDOH priority efforts
	Regional or community-level SDOH efforts
	Hospital community benefit

Definitions: HRSN = health-related social need; SDOH = social determinants of health.

AHC Model stakeholders described various ways in which AHC and related initiatives were perceived to be mutually beneficial. For example, in some cases, the work was part of an overall state or community effort, while, in others, it was a single organization’s vision or portfolio, or the work was widely known, supported, or valued. One stakeholder described that the Innovation Center funding and stewarding of the AHC Model motivated their participation and gave more visibility and credibility to SDOH work.

Bridge organizations and their partners also described barriers to doing non-AHC SDOH-related work. Many of these barriers resemble the barriers to AHC participation described throughout our evaluation work. For example, AHC stakeholders reported that concurrent SDOH or AHC-like work may have competed or overlapped with AHC work, such as when providers had to do multiple screenings, when clients had multiple navigators, or stakeholders’ AHC Model participation competed with their other participation priorities (such as other community consortia or boards). Finally, a few bridge organizations reported that they chose to focus solely on the AHC Model during the grant period because, as one bridge organization lead explained, “[they] want to learn from this [model] before [they] just start building up other [related efforts]. [They] really have paused implementation of any other HRSN or SDOH programs just because of that.”

“... we thought if this is CMS looking for some evidence that incorporating screening, and the connecting of patients to community-based resources should be part of a future payment model, we're all in, we're super pumped. We know that that is a 100% true and should be the case, so if this provides a demonstration that builds a case for that and leads to future policy, awesome.”

“It became more legitimate, and the doors opened. States [or entities] that were ready to do it and really wanted to do it, it's like we had permission to do it.”

— State Medicaid Representative

## Health Resource Equity Statement as a Guide for Model Planning, Implementation, and Development

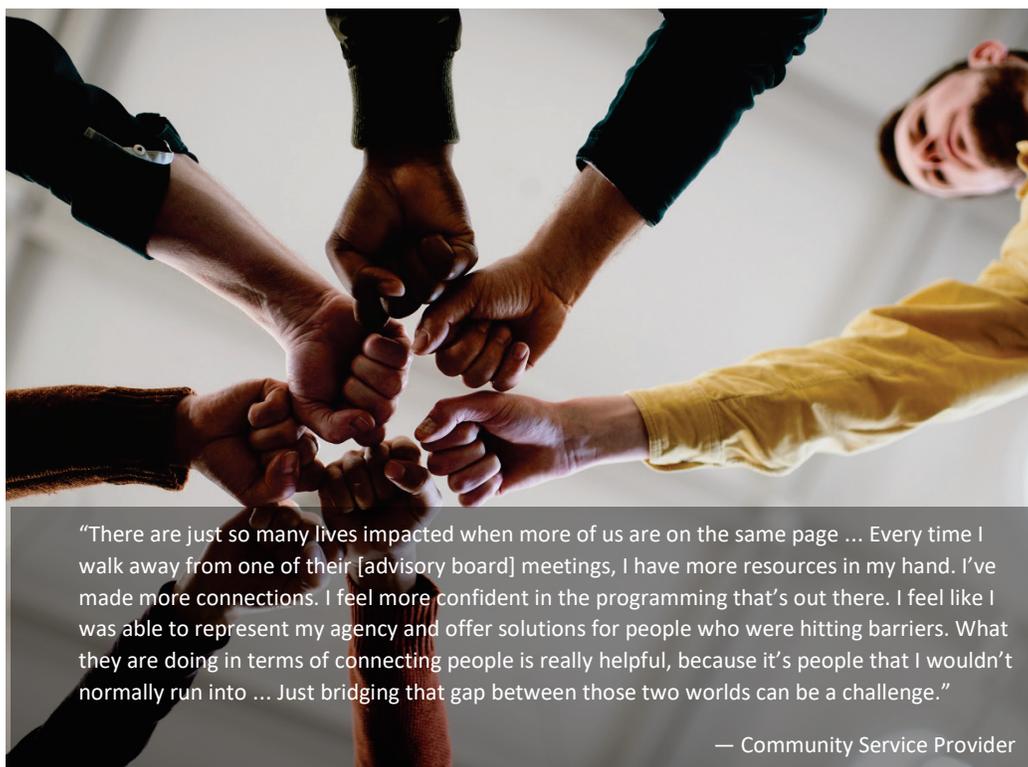
The AHC Model required that all bridge organizations prepare health resource equity statements (HRESs) as part of model implementation. The purpose of the HRES was to guide bridge organizations in identifying and targeting minority populations and people who were underserved, evaluating their inclusion in the model, and tracking progress on outcomes and their engagement throughout implementation. To explore how health equity was considered in AHC implementation, we conducted interviews in winter/spring 2022 that asked AHC Model

stakeholders and CDS leaders how equity statements were used, perceptions of progress toward health equity goals, how advisory boards considered health equity, and additional model strategies that may help address and improve health equity.

AHC Model leaders explained that equity statements informed how they collected and used data to inform model planning. For example, the equity statement was used to describe priority groups and subpopulations and to review data to identify needs and gaps to reach and engage priority populations. One AHC Model leader explained that population descriptions were then used to ensure selection of screening sites in locations where priority populations were being served. A couple of AHC leaders added that the equity statement guided their hiring of project staff to ensure those working on the model reflected and understood priority populations.

One way AHC Model leaders reported progress toward health equity was through ongoing model improvement, including engaging a wider variety of partners (e.g., Federally Qualified Health Centers; the Women, Infants, and Children program; Meals on Wheels), rural CDSs, and CSP organizations located closer to where priority groups lived and worked. These improvements also included adjustments to model processes, such as offering telephone outreach for referrals. AHC leaders further reported working with partners to obtain and analyze data to inform monitoring and improvements related to health equity goals, including one AHC leader who identified disparities in overall offers to screen and took steps to understand and address those disparities with CDSs. A few AHC leaders added that they were looking for ways to sustain a health equity focus in the future, including integrating SDOH into future health system goals.

Within the advisory board setting, health equity considerations were described as implied but not explicitly discussed. An AHC leader explained that “health equity is a theme that permeates the work of all of these people that are on our advisory board as well as ourselves, so we don’t sit and intentionally talk about definitions ... but we are always thinking about what populations are we missing? What do we need to do to make the work increase health equity?” One AHC leader added that they considered health equity through the involvement of advisory board members with lived experience, like priority populations served.



Still other opportunities AHC leaders identified to further advance health equity within the AHC Model included expanding screening to places other than CDSs and updating the screening tool to better identify subpopulations (such as adding questions about gender or sexual orientation to serve the LGBTQ+ population more effectively).

## Conclusions

Advisory boards were forums to report and advance Alignment Track requirements and helped build partnerships and develop familiarity between clinical and community providers, representatives who otherwise seldom interacted. Board meetings were reported to facilitate data sharing and develop members' knowledge about community gaps and resources to address HRSNs. Implementation of alignment was further supported by TA from the Innovation Center project officers and both formal (affinity groups) and informal (ad hoc outreach) opportunities for AHC stakeholders to connect and share best practices and strategies. The following exhibit outlines key challenges identified with implementing alignment activities and promising strategies reported for addressing those challenges. The exhibit also highlights overall lessons learned related to alignment implementation.

AHC stakeholders from both Alignment and Assistance Track bridge organizations reported developing QI plans; engaging in AHC-like initiatives; sharing data; and convening formal and informal advisory boards, collaboratives, or councils. In the Third Evaluation Report, we will complement the descriptive themes reported in this chapter by exploring if and how Alignment Track activities shaped the intended outcomes of ensuring community services were available to beneficiaries and responsive to their HRSNs.



- Some advisory boards experienced turnover among executive-level members, which disrupted engagement and momentum.

- AHC stakeholders described difficulty with engaging beneficiaries on advisory boards, including that beneficiaries could not attend meetings reliably.

- Nearly all QI plans had areas in need of strengthening based on the initial assessments in Y3.

- Bridge organizations needed to ensure they included minority populations and people who were underserved in the model.

- Where boards had participation from senior executive members, these stakeholders helped with efficient decision making.

- One bridge organization successfully included beneficiaries in advisory board meetings using a formal onboarding plan that included paid transportation.

- Having formal goals, structures, and roles (i.e., a CQI approach, QI facilitator, and an advisory board) supported data dissemination and deliberation.

- The HRES was a useful tool for monitoring program progress, improvement, and measurement of health equity outcomes.

- AHC Model leaders tracked progress toward health equity by engaging a wide variety of partners (e.g., Federally Qualified Health Centers; the Women, Infants, and Children program) and organizations located close to where priority groups lived and worked.

- AHC stakeholders may need both guidance and resources to help onboard new advisory board members.

- Advisory boards may need to provide additional supports to effectively engage beneficiaries and their caregivers on advisory boards.

- Coaching and training on QI methodologies and strategies may facilitate fidelity to QI planning and using data to inform implementation.

- Health equity was viewed by some AHC stakeholders as a tacit goal of the model. Engaging with the HRES intentionally in planning and monitoring may make the health equity focus more explicit.

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## Chapter 6: Screening and Referral for HRSNs

AHC Model bridge organizations and their CDS partners screened all Medicare and Medicaid beneficiaries to identify HRSNs and to connect those eligible for navigation to community services.

To evaluate model success, we needed to identify bridge organizations' effectiveness in screening beneficiaries for AHC Model and referral-to-services eligibility, implementation methods used, and challenges encountered. This chapter addresses Research Objectives 1 and 2, which seek to understand the context of the AHC Model and the approaches to implementation, respectively. Specifically, this chapter explores three research questions related to screening beneficiaries:

### Key Takeaways

- Over one million beneficiaries were screened: 18% of those screened were eligible for navigation.
- Bridge organizations confronted three screening challenges during the COVID-19 pandemic: 1) low visit volume, 2) insufficient staffing, and 3) less time for screening.
- Virtual screening, which helped alleviate staffing issues during the COVID-19 pandemic, was a unique approach to screening that could extend beyond the pandemic.
- Data and communication system issues posed challenges for bridge organizations, particularly with documenting referrals.

- How did bridge organizations and CDSs implement the AHC interventions (in this case, screening to identify AHC-eligible beneficiaries and referral eligibility within that group)?
- What kinds of unanticipated challenges arose during model implementation? How did bridge organizations respond to these challenges?
- What were the similarities and differences in responses between sites that have effectively implemented the model and those that struggled?

The quantitative findings are based on AHC screening and navigation data through December 2021 and results from an organizational survey of bridge organization staff administered from April through June 2020. The qualitative findings are based on semi-structured interviews with AHC stakeholders from all bridge organizations active at the time of data collection (from January through March 2021).

## Screening and Referral Rates

### The Percentages of Beneficiaries With an HRSN and Eligible for Navigation Increased Over Time

To assess the extent to which bridge organizations' screening activities reached the AHC-eligible population, we calculated the number of community-dwelling beneficiaries with a completed screening and the number and percentage of beneficiaries screened who were eligible for navigation (**Exhibit 6-1**). Just over one million (1,020,864) unique beneficiaries completed a screening between May 2018 and December 2021, more than double the number reported in the [First Evaluation Report](#) (482,967). Of those screened, approximately 37% had one or more core HRSNs compared to 34% reported in the [First Evaluation Report](#). Among screened beneficiaries, 18% also had two or more ED visits, making them navigation eligible, an increase from 15% reported in the [First Evaluation Report](#). Both navigation-eligible percentages are above the Innovation Center's estimate of 13% of screened beneficiaries being navigation eligible. Of those eligible for navigation, 29% were in the Assistance Track intervention group, and 58% were in the Alignment Track. The distribution of navigation-eligible beneficiaries by track changed only slightly from the [First Evaluation Report](#), when 29% were in the Assistance Track and 58% in the Alignment Track.



## Exhibit 6-1. Navigation Eligibility of Screened Beneficiaries

Bridge organizations had to screen a large number of beneficiaries to identify those eligible for navigation.



Source: AHC screening and navigation data, May 2018–December 2021.

Definitions: AHC = Accountable Health Communities; HRSN = health-related social need; IG = intervention group.

Other Notes: Navigation-eligible beneficiaries are community-dwelling beneficiaries with one or more core HRSNs and two or more emergency department visits in the 12 months before screening.

## The Percentage of Beneficiaries Eligible for Navigation Continued to Vary Widely Across Bridge Organizations

The number of unique AHC-screened beneficiaries varied substantially across bridge organizations, ranging from 6,702 to 114,652 (**Exhibit 6-2**, second column), as did the number of navigation-eligible beneficiaries across bridge organizations, ranging from 1,139 to 9,505 (third column). The percentages of each bridge organization's screened beneficiaries eligible for navigation ranged from 76% to 5% (fourth column). The percentage distribution, also shown as colored bars, is listed in descending order to highlight the relative screening efficiency of the bridge organizations, which is similar to that reported in the [First Evaluation Report](#). More specifically, it is possible that bridge organizations with lower numbers of screenings and higher percentages of navigation-eligible beneficiaries targeted the beneficiaries for screening they expected would be eligible for navigation. However, initial findings from the key informant interviews suggest instead that some bridge organizations targeted CDSs that served large volumes of navigation-eligible beneficiaries. The targeted CDSs might be EDs or Federally Qualified Health Centers where higher-risk beneficiaries tend to seek care or clinical providers that operate in communities with high rates of HRSNs.

## Exhibit 6-2. Number Screened and Number and Percentage Navigation Eligible

The number of screened and the percentage of navigation-eligible beneficiaries varied substantially across bridge organizations.

Bridge ID	Number screened	Number navigation eligible	Percentage navigation eligible		
				■ Alignment Track (AL)	■ Assistance Track (AS)
AL02	12,166	9,190	76	■	
AL26	6,702	4,761	71	■	
AL05	9,263	4,349	47	■	
AL23	19,597	7,729	39	■	
AL16	18,732	7,084	38	■	
AL20	24,737	7,502	30	■	
AS14	14,712	4,371	30		■
AL29	20,348	5,430	27	■	
AL28	16,430	3,978	24	■	
AL30	21,882	5,088	23	■	
AL22	16,977	3,773	22	■	
AS27	27,909	5,727	21		■
AS04	25,794	4,932	19		■
AS08	62,699	9,505	15		■
AS07	33,993	4,801	14		■
AL11	43,384	6,084	14	■	
AL18	48,546	6,672	14	■	
AL17	67,122	9,156	14	■	
AL10	36,761	4,714	13	■	
AS01	37,146	4,741	13		■
AL24	49,771	6,316	13	■	
AL12	51,529	6,188	12	■	
AS31	27,872	3,320	12		■
AL32	41,163	4,657	11	■	
AL19	35,710	3,904	11	■	
AS03	56,202	5,684	10		■
AS06	57,508	4,019	7		■
AS13	17,334	1,139	7		■
AS25	114,652	5,819	5		■

Source: AHC screening, referral, and navigation data, May 2018–December 2021.

Definitions: ID = identifier.

Other Notes: Navigation-eligible beneficiaries are community-dwelling beneficiaries with one or more core health-related social needs and two or more emergency department visits in the 12 months before screening.

The percentage navigation eligible is the percentage of beneficiaries screened by each bridge organization who are eligible for the AHC Model.

# COVID-19 Impacts on Screening and Referral

## Screening and Referral Rates Withstood the COVID-19 Pandemic

Between January 2019 and October 2019, the total number of beneficiaries screened increased from about 40,000 to about 50,000 a month. After October 2019, the trend turned downward, which may have been partly attributable to the holiday season (**Exhibit 6-3**). A similar drop between October and December 2020 occurred but was less dramatic, possibly due to changes in the screening modes used (see the Pandemic-Related Staffing Shortages Led to Changes in Screening Procedures section). Immediately following the start of the COVID-19 pandemic in February 2020, the number of beneficiaries screened decreased markedly. This sharp decrease continued through April 2020, the lowest point in the observation period, after which the number of beneficiaries screened increased but never fully recovered to pre-pandemic levels. Screenings decreased again after April 2021. The average number of screenings per month before the pandemic (January 2019 to February 2020) was 43,305; during the pandemic (May 2020 to March 2021), the average number of screenings per month was 39,025.

Following the start of the COVID-19 pandemic, screening trends varied notably among bridge organizations. Just over half (53%) of bridge organizations experienced a greater than 10% decrease in screenings when comparing the period after the start of the pandemic with the period before: one-third (35%) of bridge organizations experienced a greater than 30% decrease in screenings when comparing the same time periods. In addition, another 35% of bridge organizations experienced a greater than 10% increase in screenings.

One plausible reason why some bridge organizations experienced decreases in the numbers of beneficiaries screened after the start of the pandemic may have been reduced visit volume within CDSs, which resulted in fewer opportunities to screen beneficiaries. One bridge organization discussed how the CMS decision to allow greater use of telehealth visits by Medicare providers in general helped them maintain their screening levels (CMS, March 2020). In addition, all bridge organizations were granted by the Innovation Center flexibility in the allowable times to screen pre- and post-visit, which may also have helped screening rates rebound. The flexibilities for screening were a longer period of time when pre-visit screening could be conducted from 5 days to up to 2 weeks before the visit and a longer period of time when post-visit screening could be conducted from 5 days to 1 year. A second plausible reason for the decreases in beneficiaries screened after the start of the COVID-19 pandemic may be a steep reduction in ED visits, which may have mostly affected those who screened beneficiaries in the ED; ED screenings rebounded somewhat in 2021 (Melnick et al., 2022).

We also examined the factors that may have contributed to the decline in screenings toward the end of 2021. Three bridge organizations stopped screening before December 2021, and when they were excluded from the analysis, the drop in screenings toward December 2021 remained. Some bridge organizations may have limited their screening to focus their attention on their navigation-eligible beneficiaries and resolve their HRSNs before the model's expected end in April 2022.<sup>16</sup> Another contributing factor to the decline in screening may have been the loss of screening and navigation staff to other positions as the model began to wind down.

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<sup>16</sup> Bridge organizations were given the opportunity to request a no-cost extension in March 2022. Eighteen bridge organizations chose to extend their participation in the model by 3 to 12 months.

### Exhibit 6-3. Number of Beneficiaries Screened Over Time

Bridge organizations were able to recover somewhat after an initial drop due to COVID-19, but the number of beneficiaries screened declined toward the end of 2021.



Source: AHC screening and navigation data, January 2019–December 2021.

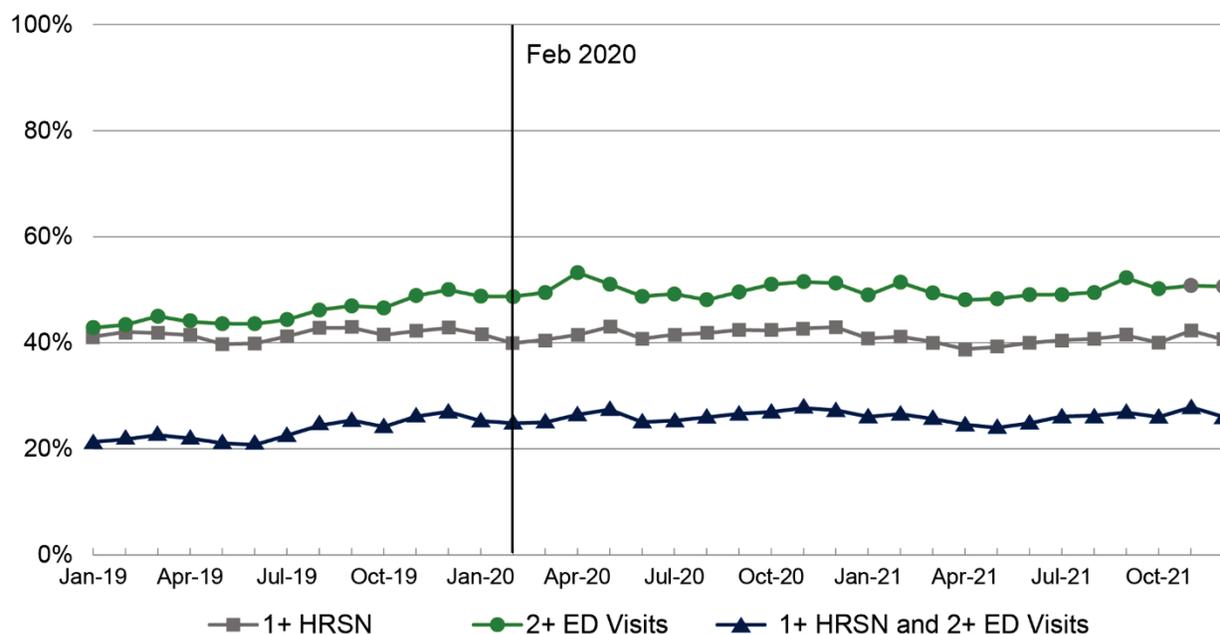
Other Notes: Care New England Health System and Delta Health Alliance voluntarily terminated participation during the initial phase of implementation and were excluded from the analyses.

As noted above, ED visits declined after the start of the COVID-19 pandemic. Because one of the eligibility criteria for navigation is two or more ED visits within the previous 12 months, we considered if over time fewer beneficiaries would meet that eligibility criterion—resulting in fewer beneficiaries being navigation eligible. At the same time, the expectation was that the pandemic might increase the extent of some HRSNs (including food, housing, and transportation). Indeed, bridge organization staff mentioned the decrease in visits where screening could be conducted, coupled with an increase in need.

To explore the possibility that COVID-19 had, in fact, reduced navigation eligibility rates, we compared the trends in the AHC Model’s eligibility criteria (i.e., one of more HRSNs or two or more ED visits) and the combined criteria needed to make a beneficiary eligible for navigation services. Between January 2019 and December 2021, the percentage of beneficiaries with two or more ED visits was approximately 50%, those with one or more HRSNs was approximately 40%, and those with one or more HRSNs and two or more ED visits combined (i.e., navigation eligible) was approximately 25% (**Exhibit 6-4**). These percentages were relatively stable over time: the percentage with two or more ED visits increased slightly *after* the start of the COVID-19 pandemic. These findings indicate that concern about any effect of COVID-19 on reducing navigation eligibility was unfounded. Although the number of screenings decreased, the percentage of navigation-eligible beneficiaries remained stable.

## Exhibit 6-4. Navigation Eligibility Criteria Over Time

Navigation eligibility remained relatively stable over time with a slight uptick in those with ED visits after the start of the COVID-19 pandemic.



Source: AHC screening and navigation data, January 2019–December 2021.

Definitions: ED = emergency department, HRSN = health-related social need.

Other Notes: Care New England Health System and Delta Health Alliance voluntarily terminated participation during the initial phase of implementation and were excluded from the analyses. Beneficiaries with one or more core HRSNs and two or more ED visits were navigation eligible.

## Pandemic-Related Staffing Shortages Led to Changes in Screening Procedures

The COVID-19 pandemic led to staffing challenges because staff within CDSs who had been responsible for HRSN screening were reassigned to other tasks related to COVID-19. Some CDSs furloughed staff, which affected their ability to implement HRSN screening. Staff also experienced burnout, turnover, and sickness. Additionally, the intern or volunteer programs several bridge organizations had previously relied on to conduct HRSN screening (see **Chapter 3**) were suspended during COVID-19.

The pandemic-related staffing shortages offered an opportunity to rethink the entire process for screening and navigation—to ease the burden on clinic staff and maintain screening activities. Many bridge organizations shifted screening responsibility from CDSs to staff at the bridge organization level. Centralizing screening within bridge organizations required significant changes in how screening was conducted. Bridge organizations streamlined workflows; redefined roles for navigators and screeners (e.g., having the same individuals provide both services, facilitated by providing additional training to staff); recruited new staff members; and shifted screening to virtual, largely telephonic, formats. Some bridge organizations found that using the same staff for both screening and navigation enabled staff to develop a deeper rapport with beneficiaries and mitigated challenges associated with handing off beneficiaries for navigation. These bridge organizations felt that more experienced staff—such as navigators with more training in areas such as motivational interviewing—had better screening results. Some bridge organizations made additional changes, such as when they screened and how they identified the most likely individuals to screen.

COVID-19 also required bridge organizations to find alternative methods for screening patients. CMS created waivers on telehealth and time allowed to screen pre- and post-visit, both of which allowed bridge organizations to shift to virtual methods. With the transition to virtual screening, bridge organizations implemented new modes for contacting patients and conducting screening, including mailing of paper-based screeners, telephone screening, emails, patient portals, and text messaging.

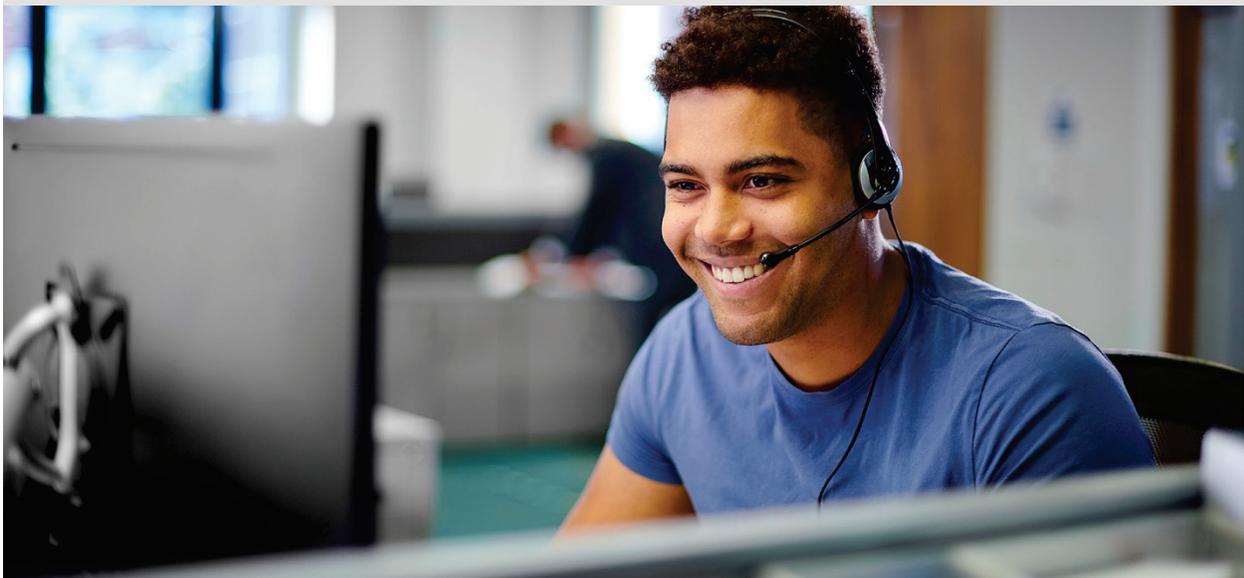
“It was very hard because they were calling people and we found the best way to call people was not when they were in the emergency department. So our navigators went above and beyond. They would go in to the EHR at midnight and write down numbers of people who had been there at night, and then the next day they would call them.”

— Bridge Organization Lead

Despite challenges, some bridge organizations felt that centralized, virtual screening was equally as effective as in-person screening within CDSs or more so—and more efficient for both bridge organization staff and beneficiaries. Other bridge organizations, however, expressed frustration with virtual screening, particularly given challenges reaching patients via telephone, and that the virtual method was not well suited for staff hired specifically for their in-person skills.

## Innovative Use of Virtual Screening Methods

One of the more innovative virtual screening methods was text messaging, which two bridge organizations employed. The system sent the patient a text message containing a link to an online screener for the patient to fill out on their own. One of the two bridge organizations had used text messaging as an option from the beginning of the model; the other one quickly adopted a text-messaging solution at the start of the pandemic. The pandemic created a lot of stress for health care providers, and the text-messaging platform was seen as a way to transfer some of the screening burden from the CDS to the bridge organization. For the bridge organization that created its text-messaging system in response to the pandemic, the system had an immediate, positive effect on screening volume.

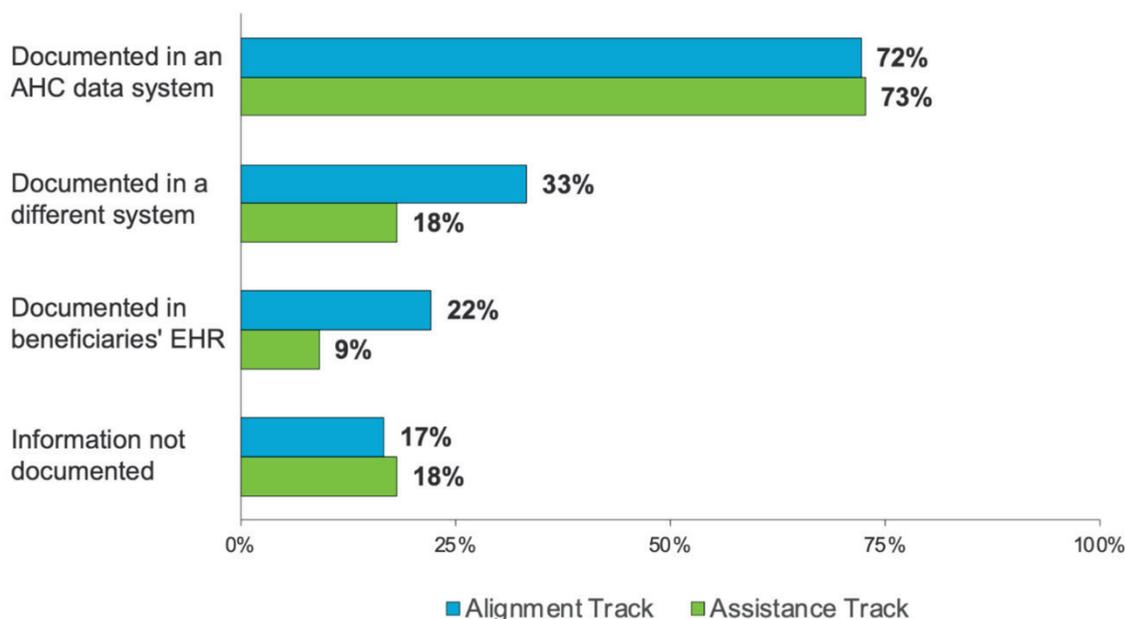


## Data and Communication System Challenges

Four data and communication system issues continued to present challenges for bridge organizations. First, the practices bridge organizations used for referral data documentation (i.e., which CSP the beneficiary is referred to and if the beneficiary connected with that CSP) varied widely (**Exhibit 6-5**). Over 70% of bridge organizations reported documenting their referrals in the AHC data system. Nearly 20% of bridges reported not documenting their referrals at all. Alignment Track bridge organizations were twice as likely to document their referrals in their EHR or another data system as their Assistance Track counterparts. One commonly used proprietary system employed by five bridge organizations captured a wide variety of communications, enabling referrals to be documented and shared across any of the partners connected to the system. As discussed in the [First Evaluation Report](#), bridge organizations without this capability asked for it to be added to their systems, because knowing referral outcomes would help CDSs engage more with the program, enabling them to see the impact of their efforts and better informing a given patient's next visit (see Chapter 7 for more information on the usefulness of CSP services in fulfilling beneficiaries' needs).

### Exhibit 6-5. Referral Data Documentation Practices by Track

Alignment Track bridge organizations were more likely than Assistance Track bridge organizations to use EHRs or other data systems to document referrals.



Source: Survey of Bridge Organizations, Question BO 24. Where is the CSP referral documented?  
Definitions: AHC = Accountable Health Communities; EHR = electronic health record.

The second data and communication system issue was difficulties tracking the availability of resources, particularly during the pandemic. The operating hours and availability of resources, such as when food is available at a local food bank, were chaotic in the early months of the pandemic. The best way to track resource availability was through alternative communication channels (e.g., using social media to track needs). However, some providers did not allow social media platforms to be used on work systems. Bridge organizations need to consider these prohibitions and employ a broad range of communication channels in the future.

The third issue was that CRIs required a great deal of updating following the start of the pandemic,<sup>17</sup> partly because of an increased availability of resources for addressing needs. These changes varied by type of need and location. For the most part, updating CRIs was not mentioned as a difficult task, but rather a reflection of the pace of change brought about by the pandemic.

The fourth data and communication system issue was that bridge organizations continued to encounter difficulties working with the AHC data system, such as delays in receiving the official screening counts from CMS, which

often failed to match the data the bridge organizations were submitting. In addition, the data available from the AHC system must be exported to another system for analysis. A few bridge organizations were unable to connect their systems to the AHC data system, requiring them to enter screening, referral, and navigation data into their own systems and into the AHC data system separately. This lack of integration was exacerbated by the delayed AHC data system rollout at the start of the model. One bridge organization suggested that an integrated system that included dashboards would be more useful and efficient.

“I feel like we keep pretty good tabs on it and keeping it updated and maintaining that information. As I mentioned earlier, we had the kind of the extra guides for COVID specific resources and things that have changed with the pandemic, but I feel like we continue to learn about new resources and updated. I think we're all pretty good about keeping an eye on the news and just kind of being aware of when organizations close or when significant things change. I mean, it's a living document that's constantly being updated.”

— Bridge Organization Lead

## Conclusions

As of December 2021, bridge organizations had screened over one million beneficiaries. As the percentage of those with one or more HRSNs and two or more ED visits increased over time, the percentage of those screened who were eligible for navigation reflected that increase. Wide variability in screening rates and in those eligible for navigation among bridge organizations persisted.

Screening rates suffered a large disruption at the onset of the COVID-19 pandemic but overall recovered quickly. This recovery in screening rates was due, in part, to the provision of pre- and post-visit screening flexibilities and bridge organizations developing strategies to ensure they could continue screening and referring, while adjusting to fewer staff, less time to screen, and fewer in-person opportunities. These adjustments included rethinking the processes and employing virtual strategies. Bridge organizations reported several data and communication system issues that need resolution to help the AHC Model run more efficiently. The following exhibit outlines key challenges faced in conducting screening, promising strategies reported for addressing those challenges, and key lessons learned related to screening implementation.

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<sup>17</sup>The community resource inventories was a required feature of the AHC Model that is a database of available resources in the community for beneficiaries to use.



- The COVID-19 pandemic put numerous strains on the health care system that affected the ability to screen patients.

- Data and communication systems presented challenges, such as tracking available resources and documenting screening and referrals, which put higher than expected time demands on staff.

- Bridge organizations centralized the screening and referral process to alleviate provider burden.

- Using virtual screening, such as telephone calls, patient portals, and text messaging, was a nonintrusive way to increase screening that will have utility beyond the COVID-19 pandemic.

- Flexibility in screening location (telehealth) and time (more time pre- and post-visit to conduct screening) is necessary to ensure long-term success in meeting screening and navigation goals.

- Changes in resource availability require a multifaceted approach to ensure the best available information is being used.

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## Chapter 7: Navigation and HRSN Resolution

In the AHC Model, the primary intervention was navigation to assist eligible beneficiaries to resolve their HRSNs. Navigation included an in-depth assessment of social needs, planning, referral to community services, and follow-up until the needs were resolved or determined unresolvable.

The first half of this chapter explores implementation of navigation—including navigation acceptance, the COVID-19 pandemic’s impact on navigation, and promising strategies and lessons learned from bridge organizations. The second half of the chapter explores the effectiveness of navigation, including leveraging community resources to address beneficiaries’ HRSNs, rates of HRSN resolution, connection to CSPs, beneficiary perceptions of community services, and challenges to and facilitators of HRSN resolution. The chapter builds on findings from the [First Evaluation Report](#) to add insights from a second round of interviews with bridge organization leads in the fifth year of AHC Model implementation, along with perspectives from CSPs and beneficiaries.

### Key Takeaways

- Bridge organizations increased navigation acceptance rates while supporting their navigation workforce and adapting navigation approaches during the COVID-19 pandemic.
- Overall, navigation in the AHC Model did not increase connection to community services or HRSN resolution 6 months after screening. Gaps between community resource availability and beneficiary needs may have reduced the impact of navigation.
- Roughly half of beneficiaries in the AHC Model reported using community services, and this did not differ by receipt of navigation or track.
- Black beneficiaries in the Assistance Track intervention group were more likely than those in the control group to report using community services and resolving their food needs.

(continued)

This chapter addresses Research Objectives 1 and 2, which seek to understand the context of the AHC Model and the approaches to implementation, respectively. Specifically, this chapter explores navigation and HRSN resolution related to five research questions:

- How are bridge organizations implementing AHC interventions?
- How engaged are CDSs and other key stakeholders (i.e., CSPs) in implementing the AHC Model?
- What kinds of unanticipated challenges arose during model implementation?
- How do the types and amount of community resource availability affect the delivery of the AHC interventions?
- Are there differences in findings for key outcomes by subpopulations based on, for example, clinical characteristics, health insurance (e.g., Medicare, Medicaid, dually eligible), social needs, sociodemographic characteristics, contextual, organizational, or other key factors?

Quantitative findings are based on four data sources: 1) AHC screening and navigation data (May 2018–December 2021); 2) results from an organizational survey of bridge organization staff (January–May 2020, January–March 2021); 3) results from a survey of CSPs (January–May 2020, July–August 2020); and 4) results from a follow-up survey of beneficiaries eligible to receive referral and navigation under the AHC Model, administered roughly 6 months after their initial screening (January 2020–January 2022). Qualitative findings are based on semi-structured interviews with three groups of AHC stakeholders: 1) all bridge organizations active at the time of data collection, 2) beneficiaries enrolled in the AHC Model, and 3) CSPs participating in the AHC Model. (See **Appendixes A** through **E** for additional details on the methods for the analysis reported here.)

## Most Navigation-Eligible Beneficiaries Accepted Navigation

In the AHC Model, bridge organizations referred beneficiaries who have an HRSN and two ED visits in the prior year to navigation. Navigators were expected to contact the beneficiary within 2 weeks of the screening visit. Once the navigator reached a navigation-eligible beneficiary by telephone, in person, or text message, the two discussed the beneficiary’s HRSNs and established an action plan to address those social needs. The beneficiary or navigator then set up an appointment with one or more CSPs to support the beneficiary’s access to resources. This process applied to all navigation-eligible beneficiaries in the Alignment Track and those randomly assigned to navigation in the Assistance Track. In that track, the control group received a tailored referral to community services but no navigation assistance.

Bridge organizations reported in the organizational structure survey using a variety of modes to conduct navigation, including telephone, face-to-face, and text messages. When surveyed between April and June 2020 (i.e., during the onset of the COVID-19 pandemic), almost all bridge organizations (86%) reported difficulties reaching beneficiaries after they screened eligible for navigation. To address this issue, some bridge organizations embedded navigators in hospitals and other clinical settings to build in-person rapport before attempting navigation by phone.

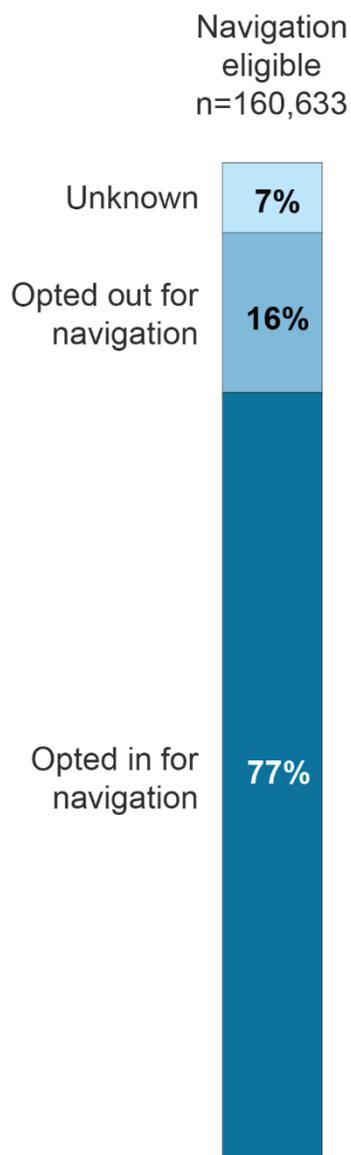
## Key Takeaways (continued)

- Nearly half of beneficiaries reported resolving a housing, utility, or transportation need, regardless of receipt of navigation or track.
- Beneficiaries in both tracks experienced more persistent food scarcity than other HRSNs. Roughly one in four beneficiaries reported resolving their food need.
- In addition to AHC navigation, beneficiaries also relied on resources unrelated to the AHC Model, including family, friends, and case workers to resolve HRSNs.
- Over a third of beneficiaries with closed cases had resolved at least 1 need and a quarter had resolved all needs.

Despite the challenge of connecting with beneficiaries during the onset of the COVID-19 pandemic reported by bridge organizations, AHC screening and navigation data demonstrate that the overall acceptance of navigation by beneficiaries was still high. Most navigation-eligible beneficiaries (77%) opted in for navigation services (**Exhibit 7-1**), slightly higher than the acceptance rate (74%) reported in the [First Evaluation Report](#); 16% opted out of navigation. The remaining 7% could not be identified as either opting in or out of navigation services because data were missing (including the possibility of not having been contacted and offered navigation services).

### Exhibit 7-1. Navigation-Eligible Beneficiaries' Opt-in Status

Most navigation-eligible beneficiaries opted in for navigation services.



Source: AHC screening and navigation data, May 2018–December 2021.

To understand why some beneficiaries opted out of navigation, we coded the reasons documented by navigators. As noted previously, the opt-out rate across bridge organizations was 16%. However, opt-out rates among bridge organizations varied from 0% to 37%. This variability presents an opportunity for further research to maximize program reach and effectiveness. It is important to note that if a beneficiary was unreachable after multiple attempts, navigators were to code the beneficiary as having opted out in the AHC Data System and to add a note indicating the beneficiary was unreachable. The reasons for opting out were available for 63% of those who opted out. Navigators documented the following primary reasons: the beneficiary was not interested in receiving assistance (52%), the beneficiary was already receiving help (11%), and the beneficiary could not be reached/contacted (28%).

### COVID-19 Pandemic Impacts on Navigation Implementation

All bridge organizations reported that the COVID-19 pandemic affected navigation implementation (**Exhibit 7-2**). Most bridge organizations (86%) encountered reduced availability of or access to CSPs; 75% slowed navigation activities or ceased them altogether. Over one-third of bridge organizations (36%) redeployed staff for COVID-19 response efforts, and close to a third (32%) experienced staff shortages due to illness or caretaking responsibilities.

Bridge organizations responded to the pandemic by conducting navigation virtually, cross-training screeners to begin navigation

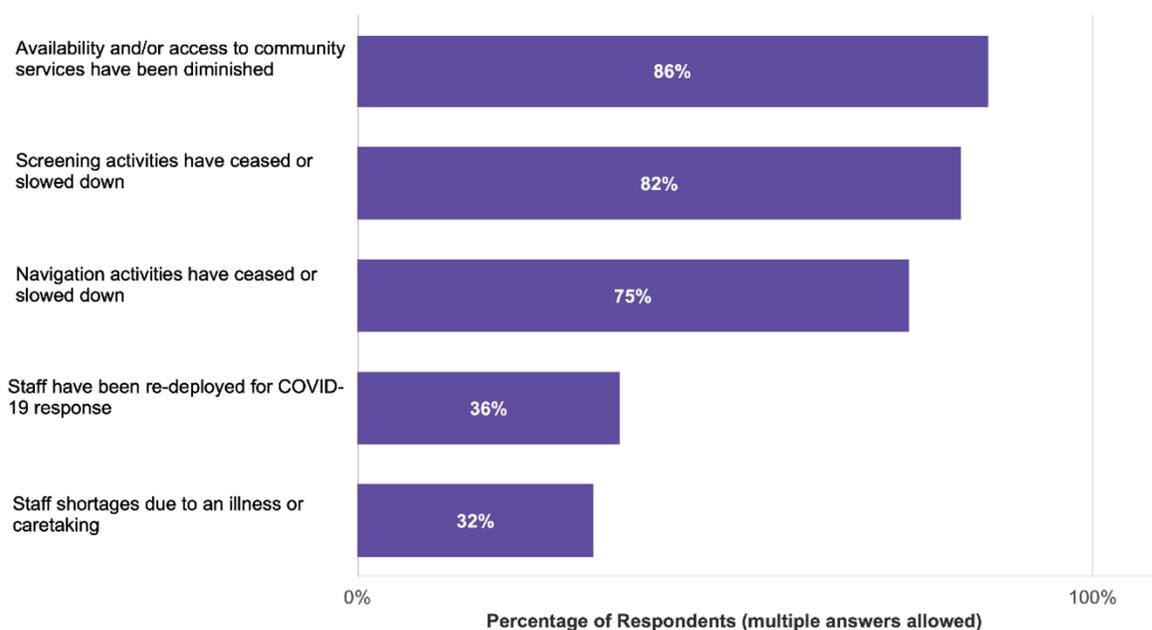
during the initial screening contact, streamlining navigation workflows, and adding innovative outreach approaches for navigating beneficiaries. (For details on how the same strategies were used for screening, see **Chapter 6.**)

## Navigation Became Fully Virtual

Before the pandemic, 86% of bridge organizations conducted navigation over the phone, 24% through face-to-face meetings, and 14% through text messaging. To support social distancing and public health guidance once the COVID-19 pandemic began, all bridge organizations shifted to entirely virtual navigation through the telephone and other methods. This shift affected bridge organizations differently depending on how they conducted navigation before the pandemic and their ability to switch to virtual methods.

### Exhibit 7-2. How the COVID-19 Pandemic Affected Navigation Implementation

Most bridge organizations reported diminished access to community services and ceasing of navigation activities.



Sample Size: The total N was 29 bridge organizations (11 Assistance Track and 18 Alignment Track).

Source: Survey of Bridge Organizations.

Time Frame: April–June 2020.

Definitions: COVID-19 = coronavirus disease 2019.

Qualitative interviews revealed bridge organizations’ perspectives on how the pandemic affected navigation delivery in both negative and positive ways.

Many bridge organizations described how, during the onset of the pandemic, shifting to virtual navigation challenged navigators’ ability to contact and build trust with patients. One bridge organization described placing navigators in EDs as “our best way to engage patients and take the time necessary to connect with them.” Shifting to telephonic navigation diminished navigators’ ability to follow up with navigation-eligible beneficiaries and decreased beneficiaries’ navigation acceptance rates. The

“It’s definitely impacted people’s ability to do any sort of face-to-face engagement which is part and parcel one of the major strengths of navigation or community health worker type services. And not being able to meet face-to-face sort of compromises the ability to build a trusting relationship and really get information from folks.”

— State Medicaid Representative

same bridge organization described their navigators as “more accepting of a decline” from beneficiaries over the phone than in person. Another bridge organization, which hired community health workers to serve as navigators, shared that these navigators often met people face-to-face at a public location or the beneficiary’s home before COVID-19. As a result of the pandemic, they shifted all their navigation to the telephone, thus losing the feeling of connection enabled by face-to-face contact.

In contrast, several bridge organizations reported finding it easier to contact beneficiaries when the pandemic forced contact by phone. A major theme reported in the [First Evaluation Report](#) was difficulty contacting navigation-eligible beneficiaries after they had opted into navigation. But only a few bridge organizations mentioned this as a difficulty during interviews after the pandemic’s onset. A few bridge organizations hypothesized that pandemic-induced job loss made it easier to reach beneficiaries on their home phones. As one bridge organization shared, “People are staying home, so people are more inclined to pick up their phones. So, we are seeing a little bit of that contribute to answering calls.” Another bridge organization suggested that, because navigation-eligible beneficiaries were initially screened over the phone, as opposed to in person, navigators were more likely to connect with the beneficiary by phone because it was no longer a cold call.

Bridge organizations also described shifting to remote working as increasing navigation quality and efficiency. One bridge organization described the competing demands navigators faced when working in the ED, remarking that navigators were less distracted and thus could navigate more efficiently when working remotely. A few bridge organizations cited increases in completed action plans as evidence that follow-up was more efficient.

“The timeliness or completion of action plans has increased significantly. I think the average went from like 42% this time last year to now it’s like 85%. And then for our internal staff, it’s closer, I want to say it’s close to like 98%. So, they’ve just been really efficient in their ability to just to knock it all out [the initial call and action plan development] in one shot. So that’s probably the biggest change to our navigation process.”

— Bridge Organization Lead

One bridge organization attributed their increased efficiency to no longer having “time where people are traveling back and forth to clinical delivery sites or trying to play phone tag with beneficiaries to engage them in navigation.” Another bridge organization mentioned that conducting navigator trainings virtually rather than in person, as had been done before the pandemic, saved commuting time, which was significant given that some navigators might have to travel 200 or 300 miles for in-person clinic training.

## Staff Were Redeployed and Screeners Cross-Trained for Navigation

Many bridge organizations reported staffing changes such as nurse navigators being pulled for COVID-19 response efforts (including running COVID-19 testing centers and COVID-19 vaccination clinics). Before the pandemic, several bridge organizations relied on student interns and volunteers to conduct screenings. A few also relied on volunteers to conduct navigation, but many of those internship and volunteer programs did not transition to virtual experiences. When CDSs were closed to nonessential personnel during the onset of the pandemic, bridge organizations lost their volunteer/intern staff members. These staffing changes contributed to the need for bridge organizations to develop other strategies to support navigation, as described below.

Many bridge organizations mentioned cross-training screeners to begin navigation during the screening contact. The reason behind this training was twofold: to create staffing efficiencies to address staff shortages in the wake of COVID-19 and to increase beneficiary buy-in to navigation by starting

“I think what we’ve done around navigation is we try to front-load it. So, it’s like when you’ve got them on the phone either in the first contact or whatever it is, address as many needs as you can, clarify and make everything as clear as you can in that meeting ...”

— Bridge Organization Lead

navigation and the development of the action plan during the first contact, as illustrated in the quote by the bridge organization lead. One bridge organization shared that the screeners were interested in getting more involved in

the navigation process. In response, the bridge organization trained screeners to address less complex (i.e., food and utility) needs. Once in place, the new process allowed navigators more time to work with beneficiaries with complex needs, which increased the number of needs successfully resolved. Another bridge organization noted that, whenever they had a navigation-eligible beneficiary on the phone, it was best to collect as much information as possible in the initial contact.

## New Beneficiary Outreach Methods Were Deployed

After the initial onset of the COVID-19 pandemic—and the resulting decrease in navigation activities due in part to the shift to virtual navigation—bridge organizations adapted their workflows in innovative ways. “Desperation breeds innovation” was one bridge organization’s verdict. Bridge organizations’ ways of responding to the COVID-19 pandemic included several that improved navigation quality by streamlining navigation workflows. Although some of the improvements could have happened without COVID-19, for many, the pandemic catalyzed the transformation of their navigation workflows.

To respond to the COVID-19 pandemic and shifting AHC beneficiaries’ needs, bridge organizations used a range of new strategies to engage beneficiaries in navigation (**Exhibit 7-3**). Some bridge organizations used technology-oriented solutions such as issuing navigators cell phones preprogrammed to come up as “Community Navigator” on caller ID. Other navigators called beneficiaries twice in a row to demonstrate it was not a spam call because a second spam call would not be made within a few minutes if the first spam call had not been answered. Still other navigators left a voice mail or sent a text message first, so the number was familiar to the beneficiary on the second attempted contact. One bridge organization reported calling emergency contact and secondary contact numbers to reach beneficiaries. Several bridge organizations mentioned using virtual meeting technology for beneficiaries interested in video calls. Two bridge organizations reported success using text messaging in working with beneficiaries, but a third, after an unsuccessful pilot, stopped using text messaging as a strategy. A few bridge organizations mentioned using postcards and other mailings to reinforce information shared during phone calls.

A few bridge organizations adapted their outreach language to acknowledge how the COVID-19 pandemic might be affecting beneficiaries, which one bridge organization described as “using this COVID friendly language in our interactions: ‘During these difficult times, we want to reach out to all of our patients because we care about your needs both inside and outside of the hospital.’” The language changes were well received. One bridge organization shared, “a lot of patients are very grateful that somebody’s calling to check on them.”

### Exhibit 7-3. Outreach Strategies Used by Bridge Organizations

Bridge organizations used technology, employed multiple methods, and shifted outreach language to engage beneficiaries in navigation.

Type of Strategy	Strategy
Technology oriented	Programmed “Community Navigator” to come up on caller ID
	Conducted virtual meetings using the Zoom platform to create “face-to-face” connection
Using multiple methods	Emailed and called beneficiaries
	Texted beneficiaries before calling
	Mailed postcards to beneficiaries to reinforce information shared during telephonic navigation

(continued)

### Exhibit 7-3. Outreach Strategies Used by Bridge Organizations (continued)

Type of Strategy	Strategy
Calling multiple times/numbers	Called twice in a row so number would not come up as spam
	Left a voice mail, then called again so number would be recognized
	Called emergency and secondary contact numbers
Shifting outreach language	Adapted outreach language to acknowledge the COVID-19 pandemic

Definitions: COVID-19 = coronavirus disease 2019; ID = identification.

## Strategies to Reduce Burnout and Stress on the Navigation Workforce

Staff burnout, stress, and turnover were key workforce challenges reported in the [First Evaluation Report](#). These challenges continued and were sometimes exacerbated by COVID-19, as noted. Transitioning to working remotely from home with the accompanying workflow changes, while also balancing family needs, contributed to staff stress. Several bridge organizations reported patient navigators feeling overwhelmed by the complexity of cases and by beneficiaries’ feelings of stress and isolation, which increased with the pandemic. As bridge organizations identified these issues, they developed strategies that focused on supporting staff and addressing staff concerns (**Exhibit 7-4**). The first five strategies in the exhibit were already noted in the [First Evaluation Report](#); they are included here because their use continued. The last three strategies in the exhibit were newly implemented.

### Exhibit 7-4. Strategies to Address Staff Burnout and Stress

Bridge organizations enhanced teamwork, provided specialized training, and organized work breaks, on top of previously used strategies, to address staff burnout and stress.

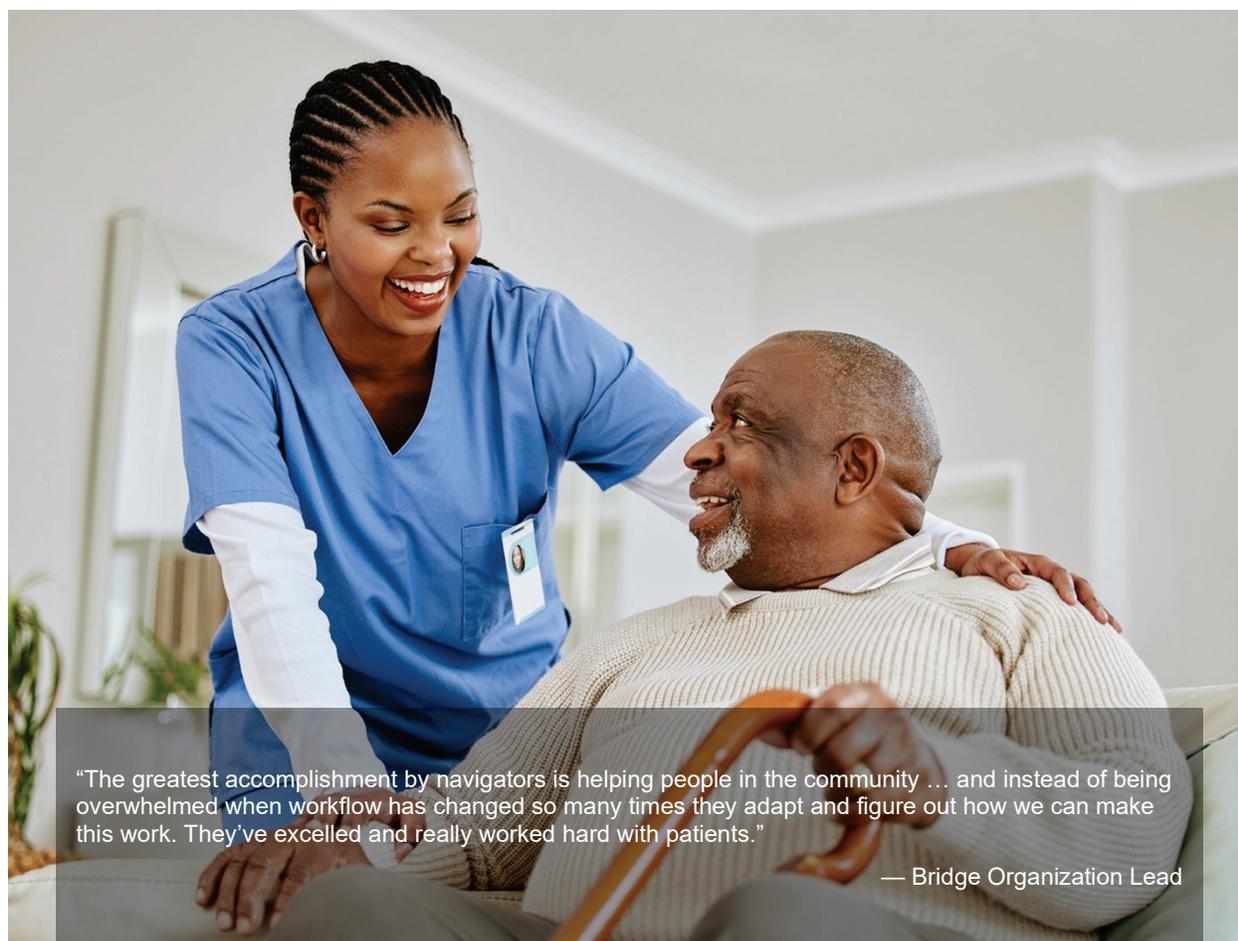
Strategies	What This Entailed	Why/How It Helped
Promotion	Recruit prior interns for paid roles Transition screening staff into navigation roles	Increased staff retention creates a workforce pipeline
Creation of sustainable jobs	Hire bridge organization staff into permanent positions	Increased staff commitment by enabling staff members to perceive their position within an organization as permanent
Streamline onboarding	Improve efficiency in onboarding new staff to reduce staff burden	Reduced training burden on existing managers and staff
Creation of screening or navigation manager position	Ensure supervision and training for screening, referral, and navigation staff	Provided direct and dedicated supervision and support, perceived as increasing professionalism/competency across staff
Feedback on impact of work	Ensure screening/navigation staff hear about positive beneficiary experiences post-navigation (e.g., success stories)	Improved staff engagement and morale Provided a sense of being a part of something that could be positive change
Enhancing teamwork	Redistribute work across navigation staff for more equal case distribution and increase staff huddles to discuss cases, report out activity for the day, and check in with one another	Assisted with equitable distribution of cases and promoted the sense that staff members were all “in this together” and collaborating to meet milestones

(continued)

### Exhibit 7-4. Strategies to Address Staff Burnout and Stress (continued)

Strategies	What This Entailed	Why/How It Helped
Specialized training	Provide mental health first aid program training and motivational interview training for navigators	Gave staff necessary tools to assist beneficiaries with social and emotional isolation and to improve work with beneficiaries remotely by phone
Organized work breaks	Hold virtual lunches and holiday parties and allow staff to call a “time-out” when they need to take a break from the phones	Combated navigator fatigue by letting staff step away from work for a short time

The newly implemented strategies resulted in navigators receiving additional training, working as a team in distributing the calls among staff, and checking in with one another during huddles. During calls, navigators found beneficiaries thankful that someone had reached out to them during this time. One bridge organization put it this way: “As we’ve been able to resume our processes and communication with the beneficiaries, we’ve actually heard from a number of people how appreciative they are that we’re doing this and that we’re able to provide assistance with these services and have really been quite kind and appreciative of that.” This beneficiary feedback appreciating the impact of navigators’ work in addressing beneficiaries’ needs raised navigator morale and contributed to their sense of helping people in the community.



“The greatest accomplishment by navigators is helping people in the community ... and instead of being overwhelmed when workflow has changed so many times they adapt and figure out how we can make this work. They’ve excelled and really worked hard with patients.”

— Bridge Organization Lead

## Connection to Community Services and Resolution of HRSNs

Once a navigation-eligible beneficiary agreed to navigation, the beneficiary and navigator collaboratively developed an action plan to connect the beneficiary with one or more CSPs, with the goal of ultimately resolving the beneficiary's HRSNs. Findings on beneficiary use and beneficiary perceptions of community services, HRSN resolution, and challenges and facilitators regarding HRSN resolution shed light on the extent to which this goal was reached.

### Beneficiaries Had Similar Use of Community Services Whether or Not They Were Offered Navigation

The follow-up survey of beneficiaries eligible to receive referral and navigation under the AHC Model was conducted roughly 6 months after their initial screening. Beneficiaries were asked to report on their HRSNs, health and mental health status, use of community services to get help for HRSNs, and the perceived effectiveness of community services in addressing HRSNs. For the Assistance Track impact analysis, the evaluation used random assignment to create an intervention group (i.e., randomly assigned Assistance Track beneficiaries who were offered a community referral summary [CRS] and navigation) and a control group (i.e., randomly assigned Assistance Track beneficiaries offered only a CRS). The survey response rates were 27% for the intervention group and 26% for the control group, with few differences between respondents and nonrespondents in either group.<sup>18</sup> For the Alignment Track, which had no control group, the response rate was 24%.<sup>19</sup> Response rates and beneficiary characteristics were broadly similar in the Assistance Track intervention and control groups, and weights and risk adjustment helped account for nonresponse bias. However, respondents in both groups were older than nonrespondents and were more likely to be Medicare beneficiaries than Medicaid beneficiaries or dually eligible beneficiaries. Although we adjusted for age and benefit type in analyses, to the extent that nonrespondents differed from respondents on other unobservable factors, findings may not be generalizable to all AHC beneficiaries. (See **Appendix G** for additional information about the AHC Evaluation Beneficiary Survey.)

Survey respondents in both tracks reported similar rates of community services use in the 6 months following their AHC screenings, and there were no statistically significant differences in community services use between the Assistance Track intervention and control groups (**Exhibit 7-5**). Roughly half of respondents reported using any community services between AHC screening and responding to the survey. Use of community services tended to be greater for food than for other HRSNs; roughly 40% of respondents with a food need used food-related community services compared to 20% to 30% of respondents with the other three needs.

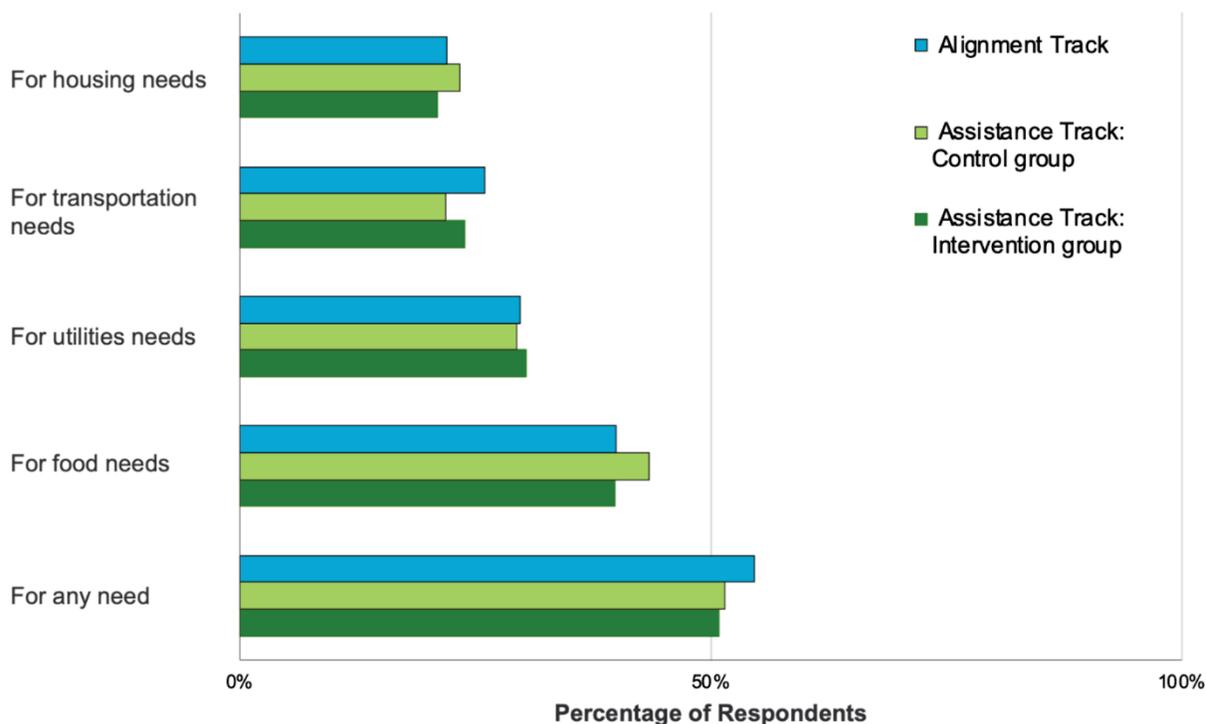
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<sup>18</sup> Analyses were weighted for sampling and nonresponse. These findings are evidence that random assignment was successful in yielding a control group that was a good representation of the intervention group except for the intervention itself.

<sup>19</sup> For the Alignment Track impact analysis, the evaluation used a comparison group methodology with the Assistance Track control group as its comparison group. We did not compare responses from Alignment Track beneficiaries with that comparison group here because Alignment Track beneficiaries differed from Assistance Track control group beneficiaries on both observed and unobserved factors. For this reason, the Alignment Track survey sample was designed to support a representative descriptive analysis of Alignment Track beneficiary-reported outcomes, by HRSN.

## Exhibit 7-5. Survey Respondents' Use of Community Services Following Screening

Use of services was similar between tracks and between the Assistance Track intervention and control groups.



Methods: Includes beneficiaries screened from April 2019–March 2021 who were surveyed approximately 6 months after their initial screening. Estimates for the Assistance Track were weighted to adjust for survey nonresponse and regression adjusted to control for any potential differences between the intervention and control groups remaining after randomization. Estimates for the Alignment Track were weighted for survey sampling and nonresponse but were not regression adjusted because we did not compare responses from Alignment Track beneficiaries with a comparison group. The analyses for each health-related social need included only beneficiaries who reported that need in their initial screening (housing, utilities, food, or transportation, respectively).

Source: Accountable Health Communities Evaluation Beneficiary Survey.

Time Frame: January 2020–January 2022.

## Black Beneficiaries Who Received Navigation Were More Likely to Use Community Services

We also explored differences in the use of community services between beneficiaries in the Assistance Track in the intervention group and their control group counterparts among respondent subpopulations, including respondent characteristics (whether the respondent was eligible for Medicare or Medicaid, race, level of disadvantage in the community where the respondent resides as measured by the Area Deprivation Index), selected needs at screening (housing or food), and survey timing (whether they answered the survey before or after the start of the COVID-19 pandemic). (See **Appendix G** for details on the subpopulation analysis methods and findings.)

For all but two of these subpopulation analyses, we found no significant differences in community services use between Assistance Track intervention and control groups.<sup>20</sup> For Black beneficiaries, intervention group beneficiaries were more likely than their control group counterparts to report using any community services (+5.4

<sup>20</sup> We did not do a subgroup analysis for Alignment Track beneficiaries because we did not construct a survey comparison group for the Alignment Track. Differences between Alignment Track subpopulations alone (without a comparison group) may reflect underlying differences between groups rather than any AHC Model impact.

percentage points,  $P < .10$ ). For respondents in the most disadvantaged communities as indicated by the Area Deprivation Index, intervention group beneficiaries were less likely than their control group counterparts to report using any community services (-3.0 percentage points,  $P < .05$ ).

## Half of Beneficiaries Surveyed Perceived Community Services as Effective

Roughly half of beneficiaries who accessed community services reported in the beneficiary survey that community services were “very” or “quite a bit” effective in meeting their needs (**Exhibit G-8, Appendix G**). Additionally, beneficiary survey respondents in the Assistance Track and Alignment Track reported similar perceptions of the effectiveness of community services. There were also no statistically significant differences between beneficiaries in the Assistance Track intervention group and their control group counterparts (**Exhibit G-8, Appendix G**).

The beneficiary survey included one open-ended item: “What did community organizations do to get the help you needed? What did they do that didn’t help?” Natural language processing, combined with manual thematic analysis, was used to better understand challenges to accessing services faced by beneficiaries (see **Appendix G** for additional information on the methodology used for this analysis).

In analyzing the open-ended item, we focused on assessing challenges to accessing services on a subgroup of beneficiaries who self-reported, in a closed-ended item in the survey, that “I wanted but could not get [services from community organizations].”<sup>21</sup> Respondents who said they were not able to access needed community services described barriers that included lack of transportation, ineligibility for services, and lack of community resources (**Exhibit 7-6**). These responses highlight the interrelated nature of HRSNs. For example, beneficiaries may lack transportation for accessing both medical care and community services for resolving HRSNs related to food. Many respondents also discussed challenges accessing services, often because they did not meet income or disability eligibility requirements (e.g., “no help for me because of my income, made too much”). Other respondents expressed frustration with waiting for services to come through (e.g., “I waited and waited and no one came through for me”).

The open-ended responses provided additional context into how community services were or were not effective at addressing their needs. For example, one respondent writing about food assistance explained, “I go monthly to 2 different organizations to get my monthly food package. Beginning of the month, I go to the local [name of organization] and the end of the month, I go to my church.” Another respondent, writing about their living situation, was less positive: “I have been in a two-year housing program constructed to help me learn living and money management skills to move on to permanent housing after the two years. I am no further ahead than when I first started.” These responses demonstrate the broad range of experiences with community services reported by AHC beneficiaries.

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<sup>21</sup> This analysis included all beneficiaries who self-reported that they “wanted but could not get [services from community organizations],” regardless of their AHC referral and navigation status, which is consistent with the intent-to-treat approach used for beneficiary survey analyses.

## Exhibit 7-6. Challenges to Receiving Services Among Survey Respondents Who Could Not Get the Services They Wanted

Lack of transportation, ineligibility, and lack of community resources were common barriers to receiving services.

Topic	Challenges
Food assistance	Lack of transportation to food pantries
Applying and eligibility for assistance	Ineligibility for services, often based on income
Living situation	Lack of community resources (e.g., no affordable housing, long wait-list for Section 8 and other housing support)
Paying for housing and utilities	Ineligibility for services Lack of community resources that help pay for rent and utilities
Transportation	Lack of transportation as a barrier to other services Difficulties getting transportation to medical appointments

Source. AHC Evaluation Beneficiary Survey (January 2020–July 2021).

Other Notes: Includes beneficiaries screened from April 2019 to September 2020, surveyed roughly 6 months after their initial screening. We used a natural language processing method called Latent Dirichlet Allocation to identify common topics discussed in responses to this item. Latent Dirichlet Allocation uses machine learning to identify topics in textual data by identifying groups of terms that tend to be used together.

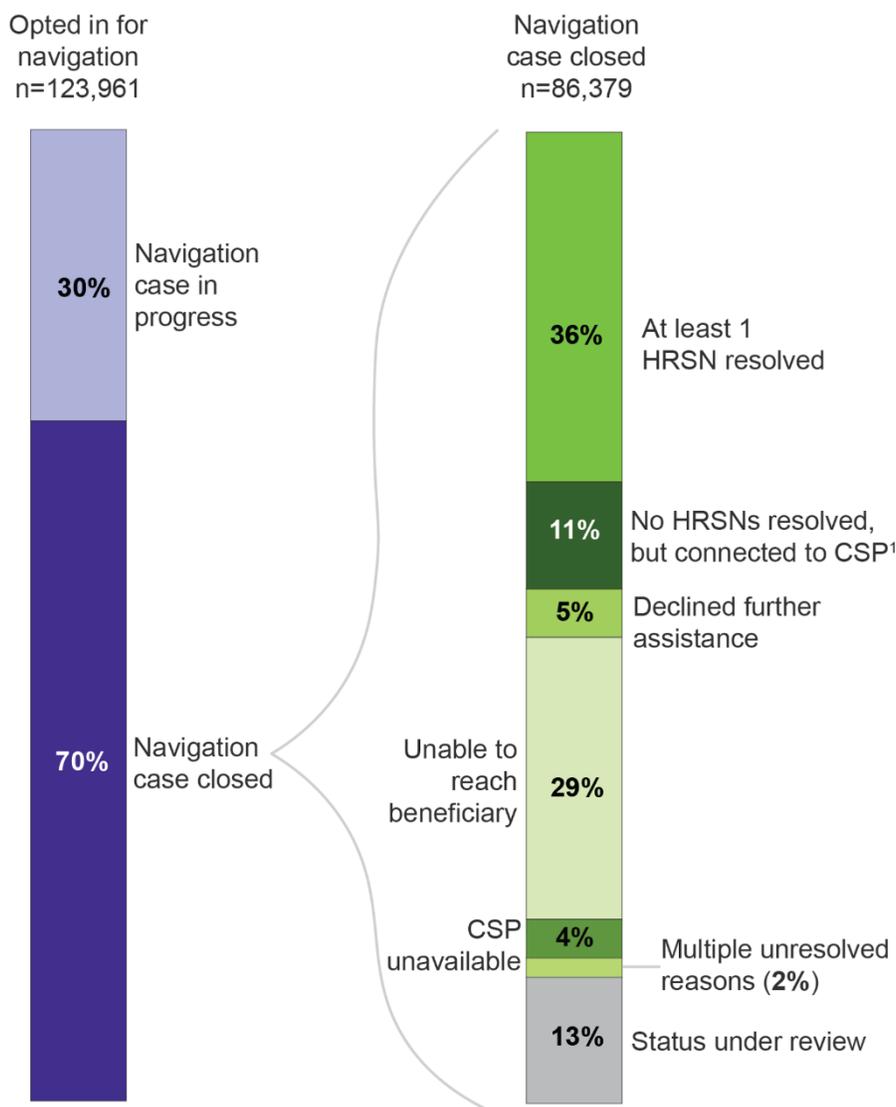
## Among Beneficiaries With a Closed Navigation Case, More Than One-Third Had at Least One HRSN Resolved

**Exhibit 7-7** provides the case status and navigation outcomes among the Assistance Track intervention group and Alignment Track beneficiaries whose navigation cases had been recorded as closed (i.e., received up to 12 months of navigation services). It is important to note that the model policy was to require beneficiaries who opted into navigation to report to the navigator if and when they were connected to a CSP and/or had their need resolved. As shown in the left bar, of the navigation-eligible beneficiaries who opted in for navigation services, most (70%) had a closed navigation case. As shown in the right bar, 36% of those with a closed navigation case had at least one HRSN documented as resolved (including 25% who had all their needs resolved). As noted in Chapter 2, nearly 60% of navigation-eligible beneficiaries had more than one HRSN. Among those with a closed case and with two or more HRSNs, 38% had at least one HRSN resolved and 20% had all their HRSNs resolved (data not shown in exhibit). Among closed cases, 11% were connected to a CSP for at least one HRSN but had no HRSNs resolved.

More than half of beneficiaries with a navigation case closed had no HRSNs resolved and were not connected to a CSP for any HRSNs. Specifically, 5% opted out of navigation for all their HRSNs after having opted in for navigation; for 4%, a CSP was unavailable or unable to address any HRSNs; and 29% were unable to be reached after three navigator attempts, which were required before a case could be closed. Once a navigation case was noted as closed, the outcome should have been recorded as resolved or unresolved. However, 13% of the so-called closed navigation cases had the outcome as “in progress” (i.e., unknown). This is a data quality issue that the Innovation Center has been working with bridge organizations to address, and the percentage of unknown disposition decreased from 31% in the [First Evaluation Report](#).

### Exhibit 7-7. Navigation Case Status and Outcomes Among Assistance Track Intervention Group and Alignment Track Beneficiaries With a Closed Navigation Case

Nearly half of beneficiaries with a navigation case closed had been connected to a CSP for at least one HRSN or had at least one HRSN resolved.



<sup>1</sup> Connected to CSP for at least 1 HRSN.

Source: AHC screening and navigation data, May 2018—December 2021

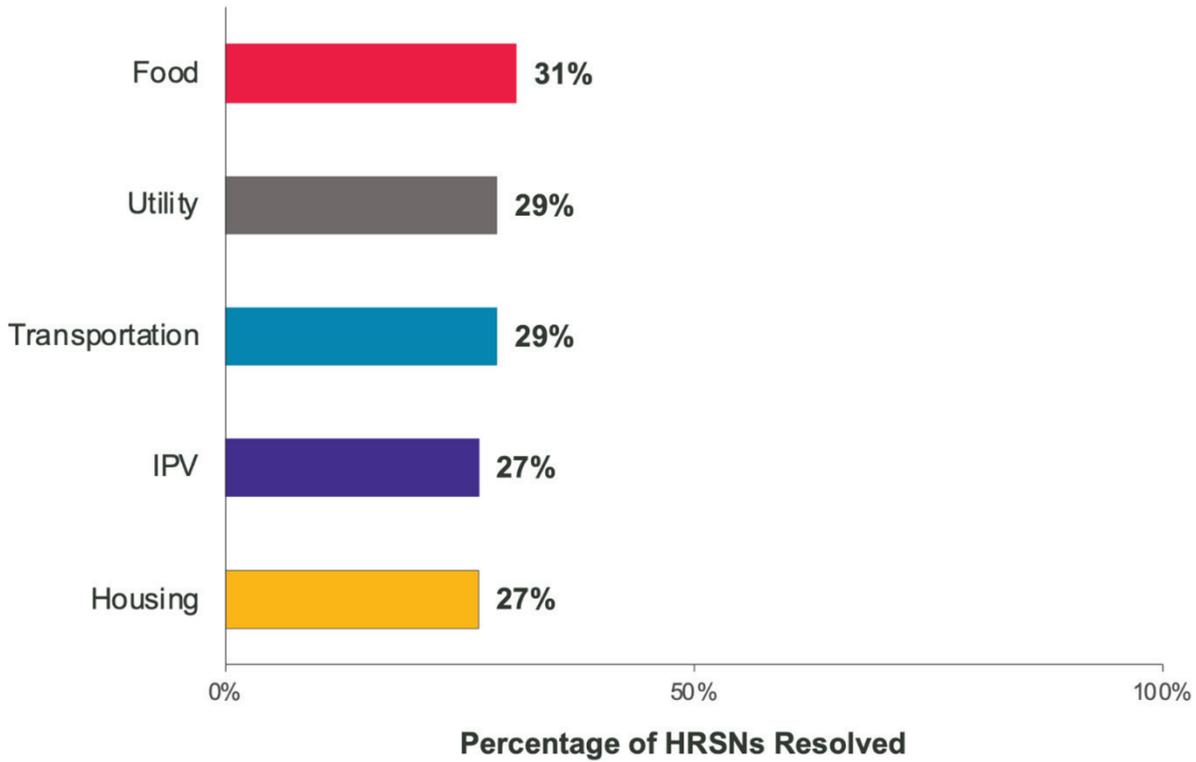
Definitions: AHC = Accountable Health Communities; CSP = community service provider; HRSN = health-related social need.

## Among Beneficiaries With a Closed Navigation Case, Resolution Rates Varied Little by Type of Need

In AHC screening and navigation data, among beneficiaries with a closed navigation case, resolution ranged from 27% (IPV, housing) to 31% (food) (Exhibit 7-8). The majority of navigation-eligible beneficiaries had more than one need, and, as noted, resolution of at least one need, regardless of type, was 36% (this includes 25% who had all their needs resolved).

### Exhibit 7-8. Resolution by HRSN Among Those With a Closed Navigation Case

Resolution varied only slightly by type of need.



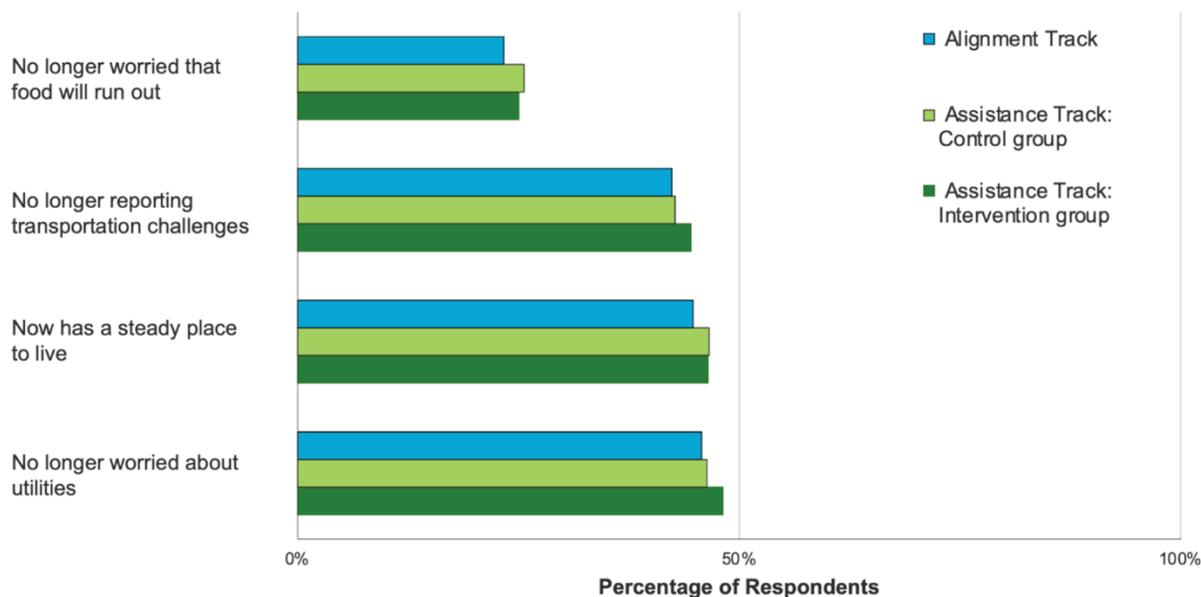
Source: AHC screening and navigation data, May 2018–December 2021.  
Definitions: IPV = interpersonal violence.

## AHC Model Navigation Did Not Increase HRSN Resolution Overall

When comparing Assistance Track beneficiaries in the intervention group with those in the control group, we found small but not statistically significant differences in HRSN resolution (Exhibit 7-9). In subgroup analyses, we found that, among respondents in the most disadvantaged communities as indicated by the Area Deprivation Index, those in the Assistance Track intervention group were more likely than those in the control group to report resolution of their transportation needs (+8.7 percentage points,  $P < .05$ ). Additionally, Black beneficiaries in the Assistance Track intervention group were more likely than their control group counterparts to report resolution of their food needs (+4.0 percentage points,  $P < .10$ ). This finding for Black beneficiaries aligns with the finding that Black beneficiaries in the Assistance Track intervention group were also more likely than their control group counterparts to report accessing community services (discussed above in this chapter).

## Exhibit 7-9. Self-reported HRSN Resolution Among Survey Respondents Who Had Each HRSN at Screening

Beneficiaries in all tracks experienced more persistent food scarcity than other HRSNs.



Methods: Includes beneficiaries screened from April 2019–March 2021, surveyed roughly 6 months after their initial screening. Estimates for the Assistance Track were weighted to adjust for survey nonresponse and regression adjusted to control for any potential differences between the intervention and control groups remaining after randomization. Estimates for the Alignment Track were weighted for survey sampling and nonresponse but were not regression-adjusted because we did not compare responses from Alignment Track beneficiaries with a comparison group. The analyses for each health-related social need included only beneficiaries reporting that need in the initial screening (housing, utilities, food, or transportation, respectively).

Source: Accountable Health Communities Evaluation Beneficiary Survey.  
Time Frame: January 2020–January 2022.

### Among Beneficiaries Surveyed, Food Needs Were Least Likely to Be Resolved

Survey respondents in both tracks reported similar rates of resolution in their HRSNs (Exhibit 7-9). Among respondents who were worried at the time of screening that their food would run out before they got money to buy more, roughly one in four beneficiaries reported resolving their food need at the time of the survey. The resolution rate was higher (just under half) for respondents who reported transportation challenges, concerns about having a steady place to live, and worries about utilities at the time of screening. Because surveys were fielded roughly 6 months after beneficiaries were initially screened, it is possible that HRSNs reported at the time of screening may have shifted over time, becoming resolved and then reoccurring. This may especially be the case for food needs, which may be more dynamic over time than needs for HRSNs such as housing, utilities, and transportation.

### Lack of Communication and Co-occurring Health and Social Needs Presented Challenges to HRSN Resolution

The AHC Model theorized that connection with CSPs is a necessary step, preceding HRSN resolution; therefore, challenges with connection will affect achieving HRSN resolution. The process of connecting beneficiaries to CSPs included establishing contact between beneficiaries, navigators, and CSPs and ensuring the beneficiary can use the community services. Lack of communication among all stakeholders was the primary challenge reported by

beneficiaries, navigators, and CSPs when establishing a connection between beneficiaries and CSPs along with challenges accessing CSPs once beneficiaries were connected. The themes discussed in this section were present before the COVID-19 pandemic. The following section describes how the COVID-19 pandemic exacerbated these challenges and created new challenges in CSP access and availability.

Beneficiaries, navigators, and CSPs all described challenges connecting beneficiaries with community resources. Beneficiaries from 10 of the 19 bridge organizations reported difficulties contacting community organizations despite the organizations having been identified as having resources available. Navigators from bridge organizations also reported difficulty contacting CSPs on behalf of beneficiaries. Ten CSPs associated with seven bridge organizations reported challenges reaching beneficiaries who had been referred.

Even when successfully connected to CSPs, beneficiaries faced additional obstacles in accessing community services, some of which were due to other health and social needs. For example, beneficiaries without transportation found it difficult to get to CSPs for services. Accessing community services was also complicated for beneficiaries with disabilities or mobility challenges. Beneficiaries with health conditions such as diabetes or heart disease reported a lack of medically appropriate foods at food pantries, which was also reported in the [First Evaluation Report](#). Ineligibility was highlighted as a service barrier for some beneficiaries because of their age, geographic location, prior incarceration, or incomes above the service eligibility cutoff.

“I used to have a car but couldn’t afford the insurance, so I had to get rid of it 6 months ago. I would like a transit card to go on the bus and [not] have to pay—I need transportation and financial help.”

— AHC Beneficiary

## COVID-19 Pandemic Affected CSP Access, Resource Availability, and HRSN Resolution

The impacts of the COVID-19 pandemic on navigation implementation at bridge organizations are discussed above. Similarly, the COVID-19 pandemic created new and complex challenges to resolving HRSNs for beneficiaries and CSPs. Many beneficiaries experienced loss of income and other financial difficulties. Several bridge organizations reported that beneficiaries were hesitant to leave their homes to get their needs met because they did not want to put themselves at risk, especially if a CSP required an in-person meeting. Over 90% of surveyed CSPs reported being at least moderately affected by the COVID-19 pandemic. As noted in **Chapter 4**, resource availability changed during the COVID-19 pandemic. When asked how the pandemic affected them, CSPs reported increased demand for services (especially

“Our weekly clients have increased from around 700 families per week to often over 1,600, due to layoffs of workers in service industries.”

— CSP Staff Member

food assistance), decreased staffing capacity, and negative financial impacts due to decreased donations and increased expenses to comply with COVID-19 safety and cleaning protocols. CSPs did continue to provide services to beneficiaries while complying with public health guidance to keep their staff and clients as safe as possible.

After the immediate onset of the pandemic, bridge organizations mentioned the beneficial impacts of government assistance from the Coronavirus Aid, Relief, and Economic Security Act, also known as the CARES Act, an economic stimulus bill signed into effect on March 27, 2020. The CARES Act extended Supplemental Nutrition Assistance Program benefits, schools offering food for students, and eviction moratoriums for beneficiaries. Increased funding and resources led to more pop-up delivery sites, larger zones for food delivery, and new community partners to address HRSNs. Some of these positive changes also challenged navigators, however, who were unsure how long a pop-up site would stay in operation or how to identify new programs. A few Alignment Track bridge organizations mentioned relying on their advisory board to update them on new CSPs. According to one bridge organization, “We really rely on our community advisory board to identify any new program or nonprofit organization or church and just how people [are] temporarily dealing with COVID-19.” Other bridge organizations mentioned relying on

previously established networks within communities and following CSPs on social media for real-time updates on their hours and resource availability.

“So, I would say the lack of consistency in the resources. So again, it’s like these short-term opportunities for people to get resources and then it goes away. So, that could be related to what I just talked about, these pop-up food distribution sites and being able to even understand where they are, because it changes so frequently. There’s a pop-up pantry here for two weeks and then it goes away. That sort of thing has been a big challenge.”

— Bridge Organization Lead

Bridge organizations reported that shifting CSP operations during the pandemic made accessing CSPs difficult for beneficiaries. Shifting operations included fluctuating hours, switching to drive-through from walk-in, and needing an appointment for access. Additional barriers to accessing community services included long waiting lines outside during inclement weather and being unable to choose medically or culturally appropriate food.

Bridge organizations were also concerned about increasing demands for CSP services, with several reporting limited resources—a problem exacerbated by increased service demand during the pandemic. A few bridge organizations reported that some beneficiaries eventually gave up hope on resource assistance.

## Resources Outside the AHC Model Facilitated HRSN Resolution

Beneficiaries received support outside of the AHC Model to resolve their needs, including relying on informal networks of family and friends for help and receiving additional resources from bridge organizations outside of resources through the AHC Model. Over one-third of interviewed beneficiaries relied on family and friends as their source of support for resolving core HRSNs. The types of support offered by family and friends varied—from sharing knowledge about resources and helping with applications to directly addressing HRSNs by providing transportation, housing, or financial support. Beneficiaries also reported receiving support from medical/health insurance workers and other case workers. Reliance on family, friends, and case workers indicates beneficiaries had pathways for addressing their HRSNs outside the AHC Model.

A few bridge organizations mentioned building innovative partnerships that leveraged community services and made additional resources available for beneficiaries with HRSNs. One bridge organization brought on attorneys to help address the legal issues involved in resolving HRSNs, such as having safe and healthy housing. One example the bridge organization shared was a beneficiary with severe asthma, who had been to the hospital several times. The beneficiary had mold, condensation, and dust in her home and had previously asked her landlord unsuccessfully for assistance with remediation. The bridge organization’s attorney called the landlord to discuss the situation further and advocate for the beneficiary. The beneficiary shared, “The landlord is coming tomorrow to fix all this stuff.” Another bridge organization connected beneficiaries with an insurance advisor, who worked with beneficiaries to connect them to health care services such as hearing aids, eyeglasses, and dental care. Even though these types of community resources may be outside the scope of the AHC Model, the model requirements did not prohibit innovative connections that bridge organizations could use in enhancing the support they could provide AHC Model beneficiaries in resolving HRSNs.

## Conclusions

Bridge organization staff members reported significant changes as they adapted to the COVID-19 pandemic, including improvements to navigation workflows and workarounds to reach and support AHC-eligible beneficiaries and the navigation workforce. Although specific strategies, successes, and lessons learned varied by bridge organization, increasing rates of navigation acceptance demonstrated that generally bridge organizations remained successful at enrolling beneficiaries into the AHC Model.

Resolving beneficiary HRSNs was less successful. In a follow-up survey roughly 6 months after initial screening, a majority of beneficiaries reported that their HRSNs were not resolved. In addition, beneficiaries in the Assistance Track intervention group reported using community services and resolving their HRSNs at essentially equal rates to those in the control group, who received a referral summary but no navigation assistance to connect with resources. Although overall we found similar rates of using community services and resolving HRSNs between the Assistance Track intervention and control groups, there were some statistically significant differences among subgroups. Notably, Black beneficiaries in the Assistance Track intervention group were more likely than Black beneficiaries in the control group to report both using community services and resolving their food needs. Nonetheless, roughly two-thirds of Black beneficiaries with a food need at screening reported still having a food need in the follow-up survey.

Several factors might help explain why the AHC Model navigation did not increase connection to community services and HRSN resolution for the majority of beneficiaries. First, beneficiaries who were randomized into the Assistance Track control group, and thus did not receive navigation under the AHC Model, were still screened for HRSNs and, after screening, also received a CRS customized for their needs. These two activities may have increased the likelihood of the control group resolving their HRSNs, therefore diluting the differential influence of navigation on the intervention group. Qualitative interview findings suggested that AHC navigation was only one of several strategies beneficiaries used to resolve HRSNs; beneficiaries also often relied on family, friends, case managers, and other resources to address their needs.

Moreover, navigation did not have a strong impact on connecting beneficiaries to community services due to various challenges. Bridge organizations had difficulty keeping information about community services current, and communication with CSPs was not always consistent and timely. CSPs were not always accessible to beneficiaries because of eligibility requirements or compounding HRSNs (e.g., no transportation to get to a drive-through food bank). Finally, bridge organization communities may not have had sufficient resources to address beneficiaries' social needs because of issues such as increased need during onset of the COVID-19 pandemic without new funding to increase the supply of services, limited number of housing vouchers, and insufficient utility supports. The following exhibit highlights key challenges with navigation that developed during or were exacerbated by the COVID-19 pandemic and promising strategies for addressing those challenges. Lessons learned related to navigation are also pointed out in the exhibit.



•Navigation ceased or slowed.

•Navigation could no longer be conducted in person.

•Navigation workforce experienced increased burnout and stress.

•Community services were less available and accessible.

•Communication between navigators, beneficiaries, and CSPs was lacking.

•Screeners were cross-trained to implement navigation.

•Bridge organizations deployed new outreach strategies (e.g., text, email, televisits) to navigate beneficiaries.

•Strategies were enhanced/developed to support the navigation workforce.

•Community relationships outside the AHC Model were developed.

•Advisory boards were an important venue for keeping stakeholders informed of CSP changes.

•Strong communication processes are needed to facilitate information exchange among navigators, CSPs, and beneficiaries.

•There is no "best" way to implement the AHC Model. Bridge organizations must be flexible in outreach to, connection with, and assistance for beneficiaries to address HRSNs.

•Working remotely from home introduces additional stressors that need to be addressed in navigation workflows and supports.

•HRSNs are interconnected. Resolution of an identified need may require also addressing additional needs.

•Navigators need a systematic approach to keeping information on CSP services, hours, and eligibility requirements current.

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## Chapter 8: Model Impacts on Health Care Cost, Utilization, and Quality of Care

The AHC Model’s navigation intervention was expected to increase resolution of HRSNs, resulting in improved beneficiary health outcomes and reduced health care expenditures and service use.

This chapter presents findings on the model’s impacts on health care cost and use, health outcomes, and quality of care, separately for the Assistance and Alignment Tracks. The [First Evaluation Report](#) restricted the impact analysis to FFS Medicare beneficiaries in the Assistance Track. This chapter expands the analyses presented in the [First Evaluation Report](#) to include FFS Medicare beneficiaries in the Alignment Track, Medicaid beneficiaries in the Assistance and Alignment Tracks, a combined sample of FFS Medicare and Medicare Advantage beneficiaries in the Assistance Track, and a new focus on impacts within multiple subpopulations.

### Key Takeaways

- The AHC Model reduced ED visits among Medicaid and FFS Medicare beneficiaries in the Assistance Track.
  - Reductions in ED use were consistent with reports that navigators helped beneficiaries access health care services, although beneficiary survey analyses did not indicate that AHC Model navigation increased HRSN resolution.
  - Total expenditures and other hospital-based utilization outcomes almost all showed reductions for Medicaid and FFS Medicare beneficiaries in both tracks, but estimates were not statistically significant.
  - There were few impacts on a limited set of claims-based health and quality-
- (continued)

This chapter addresses Research Objective 3, which seeks to understand the impact of the AHC Model relative to usual care (screening and referral), including an analysis of the following three research questions:

- How did the AHC Model impact Medicaid and Medicare beneficiaries' health care costs, service use, health outcomes, and quality of care?
- Do impacts differ for the Assistance and Alignment Tracks?
- Are there differences in findings for key outcomes by subpopulations based on sociodemographic characteristics, clinical characteristics, or HRSNs?

Data for this chapter came from multiple sources. The AHC screening and navigation data were linked to Medicaid and Medicare enrollment data. Claims-based outcomes were created using data from the Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files in the Chronic Conditions Warehouse (CCW), data from the FFS Medicare research identifiable files in the CCW, and data from Medicare Advantage encounter records in the integrated data repository. (See **Appendix H** for detail on the data sources and methods. See **Appendixes I and J** for more detailed results.)

## Assistance Track Impacts

Data presented in the [First Evaluation Report](#) showed that the Assistance Track intervention and control groups were remarkably similar in baseline health care measures and sociodemographic characteristics. These analyses were updated for this report and continue to demonstrate similarities between intervention and control groups (see **Exhibits J-1 and J-2, Appendix J**). The strength of the similarities between the intervention and control groups suggests that randomization was successful in producing two samples for which the only salient difference is that the intervention group received navigation services while the control group did not. As such, to estimate the impacts of the AHC Assistance Track intervention, we compared regression-adjusted *post*-screening measure averages for beneficiaries randomized to the intervention group with the same measure averages for beneficiaries randomized to the control group. Although the intervention and control groups were well balanced in all observed sociodemographic characteristics, we conducted regression-adjusted analyses to increase the statistical precision of the impact estimates.<sup>22</sup>

### The AHC Model Was Associated With Lower ED Visits in the Assistance Track but Did Not Have Significant Impacts on Expenditure or Other Utilization Outcomes

Over the first 2 years after screening, Medicaid beneficiaries in the intervention group had 22 (3.0%) fewer ED visits per 1,000 beneficiaries relative to the control group. This finding was consistent with expectations of the AHC Model's impact and was statistically significant ( $P = .083$ , **Exhibit 8-1**). While not statistically significant, Medicaid beneficiaries in the intervention group had fewer avoidable ED visits that were considered likely to be nonemergent or potentially preventable through better ambulatory care than beneficiaries in the control group—also consistent with expectations. Results for FFS Medicare beneficiaries were similar but slightly stronger. Over the first 3 years after screening, FFS Medicare beneficiaries had 50 (8.3%) fewer ED visits per 1,000 beneficiaries relative to the control group, a statistically significant result ( $P = .011$ ). FFS Medicare beneficiaries had 27 (9.2%) fewer avoidable ED visits per 1,000 beneficiaries relative to the control group, also statistically significant ( $P = .043$ ).

## Key Takeaways (continued)

- of-care measures across Medicaid and FFS Medicare beneficiaries in either track.
- Several model impacts differed for subpopulations within Medicaid and FFS Medicare beneficiaries, but differences were not consistent across payers or tracks.

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<sup>22</sup> That is, the regression adjustment resulted in smaller standard errors and P-values.

### Exhibit 8-1. Impacts on Expenditures and Utilization for Medicaid and FFS Medicare Beneficiaries in the Assistance Track

Medicaid and FFS Medicare beneficiaries in the Assistance Track intervention group had statistically significantly fewer ED visits relative to the control group after screening, but total expenditure differences were not statistically significant.

Outcome	Expected Direction of Impact	Medicaid				FFS Medicare			
		Adjusted Mean, Control Group	Difference Between Intervention and Control Groups (90% CI)	% Difference	P-Value	Adjusted Mean, Control Group	Difference Between Intervention and Control Groups (90% CI)	% Difference	P-Value
Total expenditures PBPM (\$)	≍	\$1,596	-\$44 (-\$127, \$39)	-2.8	.382	\$3,082	-\$93 (-\$335, \$149)	-3.0	.529
Inpatient admissions/1,000 beneficiaries	≍	109	-6 (-14, 2)	-5.4	.241	251	-10 (-32, 11)	-4.2	.425
ACSC admissions/1,000 beneficiaries	≍	14	-1 (-3, 2)	-3.7	.772	57	-3 (-13, 7)	-5.4	.613
Unplanned readmissions/1,000 discharges	≍	240	-13 (-53, 27)	-5.4	.597	276	-16 (-56, 25)	-5.6	.527
Follow-up visit within 14 days of hospital discharge/1,000 discharges	⋈	484	-9 (-55, 37)	-1.8	.755	612	-21 (-65, 23)	-3.4	.434
Follow-up visit within 30 days of hospital discharge for mental health/1,000 discharges	⋈	452	-10 (-68, 48)	-2.2	.775	386	27 (-67, 121)	7.1	.632
ED visits within 30 days of a hospital discharge/1,000 discharges	≍	378	-0.4 (-45, 44)	-0.1	.989	267	-18 (-57, 21)	-6.7	.452
ED visits/1,000 beneficiaries	≍	720	<b>-22* (-43, -1)</b>	-3.0	.083	597	<b>-50** (-82, -18)</b>	-8.3	.011

(continued)

**Exhibit 8-1. Impacts on Expenditures and Utilization for Medicaid and FFS Medicare Beneficiaries in the Assistance Track (continued)**

Outcome	Expected Direction of Impact	Medicaid				FFS Medicare			
		Adjusted Mean, Control Group	Difference Between Intervention and Control Groups (90% CI)	% Difference	P-Value	Adjusted Mean, Control Group	Difference Between Intervention and Control Groups (90% CI)	% Difference	P-Value
Avoidable ED visits/1,000 beneficiaries	⊕	337	-8 (-22, 5)	-2.6	.296	289	<b>-27** (-48, -5)</b>	-9.2	.043
PCP visits/1,000 beneficiaries	◇	1,234	0.2 (-28, 29)	0.01	.993	2,075	-36 (-99, 28)	-1.7	.355

Legend: ⊕ Lower      ⊕ Higher      ◇ Could be lower or higher

P-value: \*P-value < .10; \*\*P-value < .05; \*\*\*P-value < .01. Bolded numbers indicate a result that is statistically significant at a P-value < .10.

Sample Size: 20,063 Medicaid beneficiaries and 8,980 FFS Medicare beneficiaries in the intervention group.

Methods: Weighted ordinary least squares estimated differences in total expenditures. Weighted Poisson estimated differences in inpatient admissions, ACSC admissions, ED visits, avoidable ED visits, and PCP visits. Weighted logistic estimated differences in unplanned readmissions, follow-up visits within 14 days of discharge, follow-up visits within 30 days of a hospital discharge for mental health, and ED visits within 30 days of a hospital discharge.

Weight Variable: Number of months during the quarter the beneficiary was eligible for Medicaid or FFS Medicare divided by 3.

Source: RTI analysis of Chronic Conditions Warehouse Transformed Medicaid Statistical Information System Analytic Files (T-MSIS) and Medicare claims.

Time Frame: Medicaid data cover May 2018–December 2020; FFS Medicare data cover May 2018–December 2021.

Definitions: ACSC = ambulatory care sensitive condition; CI = confidence interval; ED = emergency department; FFS = fee-for-service; PBPM = per beneficiary per month; PCP = primary care provider.

Interpretation: The overall impact estimate reported is the difference in adjusted means between the intervention and control groups over the first 8 or 12 quarters after screening. The percentage difference is the overall impact estimate as a percentage of the control group’s mean for the outcome in the 8 or 12 quarters after screening.

Total expenditures and other utilization outcomes were not statistically significantly different for Medicaid or FFS Medicare beneficiaries but were consistently in the expected negative direction (except for primary care provider [PCP] visits, for which the expected direction is unclear). The intervention group for both payers had lower total expenditures and fewer inpatient admissions, ambulatory care sensitive condition (ACSC) admissions, and unplanned readmissions than the control group. For PCP visits, the intervention group had more PCP visits than the control group among Medicaid beneficiaries, but fewer PCP visits among FFS Medicare beneficiaries. While not statistically significant, many differences showed at least 3% lower cost or utilization or better. Because a majority of Medicaid beneficiaries were in capitated managed care plans and capitation payment rates are not sensitive to changes in underlying utilization in the short run, the insignificantly lower total expenditures was expected. Additionally, beneficiaries in the AHC Model likely represented a small share of the managed care plans' enrollees, so even in the longer run it is unlikely that changes in their utilization would affect capitation rates.

Post-discharge outcomes were more mixed, and no intervention-control differences were statistically significant. Contrary to the expected direction of AHC Model impacts, Medicaid beneficiaries in the intervention group had a lower rate of follow-up visits within 14 days of discharge and a lower rate of follow-up visits within 30 days of mental health hospital discharge. FFS Medicare beneficiaries also had a lower rate of follow-up visits within 14 days of discharge but had a higher rate of follow-up visits within 30 days of mental health hospital discharge. In line with the expected direction, both Medicaid and FFS Medicare beneficiaries had lower rates of ED visits within 30 days of hospital discharge.

The overall impact estimates reported in Exhibit —1 were calculated as the average of 8 (for Medicaid) to 12 (for FFS Medicare) quarter-specific impacts (see **Exhibits I-4 and I-15 in Appendix I**). For Medicaid beneficiaries, quarter-specific impact estimates did not show a discernible pattern across quarters in the AHC Model impacts on ED visits, with both statistically significant and nonsignificant impacts in multiple quarters throughout the first 2 years after screening (**Exhibit I-4, Appendix I**). For FFS Medicare, in contrast, ED visits were statistically significant and lower in the intervention group than the control group in most quarters throughout the first 3 years after screening, as expected, suggesting a persistent impact on ED visits following navigation (**Exhibit I-15, Appendix I**). Quarter-specific impacts on avoidable ED visits also showed statistically significant negative differences for FFS Medicare beneficiaries in most quarters. While some statistically significant quarter-specific impacts were observed for other outcomes for both Medicaid and FFS Medicare beneficiaries, there was no discernible pattern over time during the first 2 or 3 years after screening, respectively.

## **The AHC Model Had Some Promising Impacts on Health and Quality of Care in the Assistance Track**

Although we expected the AHC Model would have impacts primarily on health care expenditures and utilization, we also hypothesized the model could lead to improvements in beneficiary health and quality of care. Specifically, we expected that addressing the quality of housing conditions could lead to fewer environmentally exacerbated asthma complications and fewer respiratory illnesses that need treatment. To capture this effect, we looked at the impact of the AHC Model on the percentage of beneficiaries who received treatment for respiratory illnesses and the percentage of beneficiaries with asthma whose asthma medication ratio exceeded 50%. We expected that the percentage of beneficiaries treated for respiratory illnesses would decrease. The asthma medication ratio measures the use of asthma controller medications relative to all asthma medications; thus, ratios above 50% indicate that beneficiaries are more effectively managing their asthma through use of controller medications. Accordingly, we expected the asthma medication ratio to increase with fewer beneficiaries needing asthma medications dispensed for acute asthmatic events.

In addition, we expected that increased resolution of HRSNs more generally could reduce external stressors, which in turn would improve beneficiaries' ability to seek and adhere to treatment for mental health conditions such as depression and substance use disorders. To capture these effects, we looked at the impacts of the AHC Model on

the percentage of beneficiaries who were newly treated with an antidepressant and who remained on an antidepressant for at least 12 weeks and for at least 6 months. Additionally, we looked at the impacts of the AHC Model on the percentage of beneficiaries with alcohol or other drug dependence who initiated treatment within 14 days of diagnosis. We hypothesized both of these measures would increase as a result of the AHC Model. We attempted to look at an alcohol or other drug dependence treatment engagement measure, but there were insufficient beneficiaries in the study population to support these analyses.

In addition to the hypotheses cited above, it is possible that navigators leveraged their role and relationships with beneficiaries to help beneficiaries seek more timely care and better navigate the health care system to manage underlying health conditions. If so, these outcomes could also have been affected.

Beyond the limited measures presented in this report, we also hypothesized that the AHC Model could have affected a handful of additional health or quality-of-care outcomes, such as tobacco screening, domestic violence screening, flu shots, and breast cancer screening. Initial exploratory analyses showed that there were not enough beneficiaries in the study population to support these analyses, and these outcomes were thus excluded from this report.

The Medicaid results are consistent with the expectation that improvements in housing quality may have led to a decrease in need for treatment for respiratory illnesses. Over the first 2 years after screening, 2% fewer Medicaid beneficiaries in the intervention group were treated for respiratory illnesses relative to the control group (a statistically significant 1 percentage point difference,  $P = .07$ , **Exhibit 8-2**). The impact on treatment for respiratory illnesses was similar for FFS Medicare beneficiaries over the first 3 years after screening, although the lower percentage for FFS Medicare beneficiaries was not statistically significant.

Other quality-of-care outcome differences were not statistically significant. Consistent with the positive expected direction for the AHC Model, among both Medicaid and FFS Medicare beneficiaries the asthma medication ratio exceeded 50% for a higher percentage of intervention beneficiaries with asthma than for control beneficiaries.

Contrary to the expected direction, however, Medicaid and FFS Medicare intervention group beneficiaries who were newly treated with an antidepressant medication were less likely than control group beneficiaries to remain on an antidepressant both for at least 12 weeks and for at least 6 months. Also contrary to expectations, a lower percentage of FFS Medicare intervention group beneficiaries than control group beneficiaries with alcohol or other drug dependence initiated treatment within 14 days of diagnosis.

## Exhibit 8-2. Impacts on Health and Quality-of-Care Outcomes for Medicaid and FFS Medicare Beneficiaries in the Assistance Track

Medicaid beneficiaries in the intervention group were less likely to be treated for respiratory illnesses than in the control group, but no other quality-of-care outcomes were statistically significantly different.

Outcome	Expected Direction of Impact	Medicaid				FFS Medicare			
		Adjusted Mean, Control Group	Difference Between Intervention and Control Groups (90% CI)	% Difference	P-Value	Adjusted Mean, Control Group	Difference Between Intervention and Control Groups (90% CI)	% Difference	P-Value
Percentage of beneficiaries with asthma whose asthma medication ratio exceeded 50%	⤴	42	3 (-2, 8)	7.7	.316	62	5 (-4, 13)	7.5	.354
Percentage of beneficiaries who received treatment for respiratory illnesses	⤵	48	<b>-1* (-2, -0.1)</b>	-2.4	.071	67	-1 (-3, 1)	-1.5	.380
Percentage of beneficiaries who were newly treated with an antidepressant medication and remained on an antidepressant for at least 12 weeks	⤴	54	-2 (-11, 7)	-3.6	.715	62	-3 (-10, 5)	-4.2	.585
Percentage of beneficiaries who were newly treated with an antidepressant medication and remained on an antidepressant for at least 6 months	⤴	35	-1 (-9, 8)	-2.1	.887	35	-2 (-10, 6)	-6.3	.658

(continued)

**Exhibit 8-2. Impacts on Quality-of-Care Outcomes for Medicaid and FFS Medicare Beneficiaries in the Assistance Track (continued)**

Outcome	Expected Direction of Impact	Medicaid				FFS Medicare			
		Adjusted Mean, Control Group	Difference Between Intervention and Control Groups (90% CI)	% Difference	P-Value	Adjusted Mean, Control Group	Difference Between Intervention and Control Groups (90% CI)	% Difference	P-Value
Percentage of beneficiaries with alcohol or other drug dependence who initiated treatment within 14 days of a diagnosis	⌞	57	4 (-1, 9)	6.4		58	-1 (-10, 7)	-2	.823

Legend: ⌞ Lower      ⌠ Higher      ⬡ Could be lower or higher

P-value: \*P-value < .10; \*\*P-value < .05; \*\*\*P-value < .01. Bolded numbers indicate a result that is statistically significant at a P-value < .10.

Sample Size: Medicaid: 1,369 intervention beneficiaries in the asthma medication ratio sample, 20,063 intervention beneficiaries in the treatment for respiratory illnesses sample, 628 intervention beneficiaries in the antidepressant medication management sample, and 1,472 intervention beneficiaries in the drug dependence treatment initiation sample. FFS Medicare: 566 intervention beneficiaries in the asthma medication ratio sample, 8,980 intervention beneficiaries in the treatment for respiratory illnesses sample, 815 intervention beneficiaries in the antidepressant medication management sample, and 825 intervention beneficiaries in the drug dependence treatment initiation sample.

Methods: Weighted logistic estimated differences in all outcomes.

Weight Variable: Number of months during the year the beneficiary was eligible for Medicaid or FFS Medicare divided by 12.

Source: RTI analysis of Chronic Conditions Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files and Medicare claim files.

Time Frame: Medicaid data cover May 2018–December 2020; FFS Medicare data cover May 2018–December 2021.

Definitions: CI = confidence interval; FFS = fee-for-service.

Interpretation: The overall impact estimate reported is the difference in adjusted means between the intervention and control groups over the first 2 or 3 years after screening. The percentage difference is the overall impact estimate as a percentage of the control group’s mean for the outcome in the 2 or 3 years after screening.

## The AHC Model Had No Impact on Select Utilization Outcomes 1 Year After Screening for a Combined Sample of FFS Medicare and Medicare Advantage Beneficiaries

We generated estimates of AHC Model impacts on the overall Medicare population using a combined sample of FFS Medicare and Medicare Advantage beneficiaries in the Assistance Track.<sup>23</sup> Just over a quarter of beneficiaries linked to Medicare data for this report were only ever enrolled in Medicare Advantage. Because this represents a relatively small portion of the AHC sample, we did not develop separate estimates for the Medicare Advantage population. **Exhibit 8-3** shows there were no statistically significant impacts among the combined FFS Medicare and Medicare Advantage sample in the first year after screening. Although the differences were not statistically significant, the intervention group had fewer inpatient admissions and all-cause readmissions<sup>24</sup> than the control group in the combined sample, consistent with the expected direction of the impact. However, the intervention group had higher rates of ACSC admissions and ED visits than the control group, contrary to the expected direction of AHC Model impacts. The intervention group also had fewer PCP visits than the control group.

The findings from the combined FFS Medicare and Medicare Advantage analysis are not consistent with findings from the first 12 months after screening in analyses for FFS Medicare beneficiaries only (see **Exhibit I-15, Appendix I**) or with the FFS Medicare analyses above that covered the first 36 months after screening. To better understand this inconsistency, we conducted an exploratory analysis that subset the combined sample data to include only those Assistance Track beneficiaries who were ever enrolled in FFS Medicare. This subset differed from the FFS Medicare analysis population in the amount of data used and the inclusion of Medicare Advantage encounter records to construct outcomes during periods of Medicare Advantage enrollment for those beneficiaries who switched to Medicare Advantage during the study period. Despite these differences, we expected the results to be more similar to the FFS Medicare analyses. Within this subset, there were also no statistically significant impacts, but the impact estimates were all negative, suggesting that impacts for Medicare Advantage beneficiaries may have differed from FFS Medicare beneficiaries in direction and possibly in terms of magnitude. That said, it may also be too early to determine the AHC Model's impacts for the combined FFS Medicare and Medicare Advantage sample because data included only claims/encounter records through December 2019 and the sample included only beneficiaries screened before October 2019.

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<sup>23</sup> These analyses were conducted only for the Assistance Track because Medicare Advantage encounter data were only available through December 2019 due to extensive data lags. Thus, the sample available for analysis was limited, and Alignment Track impact analyses were likely severely underpowered.

<sup>24</sup> We measured all-cause readmissions for the combined FFS Medicare and Medicare Advantage analysis in contrast to unplanned readmissions, which were measured for the Medicaid and exclusively FFS Medicare analyses. This is because of data quality concerns with Medicare Advantage encounter data, which are discussed further in **Appendix H**.

### Exhibit 8-3. Impacts on Key Outcomes for a Combined Sample of FFS Medicare and Medicare Advantage Beneficiaries in the Assistance Track

There were no statistically significant differences in utilization in a combined sample of FFS Medicare and Medicare Advantage beneficiaries in the Assistance Track.

Payer/Outcome	Expected Direction of Impact	Adjusted Mean, Control Group	Difference Between Intervention and Control Groups (90% CI)	% Difference	P-Value
Inpatient admissions/1,000 beneficiaries	⊗	254	-3 (-24, 19)	-1.0	.841
ACSC admissions/1,000 beneficiaries	⊗	16	1 (-4, 6)	7.4	.714
All-cause readmissions/1,000 discharges	⊗	289	-9 (-44, 26)	-3.0	.677
ED visits/1,000 beneficiaries	⊗	689	7 (-27, 42)	1.1	.728
PCP visits/1,000 beneficiaries	◇	1,877	-10 (-65, 46)	-0.5	.777

Legend: ⊗ Lower ⊕ Higher ◇ Could be lower or higher

P-value: \*P-value < .10; \*\*P-value < .05; \*\*\*P-value < .01.

Sample Size: 7,899 beneficiaries in the intervention group.

Methods: Weighted Poisson estimated differences in inpatient admission, ACSC admission, ED visits, and PCP visits. Weighted logistic estimated differences in all-cause readmissions.

Weight Variable: Number of months during the quarter the beneficiary was eligible for Medicare divided by 3.

Source: RTI analysis of Medicare claims and encounter data from the integrated data repository.

Time Frame: May 2018–December 2019.

Definitions: ACSC = ambulatory care sensitive condition; CI = confidence interval; ED = emergency department; PCP = primary care provider.

Interpretation: The overall impact estimate reported is the difference in adjusted means between the intervention and control groups over the first 4 quarters after screening. The percentage difference is the overall impact estimate as a percentage of the control group’s mean for the outcome in the 4 quarters after screening.

## Alignment Track Impacts

Because Alignment Track activities took place at the community level, all Alignment Track beneficiaries were in the intervention group by definition. As a substitute for a randomized control group, the Alignment Track impact analysis used the Assistance Track’s control group as the Alignment Track’s comparison group. This approach was chosen because the AHC Model eligibility criteria are the same for both tracks. However, the Alignment Track’s intervention group and the Assistance Track’s control group have differing sociodemographic and geographic characteristics and social service needs. Thus, propensity score weighting was applied to ensure the two groups matched more closely. (For detail on the propensity score analysis, including specific differences observed across groups, see **Appendix J**.) To estimate impacts, we used a difference-in-differences (D-in-D) regression model to compare the change in outcomes from 3 years before screening to the relevant time periods after screening for the two beneficiary groups (Medicaid and FFS Medicare).

### Expenditures and Hospital Utilization in the Alignment Track Decreased Relative to the Comparison Group, but Not by a Statistically Significant Amount

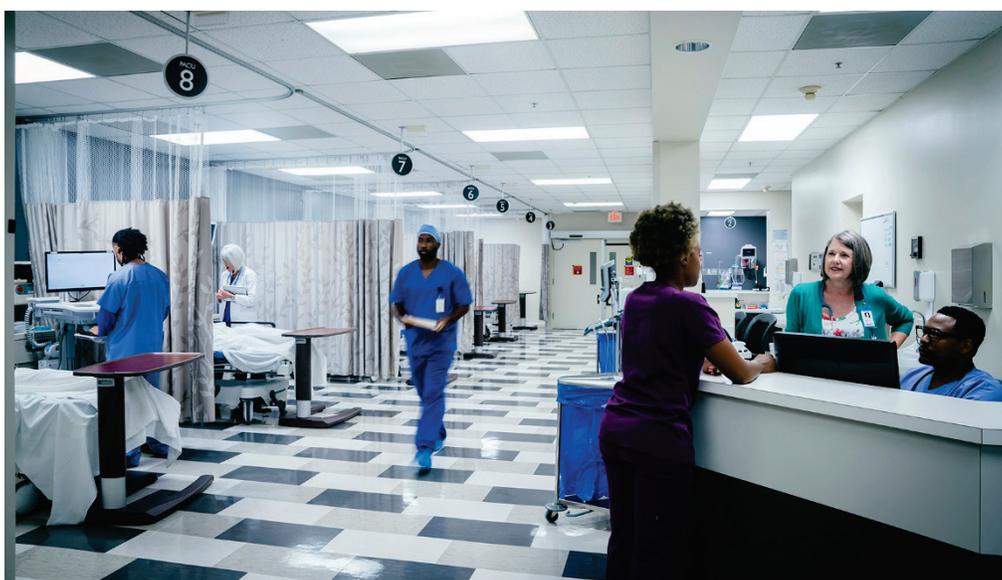
Relative differences in changes in expenditures and utilization over the first 2 years after screening for Medicaid beneficiaries and over the first 3 years after screening for FFS Medicare beneficiaries were broadly as expected but

not statistically significant (**Exhibit 8-4**). The reason may be that the methodology used (D-in-D combined with propensity scoring) reduced the statistical power of the analysis, regardless of the given sample size. As such, although the sample size in the Alignment Track analyses was larger than in the Assistance Track analyses, the Alignment Track analyses were still likely underpowered relative to the Assistance Track analyses.

For Medicaid beneficiaries, total expenditures, inpatient admissions, ACSC admissions, ED visits within 30 days of hospital discharge, ED visits, and avoidable ED visits all declined relative to the comparison group. This finding was consistent with expectations, but these impacts were not statistically significant. Despite the lack of statistical significance, ED visit and avoidable ED visit impact estimates were both larger in size than those in the Medicaid Assistance Track impact analyses. Unplanned readmissions (contrary to expectations) increased relative to the comparison group, and follow-up visits within 14 days of hospital discharge (contrary to expectations) declined relative to the comparison group. Follow-up visits within 30 days of a hospital discharge for mental health increased relative to the comparison group, in line with expectations. PCP visits also increased relative to the comparison group.

For FFS Medicare beneficiaries, impact estimates were also broadly consistent with expectations but were not statistically significant. Total expenditures, inpatient admissions, ACSC admissions, unplanned readmissions, ED visits within 30 days of hospital discharge, ED visits, and avoidable ED visits all declined relative to the comparison group. The impact on total expenditures was relatively large, representing a 16.2% decline in expenditures. The ED visit impact was larger in magnitude than the observed impact for FFS Medicare beneficiaries in the Assistance Track. As with Alignment Track Medicaid findings, Alignment Track FFS Medicare results were more mixed with respect to care coordination outcomes. The estimated impact on follow-up visits within 14 days of hospital discharge was negative and contrary to expectations. The estimated impact on follow-up visits within 30 days of hospital discharge for mental health was positive and in line with expectations. In contrast to the Medicaid findings, the estimated impact showed a decline in PCP visits.

Despite the lack of statistical significance over the observation period as a whole, FFS Medicare beneficiaries in the Alignment Track had statistically significant declines in both ED visits and avoidable ED visits relative to the comparison group in 3 out of the first 4 quarters after screening (see **Exhibit I-17, Appendix I**). There was no discernible pattern in quarter-specific impacts among Medicaid beneficiaries in the Alignment Track. Nor were there discernible patterns in quarter-specific impacts for other outcomes among FFS Medicare beneficiaries in the Alignment Track.



### Exhibit 8-4. Impacts on Expenditures and Utilization for Medicaid and FFS Medicare Beneficiaries in the Alignment Track

Across Medicaid and FFS Medicare beneficiaries, almost all expenditure and hospital utilization outcomes in the Alignment Track decreased relative to the comparison group, but the differences were not statistically significant.

Outcome	Expected Direction of Impact	Medicaid				FFS Medicare			
		Baseline Adjusted Mean, Intervention Group	Difference-in-Differences (90% CI)	% Change	P-Value	Baseline Adjusted Mean, Intervention Group	Difference-in-Differences (90% CI)	% Change	P-Value
Total expenditures PBPM (\$)	⇓	\$1,436	-\$107 (-\$299, \$85)	-7.4	.360	\$2,557	-\$415 (-\$893, \$63)	-16.2	.153
Inpatient admissions/1,000 beneficiaries	⇓	121	-12 (-32, 9)	-9.6	.362	219	-27 (-63, 9)	-12.3	.222
ACSC admissions/1,000 beneficiaries	⇓	14	-1 (-5, 4)	-3.8	.855	49	-6 (-19, 7)	-12.3	.442
Unplanned readmissions/1,000 discharges	⇓	233	3 (-58, 64)	1.4	.929	238	-17 (-64, 30)	-7.2	.547
Follow-up visit within 14 days of hospital discharge/1,000 discharges	⇑	504	-17 (-67, 33)	-3.4	.575	619	-34 (-81, 14)	-5.4	.250
Follow-up visit within 30 days of hospital discharge for mental health/1,000 discharges	⇑	362	49 (-141, 239)	13.6	.670	361	10 (-79, 100)	2.9	.847
ED visits within 30 days of a hospital discharge/1,000 discharges	⇓	398	-20 (-65, 25)	-5.1	.460	273	-13 (-56, 31)	-4.6	.636
ED visits/1,000 beneficiaries	⇓	903	-69 (-144, 6)	-7.7	.129	708	-71 (-153, 10)	-10.1	.148

(continued)

**Exhibit 8-4. Impacts on Expenditures and Utilization for Medicaid and FFS Medicare Beneficiaries in the Alignment Track (continued)**

Outcome	Expected Direction of Impact	Medicaid				FFS Medicare			
		Baseline Adjusted Mean, Intervention Group	Difference-in-Differences (90% CI)	% Change	P-Value	Baseline Adjusted Mean, Intervention Group	Difference-in-Differences (90% CI)	% Change	P-Value
Avoidable ED visits/1,000 beneficiaries	⚡	392	-22 (-57, 13)	-5.6	.297	332	-38 (-79, 3)	-11.5	.123
PCP visits/1,000 beneficiaries	◇	1,393	1 (-172, 173)	0.1	.993	1,636	-121 (-310, 68)	-7.4	.291

Legend: ⚡ Decrease      ⚡ Increase      ◇ Could move in either direction

P-value: \*P-value < .10; \*\*P-value < .05; \*\*\*P-value < .01.

Sample Size: 38,127 Medicaid beneficiaries and 16,022 FFS Medicare beneficiaries in the intervention group.

Methods: Weighted ordinary least squares estimated impacts on total expenditures. Weighted Poisson estimated impacts on inpatient admissions, ACSC admissions, ED visits, avoidable ED visits, and PCP visits. Weighted logistic estimated impacts on unplanned readmissions, follow-up visits within 14 days of discharge, follow-up visits within 30 days of a hospital discharge for mental health, and ED visits within 30 days of a hospital discharge.

Weight Variable: Propensity score analysis weight multiplied by the number of months during the quarter the beneficiary was eligible for Medicaid or FFS Medicare divided by 3.

Source: RTI analysis of Chronic Conditions Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files and Medicare claim files.

Time Frame: Medicaid data cover May 2015–December 2020; FFS Medicare data cover May 2015–December 2021.

Definitions: ACSC = ambulatory care sensitive condition; CI = confidence interval; ED = emergency department; FFS = fee-for-service; PBPM = per beneficiary per month; PCP = primary care provider.

Interpretation: The overall impact estimate reported is the difference-in-differences estimate over the first 8 or 12 quarters after screening. The percentage difference is the overall difference-in-differences estimate as a percentage of the Alignment Track intervention group's mean for the outcome in the 12 quarters before screening.

## Compared to the Assistance Track, There Were Fewer Promising Impacts on Health and Quality of Care for the Alignment Track

For Medicaid beneficiaries in the Alignment Track, there were no statistically significant health or quality-of-care impact estimates and no clear pattern of direction (**Exhibit 8-5**). The percentage of beneficiaries who were newly treated with an antidepressant and remained on an antidepressant for at least 6 months increased relative to the comparison group, as expected. But the percentage of beneficiaries who were newly treated with an antidepressant medication and remained on an antidepressant for at least 12 weeks decreased relative to the comparison group, contrary to expectations. Similarly, the percentage of beneficiaries whose asthma medication ratio exceeded 50% increased relative to the comparison group, as expected. But the percentage of beneficiaries who received treatment for respiratory illnesses also increased relative to the comparison group, contrary to expectations.

For FFS Medicare beneficiaries, over the first 3 years after screening, 3.7% fewer FFS Medicare beneficiaries in the intervention group were treated for respiratory illnesses relative to the comparison group. This represents a 2-percentage point decrease and is consistent with expectations and statistically significant ( $P = .054$ ). There were no other statistically significant impacts on health or quality-of-care outcomes for FFS Medicare beneficiaries in the Alignment Track, and none of the other impacts were in the expected direction.



### Exhibit 8-5. Impacts on Health and Quality-of-Care Outcomes for Medicaid and FFS Medicare Beneficiaries in the Alignment Track

The percentage of FFS Medicare beneficiaries receiving treatment for respiratory illnesses decreased in the intervention group relative to the comparison group, but no other quality-of-care outcome impacts were statistically significant.

Outcome	Expected Direction of Impact	Medicaid				FFS Medicare			
		Baseline Adjusted Mean, Intervention Group	Difference-in-Differences (90% CI)	% Change	P-Value	Baseline Adjusted Mean	Difference-in-Differences (90% CI)	% Change	P-Value
Percentage of beneficiaries with asthma whose asthma medication ratio exceeded 50%	⋈	38	1 (-5, 7)	2.2	0.811	61	-3 (-11, 5)	-5.3	0.518
Percentage of beneficiaries who received treatment for respiratory illnesses	⋇	45	1 (-1, 2)	1.2	0.655	67	<b>-2* (-5, -0.4)</b>	-3.7	0.054
Percentage of beneficiaries who were newly treated with an antidepressant medication and remained on an antidepressant for at least 12 weeks	⋈	57	-1 (-11, 9)	-1.4	0.897	61	-5 (-11, 1)	-8.1	0.206
Percentage of beneficiaries who were newly treated with an antidepressant medication and remained on an antidepressant for at least 6 months	⋈	41	1 (-6, 9)	3.6	0.755	42	-2 (-12, 7)	-5.7	0.666

(continued)

**Exhibit 8-5. Impacts on Health and Quality-of-Care Outcomes for Medicaid and FFS Medicare Beneficiaries in the Alignment Track (continued)**

Outcome	Expected Direction of Impact	Medicaid				FFS Medicare			
		Baseline Adjusted Mean, Intervention Group	Difference-in-Differences (90% CI)	% Change	P-Value	Baseline Adjusted Mean	Difference-in-Differences (90% CI)	% Change	P-Value
Percentage of beneficiaries with alcohol or other drug dependence who initiated treatment within 14 days of a diagnosis	⋈	64	2 (-4, 8)	3.3		48	-7 (-17, 2)	-15	0.208

Legend: ⋇ Decrease      ⋈ Increase      ⋉ Could move in either direction

P-value: \*P-value < .10; \*\*P-value < .05; \*\*\*P-value < .01. Bolded numbers indicate a result that is statistically significant at a P-value < .10.

Sample Size: Medicaid: 7,532 intervention beneficiaries in the asthma medication ratio sample, 37,128 intervention beneficiaries in the treatment for respiratory illnesses sample, 5,997 intervention beneficiaries in the antidepressant medication management sample, and 3,558 intervention beneficiaries in the initiation sample. FFS Medicare: 987 intervention beneficiaries in the asthma medication ratio sample, 16,022 intervention beneficiaries in the treatment for respiratory illnesses sample, 1,512 intervention beneficiaries in the antidepressant medication management sample, and 1,805 intervention beneficiaries in the drug dependence treatment initiation sample.

Methods: Weighted logistic estimated impacts on all outcomes.

Weight variable: Propensity score analysis weight multiplied by number of months during the quarter the beneficiary was eligible for Medicaid or FFS Medicare divided by 3.

Source: RTI analysis of Chronic Conditions Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files and Medicare claim files.

Time Frame: Medicaid data cover May 2015–December 2020; FFS Medicare data cover May 2015–December 2021.

Definitions: CI = confidence interval; FFS = fee-for-service.

Interpretation: The overall impact estimate reported is the difference-in-differences estimate over the first 2 or 3 years after screening. The percentage difference is the overall difference-in-differences estimate as a percentage of the Alignment Track intervention group’s mean for the outcome in the 3 years before screening.

## Differences in Impacts for Beneficiary Subpopulations in the Assistance and Alignment Tracks

The AHC Model's eligibility requirements focused on higher-risk Medicaid and Medicare beneficiary populations. A large majority of navigation-eligible beneficiaries in the model had low incomes; about 75% were eligible for Medicaid only, and 10% were dually eligible for Medicaid and Medicare. In addition—as the [First Evaluation Report](#) showed for FFS Medicare beneficiaries and updated analyses confirmed for additional years and for Medicaid beneficiaries (see **Exhibits I-2 and I-13, Appendix I**)—the eligibility criteria for the AHC Model identified a chronically higher-need population. This was evidenced by a persistent pattern of elevated health care spending and utilization relative to beneficiaries screened but not eligible for navigation. Analyses in the [First Evaluation Report](#) also demonstrated that more HRSNs were associated with higher baseline expenditure and utilization levels—a finding that updated analyses also confirmed (see **Exhibits I-3 and I-14, Appendix I**). Recognizing that the AHC navigation-eligible population as a whole was an inherently higher-risk group, we examined whether the model had differing impacts on the following subpopulations that have historically faced barriers in accessing health care:

- Medicaid and FFS Medicare beneficiaries who are non-White and/or Hispanic as compared to those who are non-Hispanic White
- FFS Medicare beneficiaries who were dually eligible for Medicaid and Medicare as compared to FFS Medicare beneficiaries who were eligible for Medicare only
- Medicaid and FFS Medicare beneficiaries who reported more than one HRSN at screening as compared to those who reported a single HRSN
- Medicaid and FFS Medicare beneficiaries with disabilities as compared to those without disabilities
- Medicaid and FFS Medicare beneficiaries who lived in rural regions as compared to those who lived in urban regions

We report results for expenditures and ED visits below. Additional results for inpatient admissions and unplanned readmissions, as well as for all four outcomes for specific HRSNs, are available in **Appendix I** (see **Exhibits I-8 through I-11** and **Exhibits I-19 through I-22**). The results suggest the AHC Model may have had more favorable impacts on two subpopulations. First, evidence showed that there were more pronounced impacts for Medicaid beneficiaries in the Assistance Track who had multiple HRSNs relative to Medicaid beneficiaries in the Assistance Track who had one HRSN. Second, in the FFS Medicare population, evidence showed that there were more pronounced impacts for non-White and/or Hispanic FFS Medicare beneficiaries in the Assistance Track relative to non-Hispanic White FFS Medicare beneficiaries in the Assistance Track. Despite these promising findings, the evidence was not always consistent for other subpopulations when we looked at differences in impacts across outcomes or even payers for the same subpopulation. There was also little consistency across the Assistance and Alignment Tracks in whether and how impacts differed.

Subpopulations that have historically faced barriers in accessing health care were prevalent in both the Medicaid and FFS Medicare navigation-eligible populations (**Exhibit 8-6**). Among Medicaid beneficiaries and depending on the track, between 41% and 52% of beneficiaries were non-White and/or Hispanic, about 18% had a disability, between 11% and 18% lived in rural regions, and more than half and up to 64% had more than one HRSN. Among FFS Medicare beneficiaries and depending on the track, between 29% and 42% were non-White and/or Hispanic, 62% to 71% were dually eligible for Medicare and Medicaid, more than 60% had a disability, 17% to 24% lived in rural regions, and 48% to 55% had more than one HRSN.

## Exhibit 8-6. Subpopulations in the Navigation-Eligible Population, Both Tracks

Subpopulations that have historically faced barriers in access to health care were prevalent in the AHC Model navigation-eligible population.

Sub-population	Medicaid			FFS Medicare		
	Assistance Track Intervention (n=20,063)	Assistance Track Control (n=9,029)	Alignment Track Intervention (n=38,127)	Assistance Track Intervention (n=8,980)	Assistance Track Control (n=3,839)	Alignment Track Intervention (n=16,022)
Non-White and/or Hispanic (%)	41	42	52	29	29	42
Dually eligible for Medicare and Medicaid (%)	Not applicable	Not applicable	Not applicable	62	65	71
People with disabilities (%)	18	18	19	60	61	63
Rural (%)	17	18	11	22	24	17
More than 1 HRSN (%)	59	64	63	48	54	55

Source: RTI analysis of Chronic Conditions Data Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files and FFS Medicare claim files.

Time Frame: May 2015–December 2021.

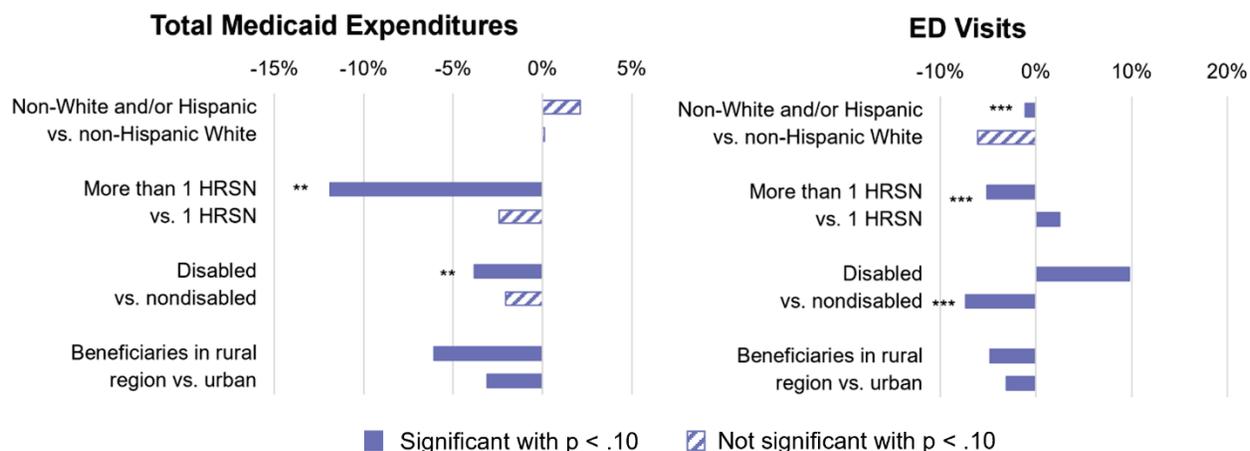
Definitions: FFS = fee-for-service; HRSN = health-related social need.

## Medicaid Beneficiaries in the Assistance Track Who Had Multiple HRSNs Had Larger Reductions in Expenditures and Hospital Utilization Than Those With One HRSN

**Exhibit 8-7** shows that Medicaid beneficiaries with multiple HRSNs in the intervention group had statistically significantly lower total Medicaid expenditures relative to beneficiaries with multiple HRSNs in the control group ( $P = .007$ ). In contrast, Medicaid beneficiaries with one HRSN in the intervention group did not have statistically significantly lower total Medicaid expenditures relative to beneficiaries with one HRSN in the control group. Thus, we found that there was a larger impact on total Medicaid expenditures for beneficiaries with multiple HRSNs relative to those with one HRSN ( $P = .034$ ). Moreover, Medicaid beneficiaries with multiple HRSNs in the intervention group had statistically significantly fewer ED visits relative to beneficiaries with multiple HRSNs in the control group ( $P < .001$ ), while beneficiaries with one HRSN in the intervention group had statistically significantly more ED visits relative to beneficiaries with one HRSN in the control group ( $P = .044$ ); the difference in these impacts was also statistically significant ( $P < .001$ ). Similarly, **Exhibit I-8 in Appendix I** shows that Medicaid beneficiaries with multiple HRSNs in the intervention group also had statistically significantly fewer inpatient admissions relative to beneficiaries with multiple HRSNs in the control group ( $P < .001$ ), while beneficiaries with one HRSN in the intervention group had statistically significantly more inpatient admissions relative to beneficiaries with one HRSN in the control group ( $P = .05$ ); the difference in these impacts was also statistically significant ( $P < .001$ ).

## Exhibit 8-7. Differences in Impacts for Subpopulations Within the Medicaid Assistance Track Population

Beneficiaries with more than one HRSN had larger reductions in both total Medicaid expenditures and ED visits compared to beneficiaries with one HRSN, suggesting that the model had more favorable impacts for beneficiaries with multiple HRSNs relative to beneficiaries with one HRSN. Differences across non-White and/or Hispanic vs. non-Hispanic White beneficiaries, disabled vs. nondisabled beneficiaries, and beneficiaries in rural regions vs. urban regions were not always significant or in the same direction across outcomes, suggesting a more complex relationship between these subpopulation characteristics and outcome-specific model impacts.



P-value (for test of equality between groups): \*P-value < .10; \*\*P-value < .05; \*\*\*P-value < .01.

Sample Size: N=17,585 intervention beneficiaries in the race/ethnicity subpopulation analysis; N=20,417 intervention beneficiaries in all other subpopulation analyses.

Methods: Weighted ordinary least squares specification estimated differences in total expenditures. Weighted Poisson specifications estimated differences in emergency department visits. Weight variable: Number of months during the quarter the beneficiary was eligible for Medicaid divided by 3.

Source: RTI analysis of Chronic Conditions Data Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files claims.

Time Frame: May 2018–December 2020.

Definitions: ED = emergency department; HRSN = health-related social need.

Interpretation: The percentage difference was the overall impact estimate as a percentage of the Assistance Track control group's mean for the outcome in the 8 quarters after screening.

Other subpopulation results for Medicaid were more mixed with respect to consistency across outcomes and the extent to which of the compared subpopulations experienced greater reductions in expenditures and hospital-based utilization. Over the first 2 years after screening, non-White and/or Hispanic Medicaid beneficiaries in the Assistance Track had a statistically significant smaller reduction in ED visits than non-Hispanic White beneficiaries ( $P = .001$ , **Exhibit 8-7**). Differences in impacts for beneficiaries with and without disabilities were also mixed. Beneficiaries with disabilities had a statistically significant larger reduction in total Medicaid expenditures than beneficiaries without disabilities ( $P = .012$ ). However, beneficiaries with disabilities also had a statistically significant increase in ED visits ( $P < .001$ ), while beneficiaries without disabilities had a statistically significant decrease in ED visits ( $P < .001$ ); the difference in impacts was also significant ( $P < .001$ ). While we would normally expect that a decrease in expenditures would be driven by a decrease in ED visits or some other utilization outcome, because most Medicaid beneficiaries were in managed care plans for whom expenditures represent a capitated payment, the link between expenditures and utilization is weaker. Lastly, despite the overall impact on total Medicaid expenditures not being statistically significant, beneficiaries who lived in rural and urban regions both had statistically significant reductions in total Medicaid expenditures (rural:  $P = .058$ ; urban:  $P = .014$ ). Beneficiaries in each of these subpopulations also had statistically significant decreases in ED visits (rural:  $P = .004$ ;

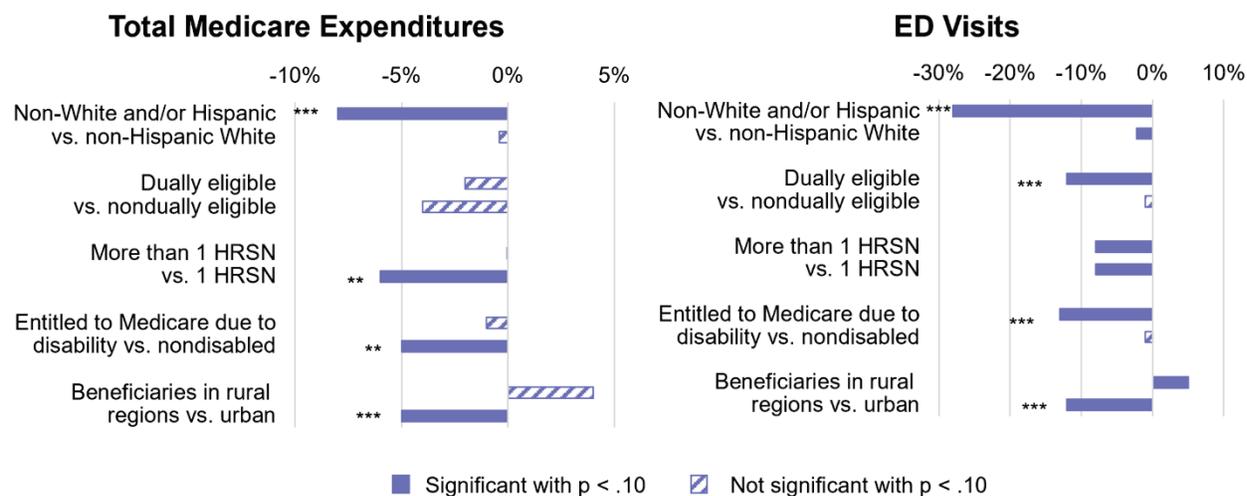
urban:  $P < .001$ ). However, the differences between rural and urban residents in the total Medicaid expenditure and ED visit impacts were not statistically significant.

### **Non-White and/or Hispanic FFS Medicare Beneficiaries in the Assistance Track Had Larger Reductions in Expenditures and Hospital Utilization Than Non-Hispanic White Beneficiaries**

**Exhibit 8-8** shows that non-White and/or Hispanic FFS Medicare beneficiaries had statistically significantly lower total Medicare expenditures relative to non-White and/or Hispanic beneficiaries in the control group ( $P < .001$ ). Non-White and/or Hispanic FFS Medicare beneficiaries also had statistically significantly larger reductions in total Medicare expenditures than non-Hispanic White beneficiaries ( $P = .001$ ). Moreover, non-White and/or Hispanic beneficiaries and non-Hispanic White beneficiaries both had statistically significantly fewer ED visits relative to beneficiaries in these populations in the control group ( $P < .001$  for non-White and/or Hispanic;  $P = .044$  for non-Hispanic White). Non-White and/or Hispanic FFS Medicare beneficiaries also had statistically significantly larger reductions in ED visits than non-Hispanic White beneficiaries ( $P < .001$ ). **Exhibit I-19, Appendix I** also shows that non-White and/or Hispanic beneficiaries had statistically significant decreases in both inpatient admissions and unplanned readmissions ( $P < .001$  for both outcomes), while non-Hispanic White beneficiaries had increases in these outcomes that were not statistically significant; the difference in impacts was statistically significant ( $P < .001$  for both outcomes).

## Exhibit 8-8. Differences in Impacts for Subpopulations in the FFS Medicare Assistance Track Population

Non-White and/or Hispanic beneficiaries had larger reductions in both total Medicare expenditures and ED visits compared to White beneficiaries, suggesting that the model had more favorable impacts for non-White and/or Hispanic beneficiaries relative to non-Hispanic White beneficiaries. Differences across dually eligible vs. nondually eligible beneficiaries, beneficiaries with multiple HRSNs vs. one HRSN, and beneficiaries in rural regions vs. urban regions were not always significant or in the same direction across outcomes, suggesting a more complex relationship between these subpopulation characteristics and outcome-specific model impacts.



P-value (for test of equality between groups): \*P-value < .10; \*\*P-value < .05; \*\*\*P-value < .01.

Sample Size: N = 8,980 intervention beneficiaries.

Methods: Weighted ordinary least squares specification estimated differences in total expenditures. Weighted Poisson specifications estimated differences in emergency department visits. Weight variable: Number of months during the quarter the beneficiary was eligible for fee for service Medicare divided by 3.

Source: RTI analysis of Chronic Conditions Data Warehouse fee for service Medicare claims.

Time Frame: May 2018–December 2021.

Definitions: ED = emergency department; HRSN = health-related social need.

Interpretation: The percentage difference is the overall impact estimate as a percentage of the Assistance Track control group's mean for the outcome in the 12 quarters after screening.

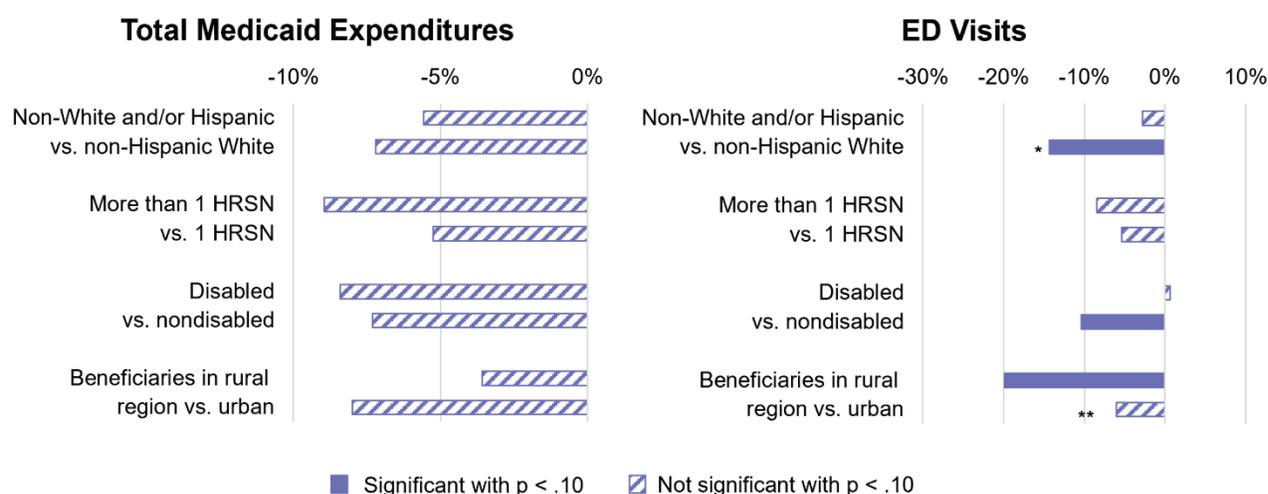
Like Medicaid, other results among FFS Medicare beneficiaries were more mixed. Dually eligible beneficiaries had a statistically significant larger reduction in ED visits than beneficiaries who were not dually eligible ( $P < .001$ ). Beneficiaries with multiple HRSNs had a statistically significant smaller reduction in total expenditures than beneficiaries with one HRSN ( $P = .038$ ). However, beneficiaries with multiple HRSNs and beneficiaries with one HRSN both had statistically significant reductions in ED visits (multiple HRSNs:  $P < .001$ ; one HRSN:  $P < .001$ ), but these impacts were not statistically different from each other. Beneficiaries with disabilities had a smaller reduction in total Medicare expenditures than beneficiaries without disabilities ( $P = .047$ ), but beneficiaries with disabilities also had a statistically significant larger reduction in ED visits than beneficiaries without disabilities ( $P < .001$ ). Lastly, beneficiaries in rural regions had a statistically significant increase in ED visits, whereas beneficiaries in urban regions had a statistically significant reduction in ED visits (rural:  $P = .020$ ; urban:  $P < .001$ ); the difference in impact was also statistically significant ( $P < .001$ ). The difference in impact for total expenditures between beneficiaries in rural and urban regions was also statistically significant ( $P = .009$ ): beneficiaries in rural regions had an increase in total expenditures that was not statistically significant, and beneficiaries in urban regions had a reduction in total expenditures that was statistically significant ( $P < .001$ ).

## Subpopulation-Specific Impacts in the Alignment Track Differed for Fewer Subpopulations Than in the Assistance Track

Although there was some evidence in the Assistance Track that the AHC Model may have affected some subpopulations that have historically faced barriers in access in favorable ways, there were fewer statistically significant differences and less consistency in the subpopulation results for the Alignment Track (**Exhibit 8-9**). Over the first 2 years after screening, among Medicaid beneficiaries in the Alignment Track, non-White and/or Hispanic beneficiaries had a statistically significant smaller reduction in ED visits than non-Hispanic White beneficiaries ( $P = .064$ ), while beneficiaries in rural regions ( $P = .036$ ) had a statistically significant larger reduction in ED visits than beneficiaries in urban regions. There were no other statistically significant differences in total Medicaid expenditures or ED visit impacts between subpopulation groups for the Alignment Track. However, as with the main impact analyses, a lack of statistical power may have made it more difficult to identify differences in impacts across Alignment Track subpopulations.

### Exhibit 8-9. Differences in Impacts for Subpopulations in the Medicaid Alignment Track Population

Impacts on ED visits differed for Medicaid beneficiaries in the Alignment Track living in rural regions compared to beneficiaries living in urban regions.



P-value (for test of equality between groups): \*P-value < .10; \*\*P-value < .05; \*\*\*P-value < .01.

Sample Size: N=31,992 intervention beneficiaries in the race/ethnicity subpopulation analysis; N=38,127 intervention beneficiaries in all other subpopulation analyses.

Methods: Weighted ordinary least square specification estimated differences in total expenditures. Weighted Poisson specifications estimated differences in emergency department visits. Weight variable: Propensity score analysis weight multiplied by the number of months during the quarter the beneficiary was eligible for Medicaid divided by 3.

Source: RTI analysis of Chronic Conditions Data Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files claims.

Time Frame: May 2018–December 2020.

Definitions: ED = emergency department; HRSN = health-related social need.

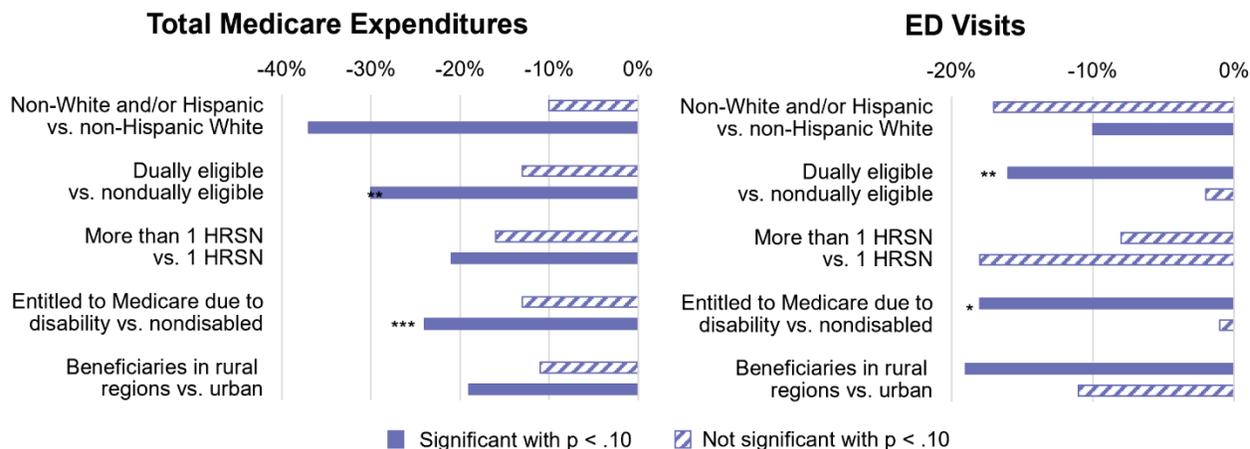
Interpretation: The percentage difference is the overall difference-in-differences estimate as a percentage of the Alignment Track intervention group's mean for the outcome in the 12 quarters before screening.

Over the first 3 years after screening, among FFS Medicare beneficiaries in the Alignment Track, dually eligible beneficiaries ( $P = .011$ , **Exhibit 8-10**) and beneficiaries with disabilities ( $P = .001$ ) had a statistically significantly smaller decrease in total Medicare expenditures than beneficiaries not in these subpopulations. In contrast, dually

eligible beneficiaries (P = .014) and beneficiaries with disabilities (P = .099) had statistically significantly larger decreases in ED visits than beneficiaries not in these subpopulations. There were no other statistically significant differences in total Medicare expenditure or ED visit impacts between subpopulation groups for the Alignment Track.

### Exhibit 8-10. Differences in Impacts for Subpopulations in the FFS Medicare Alignment Track Population

Impacts differed for several subpopulations among FFS Medicare beneficiaries in the Alignment Track, though differences were not always statistically significant or in the same direction across outcomes.



P-value (for test of equality between groups): \*P-value < .10; \*\*P-value < .05; \*\*\*P-value < .01.

Sample Size: N = 16,022 intervention beneficiaries.

Methods: Weighted ordinary least squares specification estimated differences in total expenditures. Weighted Poisson specifications estimated differences in emergency department visits. Weight variable: Propensity score analysis weight multiplied by number of months during the quarter the beneficiary was eligible for fee for service Medicare divided by 3.

Source: RTI analysis of Chronic Conditions Data Warehouse fee for service Medicare claims.

Time Frame: May 2018–December 2021.

Definitions: ED = emergency department; HRSN = health-related social need.

Interpretation: The percentage difference is the overall difference-in-differences estimate as a percentage of the Alignment Track intervention group's mean for the outcome in the 12 quarters before screening.

## Conclusions

Findings through the first 2 years after screening for Medicaid beneficiaries and the first 3 years after screening for FFS Medicare beneficiaries provide evidence that the AHC Model may have been effective in reducing ED use. Impact estimates for the Assistance Track show statistically significantly reduced ED use for Medicaid and FFS Medicare beneficiaries. Results for the Alignment Track show similar reductions in ED use for both Medicaid and FFS Medicare beneficiaries, but these results were not statistically significant, possibly because the comparison group methodology had less statistical power to detect statistically significant differences. In future reports, we plan to explore a Bayesian methodology to quantify the strength of evidence and better highlight the extent to which the data provide strong evidence in favor of hypothesized impacts in the Alignment Track despite the lack of significance that derives from the lack of statistical power in these analyses. Specifically, we will explore Bayesian approaches to better differentiate between impact estimates that are meaningfully large even though they are not statistically significant (i.e., those that provide strong evidence of an impact) versus impact estimates that are not meaningfully large. The reductions in ED use presented in this chapter for Medicaid and FFS Medicare beneficiaries

are consistent with early impacts for FFS Medicare beneficiaries reported in the [First Evaluation Report](#). Other outcomes suggest favorable impacts on hospital-based utilization and total expenditures in both tracks, but these were not statistically significant. Health and quality-of-care outcomes showed some promising impacts, particularly on the percentage of beneficiaries treated for respiratory illness. However, most outcomes showed little change, even if the change was in the expected direction.

Evidence that the AHC Model reduced ED use is notable because, as reported in **Chapter 7**, there is no evidence that navigation through the model increased beneficiaries' connection with CSPs or resolution of their HRSNs. The AHC Model assumed that resolving beneficiaries' HRSNs through navigation to services will improve their health outcomes and reduce health care utilization. However, interviews with bridge organization leads and other model participants suggested screening and navigation alone could have direct impacts on utilization, independent of any HRSN resolution. Consistent with our findings, stakeholders were most optimistic that they would be able to affect ED use. Respondents reported that the screening and navigation process created trust, which they could build on to help patients better navigate the health care system. Some stakeholders also mentioned providing practical assistance, such as transportation to appointments, that increased patients' compliance with their health care plans and appointments, thus reducing their reliance on the ED. Furthermore, it is possible that exposure to navigation services improved beneficiaries' ability to navigate the health care system in other ways. For example, beneficiaries may have been better able to take advantage of services that case managers or care coordinators provided after experiences working with navigators to address their HRSNs.

The subpopulation analyses suggest there may be more pronounced impacts for some groups of beneficiaries who have historically faced barriers to accessing health care. However, the evidence was not always consistent across outcomes or even payers for the same subpopulation. Furthermore, in some cases impacts were more favorable for beneficiaries in subpopulations that have historically faced barriers to access, while in other cases impacts were less favorable. These differing impacts could reflect that HRSNs may mediate outcomes for subpopulations in different ways, so the AHC Model would not be expected to have the same impact on all subpopulations. There was also little consistency across the Assistance and Alignment Tracks in whether and how impacts differed. This partly reflects lower statistical power to detect differences in the Alignment Track. The most consistent patterns were more favorable impacts on all or nearly all of the outcomes assessed for Assistance Track Medicaid beneficiaries with more than one HRSN and for Assistance Track FFS Medicare beneficiaries who are non-White and/or Hispanic.

Findings to date on model implementation do not shed light on what may be driving differential impacts on subpopulations. It is likely that impacts vary among bridge organizations. If groups that have historically faced barriers to access are more prevalent in some bridge organizations, this could contribute to differing impacts across subpopulations. Future analyses will examine contextual, organizational, and implementation factors that may be associated with more favorable impacts for the AHC population overall. For example, bridge organizations with more ED CDSs may have chosen those partnerships because of better preexisting relationships with the EDs in their communities or may have developed stronger relationships with these EDs through their participation in the model. In either event, this could lead to a better ability to affect ED use. Screening setting could also be associated with the characteristics of a bridge organization's navigation-eligible population. Thus, understanding the factors associated with more favorable impacts may provide insights into why and how impacts differ for some subpopulations.



## Chapter 9: Conclusion

The Second Evaluation Report covers the progress and impacts through the AHC Model's first 3.5 years of performance (May 2017 through December 2021).

The observation period for this report included the onset of the COVID-19 pandemic and the months of societal disruption that followed, making the pandemic an important contextualizing factor for the analyses we present in the AHC Model's Second Evaluation Report. The report characterizes the beneficiaries of the AHC Model, the bridge organizations and their partners, and the communities they serve. We explore the community and organizational context of implementation at length, as well as the progress toward achieving screening, navigation, and resolution outcomes for Medicare and Medicaid beneficiaries. It is the first evaluation report to present impact findings for the Medicaid population. This final chapter summarizes our main conclusions.

Despite promising results thus far, this is an interim report, and the findings presented here are too early to definitively attribute changes in outcomes to the model. In addition, the limitations of the evaluation data (e.g., lack of timeliness, nonresponse, insufficient sample size in the Alignment Track) circumscribe the conclusions we can draw in this and future reports. However, we mitigate data limitations by using multiple sources of data to validate each finding. Additional data may change or reinforce our current assessment of the model's impact.

## The AHC Model Was Able to Screen, Refer, and Navigate Beneficiaries Despite Significant Implementation Challenges

Through December 2021, bridge organizations screened 1,020,864 unique beneficiaries. Since the [First Evaluation Report](#), the percentage of beneficiaries reporting one or more of the five core HRSNs increased (from 34% to 37%), as did the percentage reporting two or more ED visits, thus increasing the percentage eligible for navigation (from 15% to 18%). Food insecurity and housing remained the most reported needs. We explored the possibility that the COVID-19 pandemic had increased or decreased eligibility for navigation because of an increase in HRSNs or a decrease in ED visits, but we found no sustained effect. Reported HRSNs and ED visits remained mostly stable during the pandemic.

The COVID-19 pandemic did disrupt screening implementation. Screening rates declined sharply during the first few months of the pandemic, reaching their lowest point in April 2020. Although screening rates increased over the following year, they never fully recovered to pre-pandemic levels. The recovery could be attributed to the flexibilities implemented by the Innovation Center to allow bridge organizations to screen virtually and uncouple screening from the clinical encounter (to pre- and post-visit). Bridge organizations redefined workflows and work roles and assumed screening responsibilities from the CDSs.

The AHC Model continued, as reported in the [First Evaluation Report](#), to reach underserved communities. Beneficiaries eligible for Medicaid only or dually eligible for both Medicaid and Medicare represented 70% of screened beneficiaries but 87% of navigation-eligible beneficiaries. Among screened beneficiaries, individuals who are racial and ethnic minorities were more likely to be eligible for navigation than those who are White.

Acceptance of navigation remained high and increased from the [First Evaluation Report](#) (from 74% to 77%), suggesting a robust demand for assistance. Navigation acceptance did not differ by type of payer; type of need; or beneficiary characteristics such as race and ethnicity, age, or education.

## Navigation May Not Be a Sufficient Intervention to Increase Connection to Services and Resolve HRSNs

Among all beneficiaries with a closed navigation case, just over a third (36%) had at least one HRSN documented as resolved and a quarter (25%) had all needs resolved. The results of a follow-up survey of beneficiaries 6 months post-screening showed that offering navigation did not increase the likelihood of connecting to a service, however. Because about half of beneficiaries connected to a service regardless of whether they received navigation, it is not surprising that we found no effect of navigation on HRSN resolution. Slightly under half of beneficiaries who had a housing, transportation, or utility need reported it resolved 6 months post-screening. Resolution of food needs was lower: only a quarter of beneficiaries reported this need resolved. Beneficiaries in the Alignment Track reported similar rates of connection and resolution as those in the Assistance Track. This finding from the follow-up survey suggests that the community alignment intervention did not confer any added benefit beyond referral or assistance.

Many of the 6-month follow-up survey respondents whose needs had been resolved indicated AHC navigation was only one of several strategies they used. Other strategies included help from family, friends, and case workers. These findings suggest that resources for navigation might be more effectively prioritized to help those beneficiaries with the fewest or weakest sources of support.

The effect of navigation may have been blunted by organizational- and community-level factors. Over half of the CSPs surveyed reported being “severely impacted” by the pandemic. Housing (unit shortages, restrictive eligibility requirements) and transportation were the most persistent deficiencies the CSPs cited as affecting the ability to address beneficiaries’ HRSNs. Bridge organizations experienced difficulties staying abreast of CSP hours of

operation, COVID-19 restrictions, and complex and evolving eligibility requirements. Moreover, few had systems that allowed for electronic tracking of referrals and bidirectional communication with CSPs.

## **Alignment Activities Supported Multisector Efforts to Address HRSNs, but Their Impact on Outcomes Remains Unclear**

Despite the daunting individual, organizational, and community capacity challenges impeding HRSN resolution, Alignment Track bridge organizations and partners viewed advisory boards as an important driver of systemic changes to address HRSNs. Advisory boards served as a forum to assess service gaps and HRSN data; improve implementation of screening and navigation through QI activities; and, most importantly, build partnerships and familiarity between clinical and community provider representatives who otherwise seldom interacted. Nearly half of the Assistance Track bridge organizations, although their award terms did not require them to do so, also engaged in alignment-like activities involving multisector partners. This suggests that some vehicle for multisector communication and collective action may be necessary for effective navigation assistance.

Although alignment activities may have value for multisector collaboration and planning, the evidence to date does not suggest alignment alone was able to overcome barriers to connecting beneficiaries with CSPs. Beneficiaries in the Alignment Track were no more likely to connect to services or resolve their HRSNs than beneficiaries in the Assistance Track. Likewise, health care utilization outcomes were not significantly different between the two tracks. A plausible reason for this lack of measurable effect is the finding that the Assistance Track bridge organizations also conducted alignment-related activities, which reduced the observed difference between the two tracks.

Whether the alignment activities specified in the Alignment Track protocol (e.g., gap analysis, QI plans) resulted in better screening and navigation outcomes and increased community capacity than in the Assistance Track will be examined in the Third Evaluation Report.

## **The Pathway to AHC Model Impacts on Health Care Utilization May Not Depend on Connection to CSPs or Resolution of HRSNs**

Findings through the first 2 years post-screening for Medicaid beneficiaries and the first 3 years post-screening for FFS Medicare beneficiaries suggest the AHC Model may have been effective in reducing ED use. Impact estimates show significant reductions in ED use for both Medicaid and FFS Medicare beneficiaries in the Assistance Track. Results for the Alignment Track are consistent with reductions in ED use for both Medicaid and FFS Medicare beneficiaries. The latter results are not statistically significant, however, plausibly because the Alignment Track impact analyses are statistically underpowered compared to those of the Assistance Track. Reductions in ED use are also consistent with the early impacts for FFS Medicare beneficiaries reported in the [First Evaluation Report](#). Other outcomes suggest favorable impacts on hospital-based utilization and total expenditures in both tracks, but these were not statistically significant.

Evidence that the AHC Model reduced ED use is notable because, as discussed earlier, there is no evidence that navigation through the model increased beneficiaries' connection with CSPs or resolution of their HRSNs. Although the AHC Model's theory of action assumes that resolving beneficiaries' HRSNs will improve their health outcomes and thus reduce unnecessary health care utilization, our findings suggest a different causal pathway. Interviews with bridge organization leads and other model participants indicated that the screening and navigation intervention itself may have changed how beneficiaries use health care. They might have acquired knowledge to

help them better navigate the health care system or obtained practical assistance to maintain their health (e.g., transportation to medical appointments).

Thus, resolution of HRSNs may not be a necessary and sufficient factor in reducing ED use. As we have reported in this and prior reports, most beneficiaries enrolled in the model have more than one HRSN. In the next report, we will explore the effect of HRSN reoccurrence on implementation and model outcomes. We expect HRSNs to reoccur after resolution and that, at any given time, beneficiaries are beset by one or more unresolved HRSNs. The challenges to connecting beneficiaries to services and the deficiencies in community capacity create conditions for transitory resolution. AHC stakeholders indicated that short-term alleviation of some needs would be the most the model could accomplish. Nonetheless, helping beneficiaries avoid unnecessary ED visits is a positive and encouraging model outcome considering that addressing structural barriers such as racism, poverty, and the lack of resources is a long-term, societal endeavor.

## **The AHC Model May Have More Impact on Subpopulations Within Underserved Communities**

Subpopulation analyses in the Assistance Track suggest more pronounced impacts for some beneficiaries with more than one HRSN and some non-White and/or Hispanic beneficiaries. First, Medicaid beneficiaries who had more than one HRSN had statistically significantly larger reductions in total Medicaid expenditures, ED visits, and inpatient admissions than beneficiaries with one HRSN. Second, non-White and/or Hispanic FFS Medicare beneficiaries had statistically significantly larger reductions in total Medicare expenditures, ED visits, inpatient admissions, and unplanned readmissions than non-Hispanic White beneficiaries. We did not find consistently more or less favorable impacts across outcomes for other subpopulations. We also found no consistency between Medicaid and FFS Medicare beneficiaries in whether impacts were more favorable for some subpopulations than their counterparts. Likewise, there was little consistency across the Assistance and Alignment Tracks, which partly reflects the lower statistical power to detect differences in the Alignment Track.

The factors that may be driving differential impacts on subpopulations that have historically experienced barriers to health care access remain to be explored. It is likely that impacts vary among bridge organizations. If these subpopulations are more prevalent in some bridge organizations, this could contribute to differing impacts. Also, the differing impacts could reflect that HRSNs may mediate outcomes for subpopulations in different ways, so we would not expect the AHC Model's impacts to be the same for all subpopulations. Experience with prior models or practice transformation could also affect outcomes. Layering the AHC Model on existing Innovation Center models or other wraparound services may be a unique contributor to model success.

## **Next Steps**

The first two evaluation reports focused on describing the individual, organizational, and community factors that could affect implementation and impacts on health care utilization. The Third Evaluation Report will systematically explore how these factors contribute to differences in implementation success among the bridge organizations. Implementation success would include ensuring all beneficiaries are screened (reach), adhering to model requirements (fidelity), connecting beneficiaries to CSPs, and sustaining model activities post-award. Bridge organizations' varied approaches to implementation and differences in their contexts and resource availability are reflected in findings presented here. Moving forward, exploration of these differences will increase understanding of which factors were critical to implementation success and why some subpopulations were affected more than others.

# References

- Allard, S.W.: Access to Social Services: The Changing Urban Geography of Poverty and Service Provision. Washington, DC: Brookings Institution, Metropolitan Policy Program, 2004.
- Allard, S.W, and Roth, B.: Strained Suburbs. Brookings Institute Metropolitan Opportunity Series, 2010.
- Butler, D.C., Petterson, S., Phillips, R.L., et al.: Measures of social deprivation that predict health care access and need within a rational area of primary care service delivery. Health Serv Res. 48(2 Pt 1):539-559, 2013.
- Caleyachetty, R., Echouffo-Tcheugui, J.B., Muennig, P., et al.: Association between cumulative social risk and ideal cardiovascular health in US adults: NHANES 1999-2006. Int J Cardiol. 191:296-300, 2015.
- Centers for Medicare & Medicaid Services: Accountable Health Communities Model. 2021. Available from <https://innovation.cms.gov/innovation-models/ahcm>
- Centers for Medicare & Medicaid Services: Accountable Health Communities (AHC) Model Evaluation: First Evaluation Report. December 2020. Available from <https://innovation.cms.gov/data-and-reports/2020/ahc-first-eval-rpt>
- Centers for Medicare & Medicaid Services: Medicare Telemedicine Health Care Provider Fact Sheet. March 17, 2020. Available from <https://www.cms.gov/newsroom/fact-sheets/medicare-telemedicine-health-care-provider-fact-sheet>
- Dorch, E.L., Bathman, J., Foster, D., et al.: Social service availability & proximity and the over-representation of minority children in child welfare. J Health Hum Serv Adm. 1:277-320, 2010.
- Echouffo-Tcheugui, J.B., Caleyachetty, R., Muennig, P.A., et al.: Cumulative social risk and type 2 diabetes in US adults: The National Health and Nutrition Examination Survey (NHANES) 1999–2006. Eur J Prev Cardiol. 23(12):1282-1288, 2016.
- Forchuk, C., Dickins, K., and Corring, D.J.: Social determinants of health: housing and income. Healthc Q. 18 Spec No:27-31, 2016. doi:10.12927/hcq.2016.24479.
- Goodman, R.M., Speers, M.A., McLeroy, K., et al.: Identifying and defining the dimensions of community capacity to provide a basis for measurement. Health Educ Behav. 25(3):258-278, 1998.
- Harrison, D.: State, local governments slashed spending after Covid. Next year could be worse. The Wall Street Journal. 29 Nov, 2020.
- Hatem, C., Lee, C.Y., Zhao, X., et al.: Food insecurity and housing instability during early childhood as predictors of adolescent mental health. J Fam Psychol. 34(6):721-730.
- Hawe, P., Noort, M., King, L., et al.: Multiplying health gains: the critical role of capacity-building within health promotion programs. Health Policy. 39(1), 29-42, 1997.
- Kim, M.H., and Xiang, X.: Hospitalization trajectories in home- and community-based services recipients: the influence of physician and social care density. J Gerontol B Psychol Sci Soc Sci. 76(8):1679-1690. 2021.
- Kuhlthau, K.A.: Measures of availability of health care services for children. Acad Pediatr. 11(3):S42-8, 2011.

- Labonte, R., and Laverack, G.: Capacity building in health promotion, Part 1: For whom? And for what purpose?. Crit Public Health. 11(2):111-127, 2001.
- Melnick, G., O’Leary, J.F., Zaniello, B.A., et al.: COVID-19 driven decline in emergency visits: Has it continued, is it permanent, and what does it mean for emergency physicians. Am J Emerg Med. 61:64-67, 2022.
- Ohrnberger, J., Fichera, E., and Sutton, M.: The relationship between physical and mental health: a mediation analysis. Soc Sci Med. 195:42-49, 2017.
- Robert Graham Center: Social Deprivation Index (SDI). Available from <https://www.graham-center.org/maps-data-tools/social-deprivation-index.html> . n.d.
- Sederer, L.I.: The social determinants of mental health. Psychiatr Serv. 67(2):234-5, 2016.
- Snow, D.M., Kikuchi, G., and Kissner, J.: A multilevel analysis of registered sex offender violation status: the role of neighborhood disadvantage and social services. Int J Criminol Sociol. 4:1-5, 2015.
- Stein, R.E., Siegel, M.J., and Bauman, L.J.: Double jeopardy: what social risk adds to biomedical risk in understanding child health and health care utilization. Acad. Pediatr. 10:165-171, 2010.
- U.S. Census Bureau: American Community Survey 5-Year Data (2009-2018). Available from <https://www.census.gov/data/developers/data-sets/acs-5year.html>. Updated December 19, 2019. As obtained on December 26, 2019.

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<b>Chapter 2: Banner photos (Clockwise from upper left)</b>		
Louise Beaumont	Moment	1194062241
Richard Newstead	Moment	1428763642
Willie B. Thomas	DigitalVision	1190822898
Marko Geber	DigitalVision	1272679191
Chapter 2 additional photo pg 11		
Flashpop	DigitalVision	1343818824
<b>Chapter 3 : Banner photo</b>		
sshepard	E+	183361838
Chapter 3 additional photo pg 36		
MoMo Productions	Digital Visions	1363267292
<b>Chapter 4: Banner photos (Clockwise from upper left)</b>		
Israel Sebastian	Moment	1290465851
SDI Productions	E+	155389557
Jasmin Merdan	Moment	909708526
Chapter 4 additional photo pg 45		
FatCamera	E+	1292038942
Chapter 4 additional photo pg 50		
Klaus Vedfelt	DigitalVision	1356172416
<b>Chapter 5: Banner photo</b>		
SDI Productions	E+	1189423762
Chapter 5 additional photo pg 71		
Sarah Mason	DigitalVision	1208882141
<b>Chapter 6: Banner photos (Clockwise from upper left)</b>		
JGI/Tom Grill	Tetra Images	557475803
Courtney Hale	E+	1200862807
LightFieldStudios	iStock / Getty Images Plus	803114058
Chapter 6 additional photos pg 74		
Courtney Hale	E+	1159477417
Chapter 6 additional photos pg 80		
sturti	E+	1344418500
<b>Chapter 7: Banner photo</b>		
Oliver Rossi	DigitalVision	1358222430
Chapter 7 additional photos pg 92		
PeopleImages	iStock / Getty Images Plus	1380983332
<b>Chapter 8: Banner photos (Clockwise from upper left)</b>		
Cavan Images	Cavan	961288150
Denis Tangney Jr	E+	182172165
SolStock	E+	516181986
Luis Alvarez	DigitalVision	1204686267
Chapter 8 additional photos pg 115		

Credit	Collection	Getty ID #
FS Productions	Tetra images	906007728
Chapter 8 additional photos pg 118		
Maskot	Maskot	1188431986
<b>Chapter 9: Banner photo</b>		
Nick David	DigitalVision	936311236

# Appendix A: AHC Evaluation Research Objectives and Questions Referenced in Chapter 1

## Research Objectives and Questions Addressed in the Second Evaluation Report

**Research Objective 1:** Examine the context within which the AHC Model was implemented for the purpose of understanding 1) the implementation of the AHC Model, 2) the characteristics associated with its success or failure, and 3) the generalizability of model impacts across a wider population.

- **Describe the beneficiaries served under the AHC Model.**  
What are their HRSNs and risk status?  
What are their demographic, socioeconomic, and health-related traits?  
Are there key differences or similarities (e.g., demographics, types of social needs identified) in the types of beneficiaries served between the two tracks, between the intervention and control groups, or across bridge organizations?
- **Describe the bridge organizations participating in the AHC Model.**  
What are the key structural and organizational characteristics of bridge organizations, CDSs, and other key participants in the AHC Model?  
How do these vary across participants?
- **Describe the communities served under the AHC Model.**  
What are the key contextual characteristics of the communities in which bridge organizations are located (sociodemographic, health related, and social risk factors)?  
How are these characteristics similar or different across communities?
- **Describe the HRSN support system in AHC Model communities.**  
What types of community resources are available to address HRSNs in the communities within which bridge organizations are located?  
How do the availability and quality of community resources vary across bridge organizations?

## Research Objectives and Questions Addressed in the Second Evaluation Report

**Research Objective 2:** Examine how the AHC Model was implemented to understand 1) how variations or similarities in implementation affect success or failure and 2) the generalizability of the AHC interventions.

- **How are bridge organizations and CDSs implementing the AHC interventions?**  
How do the planned approach and fidelity to the planned approach vary across bridge organizations and over time?  
How do the contextual characteristics affect implementation of the AHC Model?  
How do structural, operational, and other key factors evolve over the course of model implementation?
- **What is usual care for addressing the core HRSNs?**  
Is there variation in approaches to usual care across CDSs and bridge organizations? How does usual care evolve over the course of the AHC Model implementation period?
- **How engaged are CDSs and other key stakeholders in implementing the AHC Model?**  
How does the varying degree of engagement affect implementation of the AHC Model across bridge organizations and CDSs?
- **How do the types and amount of community resource available affect the delivery of the AHC interventions?**  
How does the availability of community resources evolve over the course of model implementation?
- **How have bridge organizations operationalized community alignment?**  
What types of structural supports are used for community alignment?  
How are bridge organizations using data to align communities and serve beneficiaries with HRSNs?  
What are the similarities and differences in bridge organizations' approach to community alignment?
- **What other types of alignment initiatives to address social determinants are underway in AHC communities?**  
How might these initiatives affect the AHC model and its impacts?
- **What types of multisector partnerships exist in AHC communities to address HRSNs?**  
How do these vary across communities?
- **Assistance Track only: Is randomization producing treatment and control groups that are balanced on observed characteristics (e.g., clinical, demographics, and others)?**  
Does evidence suggest there might be unobserved differences in the treatment and control groups?
- **What kinds of unanticipated challenges arose during model implementation?**  
How do bridge organizations respond to these challenges?  
What are the similarities and differences in responses between sites that have effectively implemented the model and those that have struggled?
- **What types of supports must bridge organizations and CDSs receive in order to successfully implement the AHC Model?**  
What changes were implemented as a result of monitoring, learning and diffusion activities, and evaluation activities?  
Should these changes be considered for part of any model replications? What are the lessons learned?

## Research Objectives and Questions Addressed in the Second Evaluation Report

**Research Objective 3.** Relative to usual care (screening and referral for HRSNs), examine and estimate the impact of the interventions in the Assistance and Alignment Tracks.

- **Are there differences in findings for key outcomes by subpopulations including clinical characteristics, payer type, social needs, sociodemographic characteristics, contextual, organizational, or other key factors?**

**Research Objective 4:** Examine the factors or conditions and the variations and similarities therein that brought about the impacts and how these factors impact the generalizability of the AHC interventions.

- **What key contextual factors including organizational, structural, demographic, and other key characteristics of model participants and stakeholders, contributed to the impacts identified?**  
Under what kinds of contextual conditions are the AHC interventions most likely to succeed? To fail?
- **What are the key implementation drivers of the impacts?**  
How do variations in implementation of the model across bridge organizations and CDSs impact the key outcomes of the AHC Model?
- **To what extent do alignment initiatives affect the key outcomes of the AHC Model?**  
How effective are alignment strategies in improving health outcomes and social needs and reducing health care costs and expenditures?
- **What are other key drivers of the identified impacts?**  
What factors lead to success or failure on the outcomes?  
What is the pathway through which the AHC impact beneficiaries' and communities' health care outcomes (expenditures and utilization)?  
If no favorable impacts were identified, why?

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# Appendix B: AHC Evaluation Screening and Navigation Data Source and Methods

This appendix (referenced in Chapters 2, 3, 6, and 7) describes the data, measures, and analyses conducted using the Accountable Health Communities (AHC) screening, referral, and navigation data. Measures include demographic information (e.g., beneficiary age, gender, race/ethnicity, and education); insurance type (Medicare, Medicaid, or dual eligible); core needs identified via screening; unique beneficiaries screened, navigation eligible, and navigation initiated; navigation outcomes; screening settings; and percentage of clinical delivery sites (CDSs) for each bridge organization engaged in screening beneficiaries.

**Data Source.** We used screening, referral, and navigation data files extracted by NewWave (Centers for Medicare & Medicaid Services [CMS] Enterprise Portal contractor) and generated by Mathematica Policy Research (the AHC implementation contractor) using data submitted by bridge organizations. For this report, we included data related to screenings through December 31, 2021. We allowed for 6-week runout so bridge organizations could make data corrections.

**Respondents.** From the AHC screening, referral, and navigation data files, RTI created three categories of beneficiaries: AHC screened, navigation eligible, and navigation opted in. AHC screened includes all community-dwelling beneficiaries with at least one completed screening. Navigation eligible includes AHC-screened beneficiaries who reported one or more core health-related social needs (HRSNs) and two or more emergency department visits within the 12 months before screening. Navigation initiated includes navigation-eligible beneficiaries who opted in for navigation.

**Measures.** **Exhibit B-1** provides specific information on the measures in this report that rely on the AHC screening, referral, and navigation data. The exhibit includes the AHC screening, referral, and navigation data measures and descriptions.

**Opt-Out Coding Methods.** To explore the reasons navigation-eligible beneficiaries opted out of navigation services through December 2021, we coded the opt-out comments open-text field (n=14,328). We used a staged process for analysis. One analyst conducted the initial coding for all of the comments and developed 24 categories of codes. Next, a second analyst coded all of the comments using the codes developed by the first analyst. Then a third analyst resolved conflicts in the coding among comments. After reviewing the 24 categories, we collapsed them into three main categories: beneficiary opted out (e.g., not interested in assistance), beneficiary was already receiving help, and beneficiary could not be reached/contacted.

**Analyses.** All analyses using the AHC screening, referral, and navigation data were descriptive, primarily reporting numbers and percentages. **Exhibit B-2** shows descriptive results by payer type; **Exhibits B-3** through **B-5** show descriptive results by beneficiary age, race/ethnicity, and education broken out by payer type.

## Exhibit B-1. Measures Using AHC Screening, Referral, and Navigation Data

Measure	Description
Beneficiary age <sup>1</sup>	Beneficiary age at screening
Beneficiary insurance type <sup>1</sup>	Beneficiary insurance type (Medicare, Medicaid, or dual eligible)
Beneficiary race/ethnicity <sup>1</sup>	Beneficiary race/ethnicity
Beneficiary education	Beneficiary highest education level
Core HRSN—Housing	Beneficiary currently has no steady housing and/or has issues with current housing, such as mold, lead paint or pipes, or lack of heat
Core HRSN—Food	Beneficiary has worried that food would run out before they got money to buy more and/or beneficiary bought food that did not last and they did not have money to get more in the past 12 months
Core HRSN—Transportation	Beneficiary has a lack of reliable transportation for medical appointments, meetings, work, or getting things needed for daily living in the past 12 months
Core HRSN—Utilities	Beneficiary has been threatened by the electric, gas, oil, or water company that services will be shut off or has had services shut off in past 12 months
Core HRSN—Safety	Beneficiary has been physically hurt, insulted, threatened with harm, and/or screamed or cursed at by someone, which can include family and friends
CDS engagement	Percentage of CDSs by bridge organizations that have screened at least one beneficiary
AHC screened	Unique beneficiaries with at least one completed screening
Navigation eligible	Unique beneficiaries eligible for the AHC Model (i.e., one or more core HRSNs and two or more emergency department visits in the 12 months before their screening)
Navigation opted in	Unique beneficiaries with a navigation case initiated
Beneficiary opt-in/opt-out flag	Whether beneficiary opted in or out of navigation when initially offered by the navigator
Beneficiary acceptance rate	Percentage of navigation-eligible beneficiaries who opt in for navigation services
Navigation case closed	Unique beneficiaries who opted in and received up to 12 months of navigation services
Connected to community service provider (CSP) for at least one HRSN	Percentage of beneficiaries with a closed navigation case who reported to the navigator that they had contact with a CSP for at least one of their HRSNs
At least one HRSN resolved	Percentage of beneficiaries with a closed navigation case who reported to the navigator that at least one of their HRSNs was resolved
No HRSNs connected to CSP or resolved	Percentage of beneficiaries with a closed navigation case who did not report to the navigator that they had contact with a CSP for at least one of their HRSNs or that at least one of their HRSNs was resolved

(continued)

**Exhibit B-1. Measures Using AHC Screening, Referral, and Navigation Data (continued)**

Measure	Description
Declined further assistance	Percentage of beneficiaries with a closed navigation case who initially opted in for navigation services (based on navigation opt-out flag of "N") but subsequently declined navigation for each of their HRSNs when later contacted by the navigator
CSP unavailable	Percentage of beneficiaries with a closed navigation case who opted in for navigation services but CSPs were unavailable or unable to help address any of their HRSNs
Unable to reach beneficiary	Percentage of beneficiaries with a closed navigation case who opted in for navigation services but could not be reached on three consecutive attempts
Status under review	Percentage of beneficiaries with a closed navigation case whose navigation case is neither resolved nor unresolved because navigators did not appropriately update the information in the data system when the navigation case closed
Navigation opt-out reasons	Percentage of navigation eligible beneficiaries who opted out of navigation services who opted out for one of the following reasons: beneficiary opted out (e.g., not interested in assistance), beneficiary was already receiving help, and beneficiary could not be reached/contacted

<sup>1</sup> Supplement to demographic data available in the Medicare and Medicaid enrollment files.

## Exhibit B-2. Screening, Navigation, and Outcomes by Payer Type

Model Step	Medicare		Medicaid		Dual Eligible	
	Number	Percent	Number	Percent	Number	Percent
<b>Screening</b>						
Completed Screening	300,957	30	612,173	60	106,976	10
Eligible Screening	23,967	13	132,397	71	29,411	16
Eligible Screening among Assistance Track Intervention Group and Alignment Track	20,514	13	116,054	72	25,321	16
<b>Navigation</b>						
Opted In <sup>1</sup>	15,026	12	89,232	72	19,698	16
Opted Out	3,806	15	18,274	70	3,843	15
Neither Opted In nor Opted Out	1,486	13	7,939	72	1,598	14
<b>Outcomes Among Beneficiaries with a Closed Navigation Case</b>						
Navigation Case Closed <sup>2</sup>	10,868	13	60,364	70	15,142	18
At Least 1 HRSN Resolved	4,241	14	21,118	68	5,922	19
At least 1 HRSN Connected to CSP <sup>3</sup>	1,021	11	6,619	73	1,482	16
Not Connected to CSP or Resolved for Any HRSNs	5,606	12	32,627	71	7,738	17
Opted Out of All HRSNs	639	14	3,070	69	730	16
Attempt Failed for All HRSNs	3,078	12	18,082	71	4,138	16
CSP Unable or Unavailable to Help for All HRSNs	567	15	2,506	67	660	18
In Progress/Unknown for All HRSNs	1,192	11	7,904	71	1,971	18
Combination of Resolved, Connected, Opted Out, Attempt Failed, CSP Unable or Unavailable, and/or In Progress/Unknown for Any HRSNs	130	9	1,065	74	239	17

<sup>1</sup> Care New England and Delta Health Alliance were excluded from opted in and navigation outcomes due to voluntary termination from the model before 12 months; <sup>2</sup> Number of navigated needs > 0; <sup>3</sup> No needs resolved.

**Exhibit B-3. Screening, Navigation, and Outcomes by Age and Payer Type**

Model Step	Medicare/Dual						Medicaid					
	0–17		18–64		65+		0–17		18–64		65+	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>Screening</b>												
Completed Screening	278	0	89,331	22	314,795	78	200,590	33	394,117	65	15,806	3
Eligible Screening	27	0	26,085	50	26,180	50	26,319	20	103,110	78	2,599	2
Eligible Screening among Assistance Track Intervention Group and Alignment Track	22	0	22,461	50	22,400	50	21,782	19	91,566	79	2,361	2
<b>Navigation</b>												
Opted In <sup>1</sup>	16	0	17,222	51	16,702	49	16,299	18	70,850	80	1,827	2
Opted Out	3	0	3,428	45	4,113	55	3,974	22	13,854	76	372	2
Neither Opted In nor Opted Out	1	0	1,566	52	1,457	48	1,472	19	6,308	80	144	2
<b>Outcomes Among Beneficiaries with a Closed Navigation Case</b>												
Navigation Case Closed <sup>2</sup>	14	0	13,210	52	12,206	48	11,342	19	47,596	79	1,210	2
At Least 1 HRSN Resolved	6	0	5,068	51	4,880	49	4,407	21	16,214	77	412	2
At least 1 HRSN Connected to CSP <sup>3</sup>	0	0	1,290	53	1,153	47	1,530	23	4,924	75	134	2
Not Connected to CSP or Resolved for Any HRSNs	8	0	6,852	53	6,173	47	5,405	17	26,458	81	664	2
Opted Out of All HRSNs	0	0	636	47	709	53	559	18	2,433	80	61	2
Attempt Failed for All HRSNs	3	0	3,780	54	3,269	46	3,024	17	14,675	81	330	2
CSP Unable or Unavailable to Help for All HRSNs	2	0	587	49	618	51	452	18	1,988	79	65	3
In Progress/Unknown for All HRSNs	3	0	1,626	53	1,440	47	1,210	15	6,485	82	189	2
Combination of Resolved, Connected, Opted Out, Attempt Failed, CSP Unable or Unavailable, and/or In Progress/Unknown for Any HRSNs	0	0	223	62	137	38	160	15	877	83	19	2

<sup>1</sup> Care New England and Delta Health Alliance were excluded from opted in and navigation outcomes due to voluntary termination from the model before 12 months; <sup>2</sup> Number of navigated needs > 0; <sup>3</sup> No needs resolved.

**Exhibit B-4a. Screening, Navigation, and Outcomes by Race/Ethnicity and Payer Type (Medicare/Dual)**

Model Step	White		Black/African American		Hispanic or Latino		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>Screening</b>								
Completed Screening	316,362	80	40,953	10	14,284	4	21,705	6
Eligible Screening	31,872	62	13,124	26	3,730	7	2,665	5
Eligible Screening among Assistance Track Intervention Group and Alignment Track	27,022	61	11,389	26	3,248	7	2,444	6
<b>Navigation</b>								
Opted In <sup>1</sup>	19,675	59	9,257	28	2,475	7	1,943	6
Opted Out	4,998	68	1,494	20	570	8	341	5
Neither Opted In nor Opted Out	2,113	71	544	18	173	6	147	5
<b>Outcomes Among Beneficiaries with a Closed Navigation Case</b>								
Navigation Case Closed <sup>2</sup>	14,636	59	7,145	29	1,903	8	1,332	5
At Least 1 HRSN Resolved	5,977	61	2,470	25	780	8	567	6
At least 1 HRSN Connected to CSP <sup>3</sup>	1,283	54	702	29	208	9	202	8
Not Connected to CSP or Resolved for Any HRSNs	7,376	58	3,973	31	915	7	563	4
Opted Out of All HRSNs	815	62	303	23	71	5	123	9
Attempt Failed for All HRSNs	3,951	57	2,179	31	530	8	280	4
CSP Unable or Unavailable to Help for All HRSNs	633	53	449	38	76	6	38	3
In Progress/Unknown for All HRSNs	1,794	59	927	31	199	7	108	4
Combination of Resolved, Connected, Opted Out, Attempt Failed, CSP Unable or Unavailable, and/or In Progress/Unknown for Any HRSNs	183	52	115	33	39	11	14	4

<sup>1</sup> Care New England and Delta Health Alliance were excluded from opted in and navigation outcomes due to voluntary termination from the model before 12 months; <sup>2</sup> Number of navigated needs > 0; <sup>3</sup> No needs resolved.

**Exhibit B-4b. Screening, Navigation, and Outcomes by Race/Ethnicity and Payer Type (Medicaid)**

Model Step	White		Black/African American		Hispanic or Latino		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>Screening</b>								
Completed Screening	221,041	45	109,107	22	118,424	24	41,031	8
Eligible Screening	43,990	40	35,137	32	24,910	23	6,353	6
Eligible Screening among Assistance Track Intervention Group and Alignment Track	37,826	39	31,109	32	21,756	23	5,965	6
<b>Navigation</b>								
Opted In <sup>1</sup>	28,258	38	25,263	34	16,725	22	4,462	6
Opted Out	6,141	41	4,113	28	3,757	25	906	6
Neither Opted In nor Opted Out	3,293	49	1,614	24	1,176	18	571	9
<b>Outcomes Among Beneficiaries with a Closed Navigation Case</b>								
Navigation Case Closed <sup>2</sup>	19,441	38	17,250	34	11,101	22	3,045	6
At Least 1 HRSN Resolved	6,908	39	5,620	32	4,130	23	1,148	6
At least 1 HRSN Connected to CSP <sup>3</sup>	1,665	31	1,946	36	1,369	26	368	7
Not Connected to CSP or Resolved for Any HRSNs	10,868	39	9,684	35	5,602	20	1,529	6
Opted Out of All HRSNs	903	39	768	33	628	27	243	11
Attempt Failed for All HRSNs	6,173	42	5,506	38	2,993	20	703	5
CSP Unable or Unavailable to Help for All HRSNs	701	34	916	45	423	21	117	6
In Progress/Unknown for All HRSNs	2,832	45	2,170	34	1,340	21	404	6
Combination of Resolved, Connected, Opted Out, Attempt Failed, CSP Unable or Unavailable, and/or In Progress/Unknown for Any HRSNs	259	32	324	40	218	27	62	8

<sup>1</sup> Care New England and Delta Health Alliance were excluded from opted in and navigation outcomes due to voluntary termination from the model before 12 months; <sup>2</sup> Number of navigated needs > 0; <sup>3</sup> No needs resolved.

**Exhibit B-5. Screening, Navigation, and Outcomes by Education and Payer Type**

Model Step	Medicare/Dual				Medicaid			
	Less Than High School Degree		High School Degree or Higher		Less Than High School Degree		High School Degree or Higher	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>Screening</b>								
Completed Screening	44,942	15	255,095	85	137,136	32	296,601	68
Eligible Screening	8,991	25	27,227	75	28,594	31	63,419	69
Eligible Screening among Assistance Track Intervention Group and Alignment Track	7,701	25	23,380	75	24,768	31	55,521	69
<b>Navigation</b>								
Opted In <sup>1</sup>	5,828	25	17,101	75	18,962	31	41,562	69
Opted Out	1,217	22	4,214	78	3,825	29	9,290	71
Neither Opted In nor Opted Out	540	23	1,831	77	1,761	29	4,333	71
<b>Outcomes Among Beneficiaries with a Closed Navigation Case</b>								
Navigation Case Closed <sup>2</sup>	4,568	26	12,886	74	13,388	32	28,934	68
At Least 1 HRSN Resolved	1,807	26	5,108	74	4,793	32	9,980	68
At least 1 HRSN Connected to CSP <sup>3</sup>	433	26	1,201	74	1,577	34	3,108	66
Not Connected to CSP or Resolved for Any HRSNs	2,328	26	6,577	74	7,018	31	15,846	69
Opted Out of All HRSNs	227	23	753	77	728	32	1,556	68
Attempt Failed for All HRSNs	1,201	27	3,293	73	3,673	30	8,468	70
CSP Unable or Unavailable to Help for All HRSNs	201	26	572	74	564	32	1,199	68
In Progress/Unknown for All HRSNs	633	26	1,793	74	1,822	31	4,134	69
Combination of Resolved, Connected, Opted Out, Attempt Failed, CSP Unable or Unavailable, and/or In Progress/Unknown for Any HRSNs	66	28	166	72	231	32	489	68

<sup>1</sup> Care New England and Delta Health Alliance were excluded from opted in and navigation outcomes due to voluntary termination from the model before 12 months; <sup>2</sup> Number of navigated needs > 0; <sup>3</sup> No needs resolved.

**Exhibit B-6. Screening, Navigation, and Outcomes by Age for Medicare and Dual-Eligible Populations**

Model Step	Medicare						Dual Eligible					
	0–17		18–64		65+		0–17		18–64		65+	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>Screening</b>												
Completed Screening	214	0	36,991	12	263,282	88	64	0	52,340	50	51,513	50
Eligible Screening	12	0	8,353	35	15,498	65	15	0	17,732	62	10,682	38
<b>Navigation</b>												
Opted In <sup>1</sup>	9	0	5,415	36	9,533	64	7	0	11,807	62	7,169	38
<b>Outcomes Among Beneficiaries with a Closed Navigation Case</b>												
Navigation Case Closed <sup>2</sup>	8	0	3,989	37	6,819	63	6	0	9,221	63	5,387	37
At Least 1 HRSN Resolved	3	0	1,434	34	2,793	66	3	0	3,634	63	2,087	36
At least 1 HRSN Connected to CSP <sup>3</sup>	0	0	389	38	624	62	0	0	901	63	529	37
Not Connected to CSP or Resolved for Any HRSNs	5	0	2,166	39	3,402	61	3	0	4,686	63	2,771	37
All HRSNs Resolved	3	0	1,024	31	2,255	69	3	0	2,405	62	1,487	38
All HRSNs Connected to CSP	0	0	309	36	538	64	0	0	667	62	410	38

<sup>1</sup> Care New England and Delta Health Alliance were excluded from opted in and navigation outcomes due to voluntary termination from the model before 12 months; <sup>2</sup> Number of navigated needs > 0; <sup>3</sup> No needs resolved.

**Exhibit B-7a. Screening, Navigation, and Outcomes by Race/Ethnicity for Medicare-Only Populations**

Model Step	White		Black/African American		Hispanic or Latino		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>Screening</b>								
Completed Screening	252,363	87	19,560	7	5,515	2	14,298	5
Eligible Screening	16,105	69	4,744	20	1,333	6	1,271	5
<b>Navigation</b>								
Opted In <sup>1</sup>	9,542	65	3,334	23	889	6	955	6
<b>Outcomes Among Beneficiaries with a Closed Navigation Case</b>								
Navigation Case Closed <sup>2</sup>	6,927	65	2,446	23	660	6	604	6
At Least 1 HRSN Resolved	2,837	68	812	20	260	6	252	6
At least 1 HRSN Connected to CSP <sup>3</sup>	594	60	242	24	67	7	89	9
Not Connected to CSP or Resolved for Any HRSNs	3,496	64	1,392	25	333	6	263	5
All HRSNs Resolved	2,287	71	562	17	190	6	194	6
All HRSNs Connected to CSP	509	61	192	23	56	7	73	9

<sup>1</sup> Care New England and Delta Health Alliance were excluded from opted in and navigation outcomes due to voluntary termination from the model before 12 months; <sup>2</sup> Number of navigated needs > 0; <sup>3</sup> No needs resolved.

**Exhibit B-7b. Screening, Navigation, and Outcomes by Race/Ethnicity for Dual-Eligible Populations**

Model Step	White		Black/African American		Hispanic or Latino		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>Screening</b>								
Completed Screening	63,999	63	21,393	21	8,769	9	7,407	7
Eligible Screening	15,767	56	8,380	30	2,397	9	1,394	5
<b>Navigation</b>								
Opted In <sup>1</sup>	10,151	54	5,923	32	1,586	9	988	5
<b>Outcomes Among Beneficiaries with a Closed Navigation Case</b>								
Navigation Case Closed <sup>2</sup>	7,709	54	4,699	33	1,243	9	728	5
At Least 1 HRSN Resolved	3,140	56	1,658	29	520	9	315	6
At least 1 HRSN Connected to CSP <sup>3</sup>	689	49	460	33	141	10	113	8
Not Connected to CSP or Resolved for Any HRSNs	3,880	53	2,581	35	582	8	300	4
All HRSNs Resolved	2,200	57	1,089	28	337	9	212	6
All HRSNs Connected to CSP	547	52	334	32	90	8	88	8

<sup>1</sup> Care New England and Delta Health Alliance were excluded from opted in and navigation outcomes due to voluntary termination from the model before 12 months; <sup>2</sup> Number of navigated needs > 0; <sup>3</sup> No needs resolved.

**Exhibit B-8. Screening, Navigation, and Outcomes by Education for Medicare and Dual-Eligible Populations**

Model Step	Medicare				Dual Eligible			
	Less Than High School Degree		High School Degree or Higher		Less Than High School Degree		High School Degree or Higher	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>Screening</b>								
Completed Screening	22,952	10	202,120	90	21,990	29	52,975	71
Eligible Screening	3,260	20	13,015	80	5,731	29	14,212	71
<b>Navigation</b>								
Opted In <sup>1</sup>	2,057	21	7,717	79	3,771	29	9,384	71
<b>Outcomes Among Beneficiaries with a Closed Navigation Case</b>								
Navigation Case Closed <sup>2</sup>	1,604	22	5,639	78	2,964	29	7,247	71
At Least 1 HRSN Resolved	630	22	2,286	78	1,177	29	2,822	71
At least 1 HRSN Connected to CSP <sup>3</sup>	150	24	481	76	283	28	720	72
Not Connected to CSP or Resolved for Any HRSNs	824	22	2,872	78	1,504	29	3,705	71
All HRSNs Resolved	477	21	1,815	79	801	30	1,901	70
All HRSNs Connected to CSP	116	22	400	78	198	26	551	74

<sup>1</sup> Care New England and Delta Health Alliance were excluded from opted in and navigation outcomes due to voluntary termination from the model before 12 months; <sup>2</sup> Number of navigated needs > 0; <sup>3</sup> No needs resolved.

# Appendix C: Bridge and CDS Survey Methods and Responses

This appendix provides the results for the organizational climate surveys for the bridge organizations and CDSs. We provide a brief overview of the data collection and analysis methods for each survey along with the frequency and percentage for each question and the mean for numerical responses.

## Bridge Survey Data Collection and Analysis Methods

The Survey of Bridge Organizations was administered to project leaders and other key stakeholders from all 29 bridge organizations participating in the Accountable Health Communities (AHC) Model as of October 2019. Primary bridge organization contacts were provided by each bridge organization and a subsequent list of key staff identified by Innovation Center Project Officers. One contact per each of the 29 bridges organizations was invited to complete the web-based survey during the period of April through June 2020. A second wave of the CDS survey was administered in May and June 2021 to nonresponding CDSs.

The Survey of Bridge Organizations consisted of 51 items and was designed to collect systematic, quantifiable data about organization type and size; AHC staffing practices; screening, referral, and navigation procedures; and data capture and sharing practices for each bridge organization and its associated clinical delivery sites (CDSs). The survey also included questions related to engagement with community organizations; the goals, activities, leadership, and communication style of each bridge organization's advisory board; and the effect COVID-19 has had on the organization's ability to implement the AHC Model.

We conducted a census of the 29 bridge organizations, and all of them responded (i.e., 100% response rate). For the survey of advisory board members, we received a response rate of 46%. The two waves of the CDS survey yielded an overall CDS survey response rate of 64%. All 29 bridge organizations were represented in the responses from CDSs.

Descriptive analyses were conducted for each survey question. Survey weights were used to account for nonresponse. Frequency tables at the bridge organization level are included below for each survey question.

Note: For the tables in this appendix, a dash in a cell indicates "none."

## Bridge Organization Exhibits

### Exhibit C-1a. Responses for General Background of Bridge Organizations

1. How many of each type of clinical delivery site is part of your AHC Model?	n	Mean	sd
a. Hospital: emergency departments	29	3.9	0.63
b. Hospital: labor and delivery units	29	1.3	0.26
c. Hospital: inpatient psychiatric unit	29	0.6	0.17
d. Primary care provider or practice	29	14.5	3.33
e. Behavioral health service provider	29	1.4	0.37
f. Other	29	3.4	1.82

Definitions: AHC = Accountable Health Communities.

### Exhibit C-1b. Responses for General Background of Bridge Organizations

2. Which of the following describes your organization?	n	%
a. Hospital, health system, or integrated delivery system	14	48.3
b. Outpatient/ambulatory care practice	-	-
c. Public health department	1	3.4
d. Tribal organization	-	-
e. Local government agency	-	-
f. University	3	10.3
g. Healthcare payer	2	6.9
h. Health information technology company	2	6.9
i. Other independent nonprofit	5	17.2
j. Other	2	6.9

### Exhibit C-1c. Responses for General Background of Bridge Organizations

3. Approximately how many beds are in your clinical facilities where screening or navigation for AHC take place? (If more than one facility, provide an estimated combined total).	n	Mean	sd
Valid response	13	1,021.4	238.39
Legitimate skip	15	51.7	-
Missing/No response	1	3.4	-

Definitions: AHC = Accountable Health Communities.

Other Notes: Dashes indicate standard deviation not calculated.

**Exhibit C-1d. Responses for General Background of Bridge Organizations**

4. Approximately what percentage of your patients or clients are:	0%		1–24%		25–49%		50–74%		75–100%		Legitimate Skip		Missing/ No Response	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
a. Medicare beneficiaries	4	13.8	2	6.9	4	13.8	5	17.2	-	-	14	48.3	-	-
Medicare Advantage beneficiaries	1	3.4	3	10.3	6	20.7	-	-	-	-	18	62.1	1	3.4
Medicare fee for service beneficiaries	1	3.4	4	13.8	4	13.8	1	3.4	-	-	18	62.1	1	3.4
b. Medicaid beneficiaries	4	13.8	3	10.3	3	10.3	3	10.3	2	6.9	14	48.3	-	-
Medicaid Managed Care beneficiaries	2	6.9	3	10.3	3	10.3	1	3.4	1	3.4	18	62.1	1	3.4
c. Covered by private insurance (PPO or HMO)	5	17.2	4	13.8	3	10.3	3	10.3	-	-	14	48.3	-	-
d. Uninsured	5	17.2	10	34.5	-	-	-	-	-	-	14	48.3	-	-

Definitions: HMO = health maintenance organization; PPO = preferred provider organization.

**Exhibit C-1e. Responses for General Background of Bridge Organizations**

<b>5. Approximately how many total patients do you serve annually?</b>	<b>n</b>	<b>%</b>
a. Fewer than 20,000	-	-
b. 20,000–100,000	4	13.8
c. 100,001–250,000	3	10.3
d. 250,001–400,000	2	6.9
e. 400,001–650,000	2	6.9
f. > 650,000	3	10.3
Legitimate skip	14	48.3
Missing/No response	1	3.4

**Exhibit C-2a. Responses for Staffing of Bridge Organizations**

<b>6. How many staff does your bridge Organization employ who are paid, in whole or in part, with AHC funding?</b>	<b>n</b>	<b>Mean</b>	<b>sd</b>
-	29	10.9	1.43

Definitions: AHC = Accountable Health Communities.

**Exhibit C-2b. Responses for Staffing of Bridge Organizations**

<b>7. How many people in your community conduct screenings for health-related social needs (HRSNs) for the AHC program? (If 0, skip 8 and 9)</b>	<b>n</b>	<b>Mean</b>	<b>sd</b>
-	29	85.4	33.16

Definitions: AHC = Accountable Health Communities.

Other Notes: Multiple answers allowed.

### Exhibit C-2c. Responses for Staffing of Bridge Organizations

8. What types of staff conduct screenings at your organization? <sup>1</sup>	n	%
a. Paid staff whose primary role is conducting AHC screenings; they may have additional duties	21	72.4
b. Unpaid volunteer staff (e.g., general volunteers, students, unpaid interns) whose primary role is conducting AHC screenings; they may have additional duties	14	48.3
c. Front desk or administrative staff	17	58.6
d. Medical care providers who are not paid using AHC funds.	11	37.9
e. Social assistance providers (e.g., social workers, community health workers) who are not paid using AHC funds	14	48.3
f. Other	5	17.2

<sup>1</sup> Multiple answers allowed.

Definitions: AHC = Accountable Health Communities.

### Exhibit C-2d. Responses for Staffing of Bridge Organizations

9. What percentage of the people who do screenings (“screeners”) are in unpaid roles (e.g., students, interns, volunteers, etc.)?	n	%
a. None, they are all paid positions	9	31.0
b. 1–24%	8	27.6
c. 25–49%	2	6.9
d. 50–75%	2	6.9
e. 76–100%	4	13.8
Legitimate skip	4	13.8

Other Notes: Multiple answers allowed.

### Exhibit C-2e. Responses for Staffing of Bridge Organizations

10. How many people in your community are patient navigators for the AHC program? (If 0, skip 11 and 12)	n	Mean	sd
-	29	16.8	5.37

Definitions: AHC = Accountable Health Communities.

Other Notes: Multiple answers allowed.

### Exhibit C-2f. Responses for Staffing of Bridge Organizations

11. What types of staff provide navigation for HRSNs within your AHC community? <sup>1</sup>	n	%
a. Paid staff whose primary role is AHC patient navigation	23	79.3
b. Unpaid volunteer staff (e.g., general volunteers, students, unpaid interns) whose primary role is AHC patient navigation	4	13.8
c. Front desk or administrative staff	1	3.4
d. Medical care providers who are not paid using AHC funds.	3	10.3
e. Social assistance providers (e.g., social workers, community health workers) who are not paid using AHC funds	9	31.0
f. Other	2	6.9

<sup>1</sup> Multiple answers allowed.

Definitions: AHC = Accountable Health Communities; HRSN = health-related social need.

### Exhibit C-2g. Responses for Staffing of Bridge Organizations

12. What percentage of the people who do patient navigation are in unpaid roles (e.g., students, interns, volunteers, etc.)?	n	%
a. None, they are all paid positions	17	58.6
b. 1–24%	4	13.8
c. 25–49%	1	3.4
d. 50–75%	2	6.9
e. 76–100%	2	6.9
Legitimate skip	3	10.3

Other Notes: Multiple answers allowed.

**Exhibit C-2h. Responses for Staffing of Bridge Organizations**

13. Have you had any staff turnover (i.e., voluntarily or involuntarily leave the organization or the project) in your community in any of these AHC roles?	Yes		No		We Do Not Have People In This Role	
	n	%	n	%	n	%
a. Key AHC roles (e.g., leadership, project management)	19	65.5	10	34.5	-	-
b. Screeners	26	89.7	1	3.4	2	6.9
c. Patient navigators	26	89.7	3	10.3	-	-

Definitions: AHC = Accountable Health Communities.

Other Notes: Multiple answers allowed.

**Exhibit C-2i. Responses for Staffing of Bridge Organizations**

14. How challenging have the following factors been to your organization’s ability to fully staff the AHC project?	Not at All Challenging		Somewhat Challenging		Challenging		Extremely Challenging		Missing/ No Response	
	n	%	n	%	n	%	n	%	n	%
a. Not enough applicants	17	58.6	9	31.0	1	3.4	1	3.4	1	3.4
b. Applicants are not qualified	13	44.8	12	41.4	3	10.3	-	-	1	3.4
c. Turnover is higher than expected	8	27.6	11	37.9	7	24.1	2	6.9	1	3.4

Definitions: AHC = Accountable Health Communities.

Other Notes: Multiple answers allowed.

**Exhibit C-3a. Responses for Bridge Organizations Screening—Preparation and Process**

15. What training do screeners receive? <sup>1</sup>	Training Delivery Mode				Online/Webinar		Other	
	No Training on This Content		In Person		n	%	n	%
	n	%	n	%				
a. Screeners do not receive any training	-	-	-	-	-	-	-	-
b. Centers for Medicaid & Medicare Services (CMS) webinars only	13	44.8	-	-	15	51.7	-	-
c. Administering the screening tool	-	-	28	96.6	15	51.7	1	3.4
d. Approaching/engaging patients	-	-	28	96.6	14	48.3	3	10.3
e. Cultural sensitivity training	3	10.3	19	65.5	15	51.7	1	3.4
f. Refresher/booster training based on individual performance and/or quality assurance measures	3	10.3	25	86.2	14	48.3	1	3.4
g. Other content	11	37.9	13	44.8	6	20.7	1	3.4

<sup>1</sup> Multiple answers allowed.

Definitions: CMS = Centers for Medicaid & Medicare Services.

**Exhibit C-3b. Responses for Bridge Organizations Screening—Preparation and Process**

16. What are the primary screening data collection methods used by screeners to collect screening data from beneficiaries? <sup>1</sup>	n	%
a. Electronic tablet	18	62.1
b. Laptop computer	11	37.9
c. Paper forms	23	79.3
d. Our screenings are self-administered by the beneficiaries	12	41.4
e. Other	5	17.2

<sup>1</sup> Multiple answers allowed.

**Exhibit C-3c. Responses for Bridge Organizations Screening—Preparation and Process**

17. When are screenings typically conducted? <sup>1</sup>	n	%
a. Before the clinical visit	19	65.5
b. During the clinical visit	26	89.7
c. After the clinical visit	20	69.0
d. Other	-	-

<sup>1</sup> Multiple answers allowed.

**Exhibit C-4a. Responses for Bridge Organization Screening Data—Entering and Sharing Practices**

18. How does your organization enter patient screening data?	n	%
a. Using CMS' AHC data system	14	48.3
b. Using an alternative data system	15	51.7

Definitions: AHC = Accountable Health Communities; CMS = Centers for Medicare & Medicaid Services.  
Other Notes: Multiple answers allowed.

**Exhibit C-4b. Responses for Bridge Organization Screening Data—Entering and Sharing Practices**

19. With whom do you share AHC screening data? <sup>1</sup>	n	%
a. Clinical delivery sites (CDSs)	23	79.3
b. Community service provider (CSPs)	10	34.5
c. The state Medicaid agency	11	37.9
d. The AHC advisory board	16	55.2
e. Clinical providers	17	58.6
f. We do not share screening data with other organizations.	5	17.2

<sup>1</sup> Multiple answers allowed.

Definitions: AHC = Accountable Health Communities; CDS = clinical delivery site; CSP = community service provider.

**Exhibit C-4c. Responses for Bridge Organization Screening Data—Entering and Sharing Practices**

20. How do you share screening data with this partner? <sup>1</sup>	Electronic Health Records		Health information Exchange		Fax		Paper		Phone		Other	
	n	%	n	%	n	%	n	%	n	%	n	%
a. Clinical delivery sites (CDSs)	6	20.7	1	3.4	-	-	3	10.3	2	6.9	19	65.5
b. Community service provider (CSPs)	-	-	-	-	-	-	2	6.9	2	6.9	7	24.1
c. The state Medicaid agency	-	-	2	6.9	-	-	1	3.4	-	-	9	31.0
d. The AHC advisory board	-	-	1	3.4	-	-	3	10.3	1	3.4	14	48.3
e. Clinical providers	4	13.8	2	6.9	-	-	2	6.9	1	3.4	12	41.4

<sup>1</sup> Multiple answers allowed.

Definitions: AHC = Accountable Health Communities; CDS = clinical delivery site; CSP = community service provider.

**Exhibit C-5. Responses for Transitioning from Screening to Navigation for Bridge Organizations**

21. How challenging do the following factors make it to reach out to beneficiaries within 5 business days after they have screened eligible for navigation?	Not at All Challenging		Somewhat Challenging		Challenging		Extremely Challenging		Missing/ No Response	
	n	%	n	%	n	%	n	%	n	%
a. Insufficient staffing	12	41.4	10	34.5	3	10.3	4	13.8	-	-
b. Difficulty reaching beneficiary	-	-	4	13.8	12	41.4	13	44.8	-	-
c. Accessing screening data	24	82.8	3	10.3	1	3.4	1	3.4	-	-
d. Other	-	-	1	3.4	1	3.4	2	6.9	25	86.2

**Exhibit C-6. Responses for Bridge Organization Navigation Process**

22. How often do navigation encounters happen in the following ways?	Never		Rarely		Sometimes		Often		Always		Missing/ No Response	
	n	%	n	%	n	%	n	%	n	%	n	%
a. During face-to-face/in-person meetings	4	13.8	4	13.8	14	48.3	6	20.7	1	3.4	-	-
b. Using telephone calls	-	-	-	-	4	13.8	14	48.3	11	37.9	-	-
c. Using text messages	11	37.9	3	10.3	11	37.9	4	13.8	-	-	-	-
d. Other	-	-	-	-	4	13.8	-	-	-	-	25	86.2

**Exhibit C-7a. Weighted Responses for Bridge Organization Navigation Data—Capture and Sharing Practices**

23. How often does your organization document patient navigation events or contacts with beneficiaries using the following systems?	Never		Rarely		Sometimes		Often		Always	
	n	%	n	%	n	%	n	%	n	%
CMMI or non-CMMI AHC Data System	2	6.9	-	-	2	6.9	9	31.0	16	55.2
Electronic health records	17	58.6	3	10.3	2	6.9	4	13.8	3	10.3
Alternative system (e.g., Excel spreadsheet)	10	34.5	1	3.4	4	13.8	5	17.2	9	31.0

Definitions: AHC = Accountable Health Communities; CMMI = Center for Medicare & Medicaid Innovation.  
 Other Notes: Multiple answers allowed.

**Exhibit C-7b. Responses for Bridge Organization Navigation Data—Capture and Sharing Practices**

<b>24. Does your organization document which community service provider each beneficiary is referred to and whether the beneficiary connected with the community service provider?<sup>1</sup></b>	<b>n</b>	<b>%</b>
a. Yes, we document this information in CMMI or non-CMMI AHC Data System	21	72.4
b. Yes, we document this information in electronic health records	5	17.2
c. Yes, we document this information in a different system/format (e.g., Excel spreadsheet)	8	27.6
d. No, we do not document this information	5	17.2

<sup>1</sup> Multiple answers allowed.

Definitions: AHC = Accountable Health Communities; CMMI = Center for Medicare & Medicaid Innovation.

**Exhibit C-7c. Responses for Bridge Organization Navigation Data—Capture and Sharing Practices**

<b>25. With whom do you share AHC navigation data?<sup>1</sup></b>	<b>n</b>	<b>%</b>
a. Clinical delivery sites (CDSs)	21	72.4
b. Community service provider (CSPs)	11	37.9
c. The state Medicaid agency	6	20.7
d. The AHC advisory board	14	48.3
e. Clinical providers	11	37.9
f. We do not share navigation data with other organizations.	5	17.2

<sup>1</sup> Multiple answers allowed.

Definitions: AHC = Accountable Health Communities; CDS = clinical delivery site; CSP = community service provider.

**Exhibit C-7d. Responses for Bridge Organization Navigation Data—Capture and Sharing Practices**

26. How do you share navigation data with this partner? <sup>1</sup>	Electronic Health Records		Health Information Exchange		Fax		Paper		Phone		Other	
	n	%	n	%	n	%	n	%	n	%	n	%
a. Clinical delivery sites (CDSs)	6	20.7	-	-	-	-	3	10.3	1	3.4	18	62.1
b. Community service provider (CSPs)	-	-	-	-	-	-	2	6.9	1	3.4	10	34.5
c. The state Medicaid agency	-	-	-	-	-	-	1	3.4	-	-	5	17.2
d. The AHC advisory board	-	-	-	-	-	-	4	13.8	1	3.4	12	41.4
e. Clinical providers	2	6.9	-	-	-	-	2	6.9	-	-	9	31.0

<sup>1</sup> Multiple answers allowed.

Definitions: AHC = Accountable Health Communities; CDS = clinical delivery site; CSP = community service provider.

**Exhibit C-8. Responses for Bridge Organization Sustainability**

<b>27. On a scale of 1–10, how likely is your organization to continue AHC work after the funding period?</b>	<b>n</b>	<b>%</b>
1 Very Unlikely	-	-
2	2	6.9
3	-	-
4	-	-
5 Somewhat Likely	4	13.8
6	1	3.4
7	3	10.3
8	8	27.6
9	4	13.8
10 Very Likely	7	24.1

Definitions: AHC = Accountable Health Communities.

**Exhibit C-9a. Responses for Bridge Organization Alignment**

<b>28. What kinds of quality improvement activities does your organization use to monitor the effectiveness of the AHC Model's implementation?<sup>1</sup></b>	<b>n</b>	<b>%</b>
a. Review of our bridge's internal AHC-related quality metrics at regular frequencies	23	79.3
b. Continuous quality improvement cycles (e.g., Plan-Do-Study-Act [PDSA] cycles)	24	82.8
c. Assigned staff/roles to monitor AHC quality improvement (QI) plan	22	75.9
d. Quality committee or subgroup meetings	13	44.8
e. None of the above	-	-
f. Other	3	10.3

<sup>1</sup> Multiple answers allowed.

Definitions: AHC = Accountable Health Communities.

### Exhibit C-9b. Responses for Bridge Organization Alignment

29. Does your organization participate in an advisory board or council for the AHC Model?	n	%
a. We have a formal advisory board.	18	62.1
b. We don't have a formal advisory board, but we do have an informal board, collaborative, or council.	7	24.1
c. We do not have an advisory board, collaborative, or council. (End of survey)	4	13.8

Definitions: AHC = Accountable Health Communities.

Other Notes: Multiple answers allowed.

### Exhibit C-9c. Responses for Bridge Organization Alignment

30. How many months have you been serving on the AHC Model advisory board, collaborative, or council?	n	%
a. Less than 3 months	1	3.4
b. More than 3 months, less than 6 months	1	3.4
c. 6–12 months	2	6.9
d. Longer than 12 months	15	51.7
e. I am not currently on the advisory board (End of survey)	5	17.2
Legitimate skip	4	13.8
Missing/No response	1	3.4

Definitions: AHC = Accountable Health Communities.

Other Notes: Multiple answers allowed.

### Exhibit C-9d. Responses for Bridge Organization Alignment

31. Approximately how often does the advisory board, collaborative, or council meet?	n	%
a. 1–2 times per week	-	-
b. 1–2 times per month	5	17.2
c. 1–2 times every couple of months	12	41.4
d. 1–2 times per year	3	10.3
Legitimate skip	9	31.0

Other Notes: Multiple answers allowed.

**Exhibit C-9e. Responses for Bridge Organization Alignment**

Please rate the extent to which you agree that each of the following statements describes your AHC Model’s advisory board, informal board, collaborative, or council (“the board”).	Completely Agree		Mostly Agree		Somewhat Agree		Slightly Agree		Do Not Agree at All		Not Applicable/ Don’t Know		Legitimate Skip		Missing/ No Response	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
<b>Goals</b>																
32. Our board has a written description of our shared goals. Shared goals can be defined as a description of what is to be accomplished over a defined timeframe and a clear mission statement.	10	34.5	4	13.8	2	6.9	3	10.3	-	-	1	3.4	9	31.0	-	-
33. Our shared goals were developed by a group with diverse perspectives.	7	24.1	6	20.7	3	10.3	2	6.9	1	3.4	1	3.4	9	31.0	-	-
<b>Mutually Reinforcing Activities</b>																
34. We have an action plan (e.g., quality improvement development plan) that specifies the activities that each board members’ organization will do.	2	6.9	4	13.8	7	24.1	2	6.9	2	6.9	2	6.9	9	31.0	1	3.4
35. Board members understand the roles of our working groups and how these roles support our shared goals.	6	20.7	4	13.8	4	13.8	1	3.4	2	6.9	2	6.9	9	31.0	1	3.4
36. Board members’ organizational activities change as needed to better align with the action plan.	4	13.8	4	13.8	5	17.2	2	6.9	1	3.4	3	10.3	9	31.0	1	3.4

(continued)

**Exhibit C-9e. Responses for Bridge Organization Alignment (continued)**

Please rate the extent to which you agree that each of the following statements describes your AHC Model’s advisory board, informal board, collaborative, or council (“the board”).	Completely Agree		Mostly Agree		Somewhat Agree		Slightly Agree		Do Not Agree at All		Not Applicable/ Don’t Know		Legitimate Skip		Missing/ No Response	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
<b>Leadership</b>																
37. Board leadership creates an environment where things can be accomplished.	7	24.1	3	10.3	1	3.4	4	13.8	2	6.9	2	6.9	9	31.0	1	3.4
38. Our board has a clear leader(s).	8	27.6	5	17.2	1	3.4	3	10.3	-	-	2	6.9	9	31.0	1	3.4
<b>Continuous Communication</b>																
39. Members of the board attend all or most board meetings.	3	10.3	8	27.6	7	24.1	-	-	-	-	1	3.4	9	31.0	1	3.4
40. Members of the board participate actively in board meetings.	4	13.8	8	27.6	5	17.2	1	3.4	-	-	1	3.4	9	31.0	1	3.4
41. The board works to compromise and reach agreement.	5	17.2	7	24.1	5	17.2	1	3.4	-	-	1	3.4	9	31.0	1	3.4
<b>Continuous Learning</b>																
42. Our board regularly reviews progress on our goals and action plans.	7	24.1	4	13.8	3	10.3	3	10.3	1	3.4	1	3.4	9	31.0	1	3.4
43. Our board adjusts our plans and activities in response to feedback and data.	7	24.1	2	6.9	7	24.1	1	3.4	1	3.4	1	3.4	9	31.0	1	3.4
44. Our board openly discusses mistakes in order to learn from them.	7	24.1	4	13.8	5	17.2	-	-	1	3.4	2	6.9	9	31.0	1	3.4

(continued)

**Exhibit C-9e. Responses for Bridge Organization Alignment (continued)**

Please rate the extent to which you agree that each of the following statements describes your AHC Model’s advisory board, informal board, collaborative, or council (“the board”).	Completely Agree		Mostly Agree		Somewhat Agree		Slightly Agree		Do Not Agree at All		Not Applicable/ Don’t Know		Legitimate Skip		Missing/ No Response	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
<b>Community Engagement</b>																
45. Our board solicits feedback from beneficiaries in our community.	3	10.3	3	10.3	6	20.7	4	13.8	1	3.4	2	6.9	9	31.0	1	3.4
46. Beneficiaries from our community serve in leadership positions within our advisory board.	-	-	1	3.4	2	6.9	1	3.4	11	37.9	4	13.8	9	31.0	1	3.4
<b>Identifying and Addressing Gaps</b>																
47. Our board has identified gaps in services to address health-related social needs.	9	31.0	5	17.2	2	6.9	1	3.4	-	-	2	6.9	9	31.0	1	3.4
48. Our board has reduced gaps in services to address health-related social needs.	2	6.9	1	3.4	3	10.3	6	20.7	2	6.9	5	17.2	9	31.0	1	3.4

Definitions: AHC = Accountable Health Communities.  
 Other Notes: Multiple answers allowed.

**Exhibit C-9f. Responses for Bridge Organization Alignment**

49. Next, thinking about your AHC Model activities, we are interested in learning about how you have worked with or engaged with each of the following organization types. <sup>1</sup>	None		Bridge Organizations		Clinical Delivery Sites (CDSs)		Community Service Providers (CSPs)		State Medicaid Agency		Behavioral Health Provider	
	n	%	n	%	n	%	n	%	n	%	n	%
a. Established MOU, MOA, cooperative agreement, or equivalent	1	3.4	10	34.5	16	55.2	13	44.8	16	55.2	11	37.9
b. Participate in quality improvement activities	2	6.9	17	58.6	16	55.2	7	24.1	5	17.2	7	24.1
c. Refer beneficiary for services and resources	1	3.4	9	31.0	13	44.8	13	44.8	2	6.9	9	31.0
d. Provide/receive technical assistance	3	10.3	15	51.7	12	41.4	6	20.7	3	10.3	7	24.1
e. Provide/receive space for screening	2	6.9	8	27.6	17	58.6	1	3.4	1	3.4	7	24.1
f. Provide/receive equipment/supplies	3	10.3	15	51.7	10	34.5	1	3.4	-	-	4	13.8
g. Provide/receive advertising/promotion of organization, services, events	8	27.6	10	34.5	5	17.2	2	6.9	1	3.4	2	6.9
h. Other activities	13	44.8	2	6.9	-	-	-	-	1	3.4	-	-

<sup>1</sup> Multiple answers allowed.

Definitions: AHC = Accountable Health Communities; CDS = clinical delivery site; CSP = community service provider; MOA = memorandum of agreement; MOU = memorandum of understanding.

**Exhibit C-9g. Responses for Bridge Organization Alignment**

<b>50. Has COVID-19 affected your organization's ability to implement the AHC Model?</b>	<b>n</b>	<b>%</b>
a. Yes	28	96.6
b. No	-	-
c. Don't know	-	-
Missing/No response	1	3.4

Definitions: COVID-19 = coronavirus disease 2019.

Other Notes: Multiple answers allowed.

**Exhibit C-9h. Responses for Bridge Organization Alignment**

<b>51. How has COVID-19 affected your AHC Model implementation?<sup>1</sup></b>	<b>n</b>	<b>%</b>
a. Screening activities have ceased or slowed down	23	79.3
b. Navigation activities have ceased or slowed down	21	72.4
c. Staff have been re-deployed for COVID-19 response	10	34.5
d. Staff shortages due to an illness or caretaking	9	31.0
e. Availability and/or access to community services have been diminished	24	82.8
f. Other	-	-

<sup>1</sup> Multiple answers allowed.

Definitions: AHC = Accountable Health Communities; COVID-19 = coronavirus disease 2019.

# CDS Survey Data Collection and Analysis Methods

The Survey of Clinical Delivery Sites was administered to 333 CDSs from all 29 bridge organizations participating in the AHC Model as of October 2019. The primary AHC contacts from each CDS were provided by each bridge organization and a subsequent list of key staff identified by Innovation Center Project Officers. A key representative from each CDS was invited to complete the web-based survey during the period of April through June 2020.

The Survey of Clinical Delivery Sites consisted of 51 items and was designed to collect systematic, quantifiable data about organization type and size; AHC staffing practices; screening, referral, and navigation procedures; and data capture and sharing practices for each CDS and the associated bridge organization. The survey also included questions related to engagement with community organizations; the goals, activities, leadership, and communication style of each bridge organization’s advisory board; and the effect COVID-19 has had on the organization’s ability to implement the AHC Model.

Descriptive analyses were conducted for each survey question. Survey weights were used to account for nonresponse and the large variation in the number of CDSs associated with each bridge organization. Frequency tables at the CDS level are included below for each survey question.

## CDS Exhibits

### Exhibit C-10a. Weighted Responses for General Background of CDSs—Number of Locations

1. How many physical locations does your organization have that are part of the AHC Model?	n	%
a. 1 location	70	29.7
b. 2–4 locations	67	28.4
c. 5–9 locations	28	11.9
d. 10 or more locations	38	16.1

Definitions: AHC = Accountable Health Communities.

### Exhibit C-10b. Responses for General Background of CDSs—Organization Type

2. Which of the following describes your organization? <sup>1</sup>	n	%
a. Hospital	92	39.0
b. Primary care health provider or practice	140	59.3
c. Behavioral health service provider	49	20.8
d. Other	29	12.3

<sup>1</sup> Multiple responses allowed.

**Exhibit C-10c. Responses for General Background of CDSs—Beneficiary Type**

3. Approximately what percentage of your patients or clients are:	0%		1–24%		25–49%		50–74%		75–100%		Legitimate Skip		Missing/No Response	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
a. Medicare beneficiaries	26	11.0	59	25.0	67	28.4	40	16.9	15	6.4	29	12.3	-	-
Medicare Advantage beneficiaries	9	3.8	62	26.3	38	16.1	21	8.9	7	3.0	39	16.5	26	11.0
Medicare fee-for-service beneficiaries	12	5.1	62	26.3	34	14.4	19	8.1	6	2.5	39	16.5	26	11.0
b. Medicaid beneficiaries	9	3.8	45	19.1	59	25.0	60	25.4	32	13.6	31	13.1	-	-
Medicaid Managed Care beneficiaries	9	3.8	46	19.5	35	14.8	34	14.4	31	13.1	31	13.1	9	3.8
c. Covered by private insurance (PPO or HMO)	28	11.9	106	44.9	51	21.6	14	5.9	3	1.3	34	14.4	-	-
d. Uninsured	37	15.7	130	55.1	16	6.8	12	5.1	5	2.1	36	15.3	-	-

Definitions: HMO = health maintenance organization; PPO = preferred provider organization.

**Exhibit C-10d. Responses for General Background of CDSs—Number of Patients**

<b>4. Approximately how many total patients do you serve annually?</b>	<b>n</b>	<b>%</b>
a. Fewer than 20,000	100	42.4
b. 20,000–100,000	59	25.0
c. 100,001–250,000	12	5.1
d. 250,001–400,000	8	3.4
e. 400,001–650,000	7	3.0
f. > 650,000	6	2.5
g. Don't know	39	16.5
Missing/No response	5	2.1

**Exhibit C-10e. Responses for General Background of CDSs—Program Participation**

<b>5. Do the locations within your organization that participate in the AHC initiative participate in any of the following programs?<sup>1</sup></b>	<b>n</b>	<b>%</b>
a. Accountable Care Organization (ACO)	81	34.3
b. End-Stage Renal Disease Quality Incentive Program (ESRD QIP)	6	2.5
c. Hospital Value-Based Purchasing (VBP) Program	32	13.6
d. Hospital Readmission Reduction Program (HRRP)	30	12.7
e. Value Modifier (VM) Program (also called the Physician Value-Based Modifier or PVBM)	3	1.3
f. Hospital Acquired Conditions (HAC) Reduction Program	21	8.9
g. Skilled Nursing Facility Value-Based Program (SNFVBP)	5	2.1
h. Home Health Value Based Program (HHVBP)	6	2.5

(continued)

**Exhibit C-10e. Responses for General Background of CDSs—Program Participation (continued)**

<b>5. Do the locations within your organization that participate in the AHC initiative participate in any of the following programs?<sup>1</sup></b>	<b>n</b>	<b>%</b>
i. Primary Care First (PCF) or Comprehensive Primary Care Plus (CPC+)	39	16.5
j. Other program promoting value-based payment reform, please specify _____	30	12.7
k. This organization does not participate in any of the programs listed above.	35	14.8
l. Don't know	69	29.2

<sup>1</sup> Multiple responses allowed.

**Exhibit C-10f. Responses for General Background of CDSs—HSRNs**

<b>6. Has your organization screened any patients for health-related social needs (HSRNs) as part of the AHC Model?</b>	<b>n</b>	<b>%</b>
a. Yes	217	91.9
b. No (End of survey)	19	8.1

Definitions: AHC = Accountable Health Communities; HRSN = health-related social need.

**Exhibit C-11a. Responses for Staffing of CDSs—AHC-Funded Staff**

<b>7. How many staff does your organization employ who are paid, in whole or in part, with AHC funding?</b>	<b>n</b>	<b>Mean</b>	<b>%</b>
Valid response	209	23.5	19.18
Legitimate skip	19	0.08	-
Missing/No response	8	0.03	-

**Exhibit C-11b. Responses for Staffing of CDSs—Number of Screeners**

<b>8. How many people at your organization conduct screenings for HSRNs for the AHC program? (If 0, skip to 10)</b>	<b>n</b>	<b>Mean</b>	<b>%</b>
Valid response	209	23.5	19.18
Legitimate skip	19	0.08	-
Missing/No response	8	0.03	-

Definitions: HRSN = health-related social need.

### Exhibit C-11c. Responses for Staffing of CDSs—Unpaid Screeners

9. What percentage of the people who do screenings (“screeners”) are in unpaid roles (e.g., students, interns, volunteers, etc.)?	n	%
a. None, they are all paid positions	143	60.6
b. 1–24%	13	5.5
c. 25–49%	5	2.1
d. 50–75%	2	0.8
e. 75–100%	4	1.7
f. Don’t know	13	5.5
Legitimate skip	47	19.9
Missing/No response	9	3.8

### Exhibit C-11d. Responses for Staffing of CDSs—Number of Navigators

10. How many people at your organization are patient navigators for the AHC program? (If 0, skip to 12)	n	Mean	%
Valid response	206	4.7	1.42
Legitimate skip	19	0.08	-
Missing/No response	11	0.05	-

Definitions: AHC = Accountable Health Communities.

### Exhibit C-11e. Responses for Staffing of CDSs—Unpaid Navigators

11. What percentage of the people who do patient navigation are in unpaid roles (e.g., students, interns, volunteers, etc.)?	n	%
a. None, they are all paid positions	89	37.7
b. 1–24%	6	2.5
c. 25–49%	1	0.4
d. 50–75%	1	0.4
e. 76–100%	2	0.8
f. Don’t know	9	3.8
Legitimate skip	119	50.4
Missing/No response	9	3.8

**Exhibit C-11f. Responses for Staffing of CDSs—Staff Turnover**

12. Have you had any staff turnover (i.e., voluntarily or involuntarily leave the organization or the project) in any of these AHC roles?	Yes		No		We Do Not Have People in This Role		Legitimate Skip		Missing/No Response	
	n	%	n	%	n	%	n	%	n	%
a. Key AHC roles (e.g., leadership, project management)	49	20.8	117	49.6	1	0.4	40	16.9	19	8.1
b. Screeners	87	36.9	71	30.1	22	9.3	28	11.9	19	8.1
c. Patient navigators	49	20.8	64	27.1	60	25.4	35	14.8	19	8.1

Definitions: AHC = Accountable Health Communities.

**Exhibit C-11g. Responses for Staffing of CDSs—Staffing Challenges**

13. How challenging have the following factors been to your organization’s ability to fully staff the AHC project?	Not at All Challenging		Somewhat Challenging		Challenging		Extremely Challenging		Legitimate Skip		Missing/No Response	
	n	%	n	%	n	%	n	%	n	%	n	%
a. Not enough applicants	62	26.3	41	17.4	33	14.0	15	6.4	55	23.3	19	8.1
b. Applicants are not qualified	69	29.2	42	17.8	29	12.3	8	3.4	56	23.7	19	8.1
c. Turnover is higher than expected	73	30.9	45	19.1	15	6.4	15	6.4	56	23.7	19	8.1

Definitions: AHC = Accountable Health Communities.

**Exhibit C-12a. Responses for CDS Screening—Preparation and Process—Screeener Training**

14. What training do screeners receive? <sup>1</sup>	Training Delivery Mode									
	No Training on This Content		In Person		Online/Webinar		Other		Don't Know	
	n	%	n	%	n	%	n	%	n	%
a. Screeners do not receive any training	13	5.5								
b. Centers for Medicaid & Medicare Services (CMS) webinars only	49	20.8	-	-	65	27.5	-	-	48	20.3
c. Administering the screening tool	2	0.8	130	55.1	61	25.8	3	1.3	24	10.2
d. Approaching/engaging patients	8	3.4	120	50.8	60	25.4	4	1.7	23	9.7
e. Cultural sensitivity training	23	9.7	81	34.3	79	33.5	4	1.7	33	14.0
f. Refresher/booster training based on individual performance and/or quality assurance measures	24	10.2	101	42.8	50	21.2	1	0.4	33	14.0
g. Other content	36	15.3	28	11.9	20	8.5	1	0.4	92	39.0

<sup>1</sup> Multiple responses allowed.

Definitions: CMS = Centers for Medicaid & Medicare Services.

**Exhibit C-12b. Responses for CDS Screening—Preparation and Process—HRSN Screening Frequency**

15. How frequently do you screen patients for the following health-related social needs (HRSNs)?	No More Than Once per Year		Every Few Months		Every Few Weeks		At Every Visit		Don't Know		Legitimate Skip		Missing/No Response	
	n	%	n	%	n	n	%	%	n	%	n	%	n	%
a. Food security	45	19.1	54	22.9	17	7.2	75	31.8	9	3.8	19	8.1	17	7.2
b. Housing	46	19.5	56	23.7	17	7.2	71	30.1	10	4.2	19	8.1	17	7.2
c. Safety	44	18.6	57	24.2	16	6.8	73	30.9	10	4.2	19	8.1	17	7.2
d. Transportation	45	19.1	55	23.3	20	8.5	72	30.5	8	3.4	19	8.1	17	7.2
e. Utilities	47	19.9	54	22.9	19	8.1	69	29.2	11	4.7	19	8.1	17	7.2

Definitions: HRSN = health-related social need.

**Exhibit C-12c. Responses for CDS Screening—Preparation and Process—Supplemental HRSN Screening Frequency**

16. How frequently do you screen patients for the following supplemental HRSNs?	Never		No More Than Once per Year		Every Few Months		Every Few Weeks		At Every Visit		Don't Know		Legitimate Skip		Missing/No Response	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
a. Family and social support	15	6.4	43	18.2	46	19.5	16	6.8	63	26.7	17	7.2	19	8.1	17	7.2
b. Education	25	10.6	53	22.5	41	17.4	10	4.2	48	20.3	22	9.3	19	8.1	18	7.6
c. Employment and income	16	6.8	52	22.0	44	18.6	13	5.5	53	22.5	21	8.9	19	8.1	18	7.6
d. Health behaviors (e.g., substance abuse, tobacco use)	18	7.6	38	16.1	32	13.6	13	5.5	77	32.6	21	8.9	19	8.1	18	7.6
e. Other	82	34.7	3	1.3	4	1.7	2	0.8	11	4.7	91	38.6	19	8.1	24	10.2

Definitions: HRSN = health-related social need.

**Exhibit C-12d. Responses for CDS Screening—Preparation and Process—Screening Methods**

17. What are the primary screening data collection methods used by screeners to collect screening data from beneficiaries? <sup>1</sup>	n	%
a. Electronic tablet	53	22.5
b. Laptop computer	42	17.8
c. Paper forms	141	59.7
d. Our screenings are self-administered by the beneficiaries	19	8.1
e. Other	23	9.7
f. Don't know	10	4.2

<sup>1</sup> Multiple responses allowed.

**Exhibit C-12e. Responses for CDS Screening—Preparation and Process—Time of Screening**

18. When are screenings typically conducted? <sup>1</sup>	n	%
a. Before the clinical visit	114	48.3
b. During the clinical visit	97	41.1
c. After the clinical visit	61	25.8
d. Other	6	2.5
e. Don't know	5	2.1

<sup>1</sup> Multiple responses allowed.

**Exhibit C-12f. Responses for CDS Screening—Preparation and Process—Screening Tools**

19. What HRSN screening tools do staff at your organization use? <sup>1</sup>	n	%
a. AHC screening tools	185	78.4
b. PRAPARE assessment tool	7	3.0
c. Other non-AHC screening tools	22	9.3
d. Don't know	11	4.7

<sup>1</sup> Multiple responses allowed.

Definitions: AHC = Accountable Health Communities; HRSN = health-related social need.

**Exhibit C-12g. Responses for CDS Screening—Preparation and Process—Screening Tool Usage**

<b>20. How long have staff at your organization used non-AHC screening tools?</b>	<b>n</b>	<b>%</b>
a. Less than 6 months	8	3.4
b. More than 6 months, less than 12 months	21	8.9
c. More than 12 months	67	28.4
d. We do not use any non-AHC screening tools	70	29.7
e. Don't know	34	14.4
Legitimate skip	19	8.1
Missing/No response	17	7.2

Definitions: AHC = Accountable Health Communities.

**Exhibit C-13a. Responses for CDS Screening Data: Entering and Sharing Practices—Data Systems**

<b>21. How does your organization enter patient screening data?</b>	<b>n</b>	<b>%</b>
a. Using CMS' AHC data system	109	46.2
b. Using an alternative data system	57	24.2
c. Don't know	33	14.0
Legitimate skip	19	8.1
Missing/No response	18	7.6

Definitions: AHC = Accountable Health Communities; CMS = Centers for Medicare & Medicaid Services.

**Exhibit C-13b. Responses for CDS Screening Data: Entering and Sharing Practices—Organizations**

<b>22. With whom do you share AHC screening data?<sup>1</sup></b>	<b>n</b>	<b>%</b>
a. Bridge organization	48	20.3
b. Community service provider (CSPs)	24	10.2
c. The state Medicaid agency	16	6.8
d. The AHC advisory board	39	16.5
e. Clinical providers	52	22.0
f. We do not share screening data with other organizations	35	14.8
g. Don't know	59	25.0

<sup>1</sup> Multiple responses allowed.

Definitions: AHC = Accountable Health Communities; CSP = community service provider.

**Exhibit C-13c. Responses for CDS Screening Data: Entering and Sharing Practices—Format of Data Transfer**

23. How do you share screening data with this partner? <sup>1</sup>	Electronic Health Records		Health Information Exchange		Fax		Paper		Phone		Other	
	n	%	n	%	n	%	n	%	n	%	n	%
a. Bridge organization	8	3.4	18	7.6	6	2.5	3	1.3	4	1.7	14	5.9
b. Community service provider (CSPs)	2	0.8	8	3.4	2	0.8	2	0.8	9	3.8	8	3.4
c. The state Medicaid agency	2	0.8	12	5.1	1	0.4	1	0.4	2	0.8	1	0.4
d. The AHC advisory board	5	2.1	15	6.4	4	1.7	5	2.1	1	0.4	10	4.2
e. Clinical providers	33	14.0	5	2.1	1	0.4	5	2.1	5	2.1	15	6.4

<sup>1</sup> Multiple responses allowed.

Definitions: AHC = Accountable Health Communities; CSP = community service provider.

**Exhibit C-14. Responses for CDS Navigation Process—Navigation Frequency**

24. How often do navigation encounters happen in the following ways?	Never		Rarely		Sometimes		Often		Always		Don't Know		Legitimate Skip		Missing/No Response	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
a. During face-to-face/ in-person meetings	18	7.6	28	11.9	42	17.8	48	20.3	30	12.7	34	14.4	19	8.1	17	7.2
b. Using telephone calls	20	8.5	17	7.2	36	15.3	69	29.2	27	11.4	30	12.7	19	8.1	18	7.6
c. Using text messages	103	43.6	21	8.9	14	5.9	12	5.1	4	1.7	45	19.1	19	8.1	18	7.6
d. Other	-	-	16	6.8	6	2.5	1	0.4	1	0.4	43	18.2	19	8.1	150	63.6

**Exhibit C-15a. Responses for CDS Navigation Data Sharing Practices—Navigation Organizations**

<b>25. With whom do you share AHC navigation data?<sup>1</sup></b>	<b>n</b>	<b>%</b>
a. Bridge organization	51	21.6
b. Community service provider (CSPs)	21	8.9
c. The state Medicaid agency	15	6.4
d. The AHC advisory board	35	14.8
e. Clinical providers	47	19.9
f. We do not share navigation data with other organizations.	36	15.3
g. Don't know	62	26.3

<sup>1</sup> Multiple responses allowed.

Definitions: AHC = Accountable Health Communities; CSP = community service provider.

**Exhibit C-15b. Responses for CDS Navigation Data Sharing Practices—Format of Data Transfer**

26. How do you share navigation data with this partner? <sup>1</sup>	Electronic Health Records		Health Information Exchange		Fax		Paper		Phone		Other	
	n	%	n	%	n	%	n	%	n	%	n	%
a. Bridge organization	10	4.2	19	8.1	4	1.7	5	2.1	3	1.3	16	6.8
b. Community service provider (CSPs)	2	0.8	7	3.0	1	0.4	4	1.7	5	2.1	7	3.0
c. The state Medicaid agency	3	1.3	9	3.8	1	0.4	1	0.4	2	0.8	-	-
d. The AHC advisory board	6	2.5	15	6.4	3	1.3	4	1.7	3	1.3	7	3.0
e. Clinical providers	29	12.3	5	2.1	2	0.8	6	2.5	3	1.3	12	5.1

<sup>1</sup> Multiple responses allowed. Dash indicates “None.”

Definitions: AHC = Accountable Health Communities; CSP = community service provider.

**Exhibit C-16a. Responses for Feedback from Bridge Organizations for CDSs—Reports of Screening Milestones**

27. Does your bridge organization provide you with reports of your progress toward screening milestones?	n	%
a. Yes	138	58.5
b. No	11	4.7
c. Not applicable	50	21.2
Legitimate skip	19	8.1
Missing/No response	18	7.6

**Exhibit C-16b. Weighted by Bridge: Responses for Feedback from Bridge Organizations for CDSs—Reports of Screening Milestones**

27. Does your bridge organization provide you with reports of your progress toward screening milestones?	n	%
d. Yes	17.1	60.9
e. No	1.8	6.3
f. Not applicable	6.0	21.5
Legitimate skip	1.5	5.5
Missing/No response	1.6	5.8

Other Notes: CDS responses down-to represent bridge organization-level counts and percentages.

**Exhibit C-16c. Responses for Feedback from Bridge Organizations for CDSs—Reports of Navigation Milestones**

28. Does your bridge organization provide you with reports of your progress toward navigation milestones?	n	%
a. Yes	132	55.9
b. No	14	5.9
c. Not applicable	53	22.5
Legitimate skip	19	8.1
Missing/No response	18	7.6

**Exhibit C-16d. Weighted by Bridge Organization: Responses for Feedback from Bridge Organizations for CDSs—Reports of Navigation Milestones**

<b>28. Does your bridge organization provide you with reports of your progress toward navigation milestones?</b>	<b>n</b>	<b>%</b>
d. Yes	16.9	60.4
e. No	2.1	7.5
f. Not applicable	5.8	20.9
Legitimate skip	1.5	5.5
Missing/No response	1.6	5.8

Other Notes: CDS responses down-to represent bridge-level counts and percentages.

**Exhibit C-17a. Responses for CDS Alignment—Advisory Boards**

<b>29. Does your organization participate in an advisory board or council for the AHC Model?</b>	<b>n</b>	<b>%</b>
a. We have a formal advisory board.	63	26.7
b. We don't have a formal advisory board, but we do have an informal board, collaborative, or council.	23	9.7
c. We do not have an advisory board, collaborative, or council. (end of survey)	38	16.1
d. Don't know	73	30.9
Legitimate skip	19	8.1
Missing/No response	20	8.5

Definitions: AHC = Accountable Health Communities.

**Exhibit C-17b. Responses for CDS Alignment—Length of Service for Advisory Board Members**

<b>30. How many months have you been serving on the AHC Model advisory board, collaborative, or council?</b>	<b>n</b>	<b>%</b>
a. Less than 3 months	-	-
b. More than 3 months, less than 6 months	5	2.1
c. 6–12 months	16	6.8
d. Longer than 12 months	45	19.1

(continued)

**Exhibit C-17b. Responses for CDS Alignment—Length of Service for Advisory Board Members (continued)**

<b>30. How many months have you been serving on the AHC Model advisory board, collaborative, or council?</b>	<b>n</b>	<b>%</b>
e. I am not currently on the advisory board. (end of survey)	23	9.7
Legitimate skip	130	55.1
Missing/No response	17	7.2

Definitions: AHC = Accountable Health Communities.  
 Other Notes: Dash indicates “None.”

**Exhibit C-17c. Responses for CDS Alignment—Frequency of Advisory Board Meetings**

<b>31. Approximately how often does the advisory board, collaborative, or council meet?</b>	<b>n</b>	<b>%</b>
a. 1–2 times per week	1	0.4
b. 1–2 times per month	7	3.0
c. 1–2 times every couple of months	44	18.6
d. 1–2 times per year	14	5.9
Legitimate skip	153	64.8
Missing/No response	17	7.2

**Exhibit C-17d. Responses for CDS Alignment—Advisory Board Opinions**

Please rate the extent to which you agree that each of the following statements describes your AHC Model’s advisory board, informal board, collaborative, or council (“the board”).	Completely Agree		Mostly Agree		Somewhat Agree		Slightly Agree		Do Not Agree at All		Not Applicable/ Don’t Know		Legitimate Skip		Missing/No Response	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
<b>Goals</b>																
32. Our board has a written description of our shared goals. Shared goals can be defined as a description of what is to be accomplished over a defined timeframe and a clear mission statement.	30	19.0	18	11.4	6	3.8	2	1.3	1	0.6	8	5.1	87	55.1	6	3.8
33. Our shared goals were developed by a group with diverse perspectives.	31	19.6	18	11.4	5	3.2	1	0.6	1	0.6	9	5.7	87	55.1	6	3.8
<b>Mutually Reinforcing Activities</b>																
34. We have an action plan (e.g., quality improvement development plan) that specifies the activities that each board members’ organization will do.	20	12.7	17	10.8	5	3.2	5	3.2	1	0.6	17	10.8	87	55.1	6	3.8
35. Board members understand the roles of our working groups and who these roles support our shared goals.	20	12.7	23	14.6	7	4.4	2	1.3	1	0.6	12	7.6	87	55.1	6	3.8
36. Board members’ organizational activities change as needed to better align with the action plan.	18	11.4	22	13.9	8	5.1	1	0.6	1	0.6	15	9.5	87	55.1	6	3.8

(continued)

**Exhibit C-17d. Responses for CDS Alignment—Advisory Board Opinions (continued)**

Please rate the extent to which you agree that each of the following statements describes your AHC Model’s advisory board, informal board, collaborative, or council (“the board”).	Completely Agree		Mostly Agree		Somewhat Agree		Slightly Agree		Do Not Agree at All		Not Applicable/ Don’t Know		Legitimate Skip		Missing/No Response	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
<b>Leadership</b>																
37. Board leadership creates an environment where things can be accomplished.	26	16.5	22	13.9	9	5.7	2	1.3	1	0.6	5	3.2	87	55.1	6	3.8
38. Our board has a clear leader(s).	34	21.5	15	9.5	8	5.1	2	1.3	1	0.6	5	3.2	87	55.1	6	3.8
<b>Continuous Communication</b>																
39. Members of the board attend all or most board meetings.	18	11.4	25	15.8	11	7.0	1	0.6	1	0.6	9	5.7	87	55.1	6	3.8
40. Members of the board participate actively in board meetings.	24	15.2	17	10.8	14	8.9	2	1.3	1	0.6	7	4.4	87	55.1	6	3.8
41. The board works to compromise and reach agreement.	27	17.1	16	10.1	9	5.7	4	2.5	-	-	9	5.7	87	55.1	6	3.8
<b>Continuous Learning</b>																
42. Our board regularly reviews progress on our goals and action plans.	24	15.2	28	17.7	5	3.2	1	0.6	-	-	7	4.4	87	55.1	6	3.8
43. Our board adjusts our plans and activities in response to feedback and data.	24	15.2	26	16.5	8	5.1	1	0.6	-	-	6	3.8	87	55.1	6	3.8
44. Our board openly discusses mistakes in order to learn from them.	20	12.7	25	15.8	8	5.1	2	1.3	-	-	10	6.3	87	55.1	6	3.8

(continued)

**Exhibit C-17d. Responses for CDS Alignment—Advisory Board Opinions (continued)**

Please rate the extent to which you agree that each of the following statements describes your AHC Model’s advisory board, informal board, collaborative, or council (“the board”).	Completely Agree		Mostly Agree		Somewhat Agree		Slightly Agree		Do Not Agree at All		Not Applicable/ Don’t Know		Legitimate Skip		Missing/No Response	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
<b>Community Engagement</b>																
45. Our board solicits feedback from beneficiaries in our community.	21	13.3	17	10.8	5	3.2	4	2.5	2	1.3	16	10.1	87	55.1	6	3.8
46. Beneficiaries from our community serve in leadership positions within our advisory board.	13	8.2	14	8.9	5	3.2	3	1.9	5	3.2	25	15.8	87	55.1	6	3.8
<b>Identifying and Addressing Gaps</b>																
47. Our board has identified gaps in services to address health-related social needs.	20	12.7	29	18.4	6	3.8	2	1.3	-	-	7	4.4	87	55.1	7	4.4
48. Our board has reduced gaps in services to address health-related social needs.	12	7.6	22	13.9	11	7.0	5	3.2	1	0.6	13	8.2	87	55.1	7	4.4

Definitions: AHC = Accountable Health Communities.  
 Other Notes: Alignment Track CDSs only. Dash indicates “None.”

**Exhibit C-17e. Responses for CDS Alignment—Activities by Organization Type**

49. Next, thinking about your AHC Model activities, we are interested in learning about how you have worked with or engaged with each of the following organization types.	Does Not Apply		Bridge Organizations		Clinical Delivery Sites (CDSs)		Community Service Providers (CSPs)		State Medicaid Agency		Behavioral Health Provider	
	n	%	n	%	n	%	n	%	n	%	n	%
a. Established MOU, MOA, cooperative agreement, or equivalent	6	3.8	38	24.1	14	8.9	20	12.7	7	4.4	8	5.1
b. Participate in quality improvement activities	-	-	50	31.6	27	17.1	20	12.7	11	7.0	11	7.0
c. Refer beneficiary for services and resources	1	0.6	27	17.1	24	15.2	39	24.7	12	7.6	22	13.9
d. Provide/receive technical assistance	5	3.2	40	25.3	16	10.1	16	10.1	5	3.2	7	4.4
e. Provide/receive space for screening	6	3.8	16	10.1	33	20.9	14	8.9	4	2.5	11	7.0
f. Provide/receive equipment/supplies	10	6.3	29	18.4	22	13.9	10	6.3	2	1.3	5	3.2
g. Provide/receive advertising/promotion of organization, services, events	12	7.6	35	22.2	13	8.2	12	7.6	1	0.6	5	3.2
h. Other activities	23	14.6	8	5.1	3	1.9	5	3.2	1	0.6	-	-

Definitions: AHC = Accountable Health Communities; CDS = clinical delivery site; CSP = community service provider; MOA = memorandum of agreement; MOU = memorandum of understanding.

Other Notes: Alignment Track CDSs only.

**Exhibit C-17f. Responses for CDS Alignment —COVID-19**

50. Has COVID-19 affected your organization’s ability to implement the AHC Model?	n	%
a. Yes	73	46.2
b. No (End of survey)	14	8.9
c. Don’t know (End of survey)	3	1.9
d. Missing/No response	68	43.0

Other Notes: Alignment Track CDSs only.

**Exhibit C-17g. Responses for CDS Alignment—Effects of COVID-19**

51. Wave2. How has COVID-19 affected your AHC Model implementation?	COVID Did Not Affect This		This Issue Has Continued With No Real Improvement		This Issue Has Improved, But Not to Pre-COVID Levels		This Was an Issue, But Has Improved to Pre-COVID Levels		Legitimate Skip		Not Applicable		Missing/No Response	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
a. Screening activities have ceased or slowed down	-	-	68	43.0	58	36.7	9	5.7	2	1.3	16	10.1	5	3.2
b. Navigation activities have ceased or slowed down	68	43.0	58	36.7	9	5.7	4	2.5	2	1.3	10	6.3	7	4.4
c. Staff have been re-deployed for COVID-19 response	68	43.0	-	-	58	36.7	9	5.7	9	5.7	9	5.7	5	3.2
d. Staff shortages due to an illness or caretaking	68	43.0	58	36.7	9	5.7	7	4.4	2	1.3	10	6.3	4	2.5
e. Availability and/or access to community services have been diminished	68	43.0	58	36.7	9	5.7	6	3.8	4	2.5	10	6.3	3	1.9
f. Other	10	6.3	29	18.4	22	13.9	10	6.3	2	1.3	5	3.2	2	1.3

Definitions: CDS = clinical delivery site; COVID-19 = coronavirus disease 2019.  
 Other Notes: Alignment Track CDSs only. Multiple responses allowed.

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# Appendix D: Qualitative Data and Methods

The qualitative data referenced in Chapters 5, 6, 7 and 8 explore the underlying context, program implementation, and factors shaping Accountable Health Communities (AHC) screening, referral, and navigation activities and the challenges and opportunities to achieving resolution of health-related social needs (HRSNs).

The evaluation team collected qualitative data from in-depth interviews with key informants, including AHC leaders responsible for overseeing implementation of the AHC Model, staff within bridge organizations and from partnering organizations, and Medicare and Medicaid beneficiaries screened through the model. The team conducted in-depth interviews during three waves of data collection. The first wave, referred to as planning call interviews, entailed interviews with AHC leaders such as bridge organization project directors, managers, and principal investigators. The team conducted this wave of interviews by phone from June through August 2019. The second wave entailed interviews with a mix of bridge organization leads, AHC project directors or managers, clinical delivery site (CDS) staff, patient navigators, advisory board members (if applicable), community service providers (CSPs), and beneficiaries. The team conducted these interviews by phone and in person as part of case study site visits from January through March 2020. The third wave entailed interviews with AHC leaders, State Medicaid staff, quality improvement specialists for the Alignment Track only, and data specialists for the Assistance Track only. The team conducted these interviews by phone from January through March 2021. The team also reviewed data from program documents detailing bridge organizations' implementation strategies and progress. This appendix describes the methods used to collect and analyze these qualitative data. The successive waves of data collection are iterative in design with later waves of data building on the findings from prior waves. This report draws primarily from the third wave of data collection.

## Planning Call Interviews: Wave 1

### Purpose and Overview

Between June and August 2019, the evaluation team conducted semi-structured telephone interviews (“planning calls”) with AHC leaders from all 30 bridge organizations active at the time of data collection. The evaluation team piloted the interview protocol in June 2019 with AHC leaders from a subset of bridge organizations from each track, as recommended by the model team. Seven bridge organizations participated at this stage. After the pilot interviews, the evaluation team revised the interview protocol before conducting the remaining 23 interviews in July and August 2019.

The interviews addressed the following:

- Each community’s approach to the AHC Model and how it differs from usual care, or the clinical care that a community-dwelling beneficiary would receive for the prevention or treatment of disease or injury regardless of whether the beneficiary is eligible for and receives an intervention under the model
- How communities prepared for implementation
- Partnerships associated with the AHC Model, including with CDSs, CSPs, and advisory board members (Alignment Track only)
- Beneficiary needs in AHC communities
- Early lessons learned and unanticipated challenges

## Administration and Design

Call participants included AHC leaders responsible for overseeing implementation of the AHC Model—often, staff in project director, project manager, or principal investigator roles. These AHC leaders self-identified during an earlier set of kickoff phone calls, during which the evaluation team introduced themselves and the overall evaluation approach. Other AHC staff involved in model planning and implementation participated in the planning calls if AHC leaders felt that the knowledge and expertise of these supporting staff would create a richer discussion. Two qualitative evaluation staff assigned to each bridge organization conducted the planning calls. All interviews lasted approximately 60 minutes and were conducted by phone. The calls were audio-recorded and professionally transcribed before analysis.

## Case Study and Virtual Key Informant Interviews: Wave 2

### Purpose and Overview

Between January and March 2020, the evaluation team conducted case study and virtual key informant phone interviews with participants from 29 bridge organizations active at the time of data collection. One bridge organization terminated the model after the planning calls and before the case study and virtual key informant interviews. Ten bridge organizations received case study interviews (**Exhibit D-1**) to help inform future analyses focusing on the contextual and implementation factors that account for bridge organization performance (see the section below for more details about the case study selection criteria). The remaining 19 bridge organizations received virtual key informant interviews.

All 2020 case study and key informant interviews addressed the following:

- Implementation of screening, referral, and navigation processes
- Relationship of AHC screening, referral, and navigation to usual care
- Implementation of alignment activities
- Partners' involvement in the AHC Model
- Community needs and resources
- Early lessons learned and unanticipated challenges

### Administration and Design

The evaluation team used a case study design to guide qualitative data collection in 2020. The 10 bridge organizations included in the case study were four Assistance Track bridge organizations and six Alignment Track bridge organizations, which were selected based on evidence of having high or low implementation effectiveness at the time of selection. We used AHC program data to identify Assistance Track bridge organizations that have been effective and ineffective with respect to screening and navigation. We asked qualitative evaluation staff to provide a holistic assessment of Alignment Track bridge organization effectiveness with respect to three measures: advisory board development, multisector engagement, and continuous quality improvement.

To ensure heterogeneity in the case study sample and mitigate the burden of data collection, the evaluation team also considered rural/urban location, the size of the AHC Model service area, other data collection activities the bridge organization experienced, and whether the Innovation Center had placed the bridge organization on a

performance plan.<sup>1</sup> Bridge organizations not selected for the case study participated in the key informant interviews by phone. Bridge organizations included for the case study are listed in **Exhibit D-1**.

### Exhibit D-1. AHC Bridge Organizations Selected for 2020 Case Study

Track	Bridge Organization Name
Assistance	CHRISTUS Santa Rosa Healthcare Corporation
	St. Joseph’s Hospital Health Center
	Hackensack University Medical Center
	Partners in Health Network, Inc.
Alignment	Denver Regional Council of Governments
	Reading Hospital
	Danbury Hospital
	MyHealth Access Network Inc.
	Parkland Center for Clinical Innovation
	Presbyterian Healthcare Services

The number and type of stakeholders targeted for interviews varied for the case study bridge organizations and key informant interview bridge organizations. For each case study bridge organization, the evaluation team conducted approximately five in-person individual or group interviews with a mix of bridge organization leads, AHC project directors or managers, CDS staff, patient navigators, and advisory board members (if applicable). The team also aimed to interview five CSP partners per case study bridge organization by phone. For key informant interview bridge organizations, the evaluation team conducted approximately three to four individual or group interviews, depending on the track of the bridge organization. Interviews were conducted by phone with AHC project directors or managers, CDS staff, CSP partners, and advisory board members (for the Alignment Track only). Evaluation team members were encouraged to target participants who had been highly engaged in the AHC Model, represented a variety of CDS types, and addressed a variety of HRSNs.

Because of the COVID-19 pandemic, the evaluation team conducted fewer interviews than originally planned, particularly with representatives from CSPs. Interviews with non-CSP participants were mostly completed by the time the World Health Organization declared a pandemic in mid-March, but CSP interviews were still ongoing, and some of the remaining interviews were still being scheduled. Because many interview candidates became difficult to reach or were consumed with more pressing responsibilities resulting from the pandemic, evaluation leaders decided that it was in the best interest of the evaluation and model participants to discontinue recruitment after mid-April 2020. When recruitment was discontinued, the evaluation team had completed CSP interviews with 19 of 29 bridge organizations.

One- to two-person teams of qualitative evaluation staff conducted all interviews. Staff conducted the in-person case study interviews in 2020 at a location of the participant’s choosing, typically at their place of business or at a partner’s place of business. The remaining interviews were conducted by phone in 2020. Interviews typically lasted 60 minutes each. All interviews were audio-recorded using handheld digital recorders or audio-conferencing software and then professionally transcribed before analysis.

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<sup>1</sup> The Innovation Center monitors the performance of bridge organizations and puts bridge organizations on a performance plan if they are not meeting expectations.

**Exhibit D-2** lists the number of interviews by stakeholder type within each track and overall. CDS and CSP interview counts are shown by CDS type and HRSN addressed, respectively.

### Exhibit D-2. Wave 2: Key Informant Interviews by Stakeholder Type and Track

Stakeholder Type	Assistance Track	Alignment Track	Total
Bridge organization staff	18	20	38
Advisory board members	NA	12	12
Screeners and other CDS staff	5	14	19
Hospital: Emergency department	0	2	2
Hospital: Inpatient psychiatric	1	1	2
Hospital: Labor and delivery	0	0	0
Behavioral care provider	0	1	1
Primary care provider	1	1	2
Multiple sites	2	9	11
Other	1	0	1
Patient navigators	9	4	13
CSP staff	8	27	35
Food security	2	9	11
Housing	1	4	5
Interpersonal violence/safety	0	1	1
Transportation	1	0	1
Utilities	0	2	2
Other	4	11	15
Beneficiaries	36	22	58
<b>Total</b>	<b>76</b>	<b>99</b>	<b>175</b>

Notes: The “other” participant within the screeners and CDS category was a manager responsible for staff oversight. The “other” participants under the CSP staff category came from multiservice organizations or organizations that address HRSNs other than those central to the AHC Model, such as mental health, family, legal, education, and career services. The 36 interviews conducted with beneficiaries in the Assistance Track included 10 individuals in the control group.

Definitions: AHC = Accountable Health Communities; CDS = clinical delivery site; CSP = community service provider; HRSN = health-related social need; NA = not available.

## Virtual Key Informant Interviews: Wave 3

### Purpose and Overview

Between January and April 2021, the evaluation team conducted virtual key informant interviews with participants from 28 bridge organizations active at the time of data collection. One bridge organization terminated the model after the 2020 interviews and before these interviews.

All 2021 key informant interviews addressed the following:

- Ongoing model implementation and the effects of the COVID-19 pandemic on AHC activities
- Community needs and resources to address HRSNs and progress with HRSN resolution
- Partners' involvement in the AHC Model
- The relationship between AHC and other integrated health care strategies
- Interim impacts of the AHC Model

## Administration and Design

In 2021, key informant interviews were conducted for all bridge organizations. The evaluation team piloted the interview protocols with five bridge organizations selected by the model team with input from the Innovation Center. After the pilot interviews, the evaluation team revised the interview protocols before conducting interviews with the remaining 23 bridge organizations. The evaluation team conducted approximately three individual or group interviews for each bridge organization by phone. AHC project directors or managers and a liaison with the State Medicaid Agency were interviewed for both the Assistance and Alignment bridge organizations. This occurred in instances when a liaison within the State Medicaid Agency could not be identified or was unavailable for an interview. The third interview differed by track. A program data specialist was interviewed for the Assistance Track, while a quality improvement specialist was interviewed for the Alignment Track. Several states with multiple bridge organizations had a combined interview with the Medicaid State Liaison to efficiently discuss the Medicaid Agency's interactions and work with each organization.

Two-person teams of qualitative evaluation staff conducted all interviews. All interviews were conducted by phone in 2021. Interviews typically lasted 60 minutes each. All interviews were audio-recorded using handheld digital recorders or audio-conferencing software and then professionally transcribed before analysis.

**Exhibit D-3** lists the number of interviews by stakeholder type within each track and overall.

### Exhibit D-3. Wave 3: Key Informant Interviews by Stakeholder and Track

Stakeholder Type	Assistance Track	Alignment Track	Total
AHC Model leadership	10	18	<b>28</b>
Liaison to the State Medicaid Agency	8 <sup>1</sup>	15 <sup>2</sup>	<b>23<sup>1</sup></b>
Program data specialist	10	NA	<b>10</b>
Quality improvement specialist	NA	18	<b>18</b>
AHC Policy Specialist (not Medicaid Agency) <sup>3</sup>	2	0	<b>2</b>

<sup>1</sup> Notes: State Medicaid Agency interviews were combined for three bridge organizations in Texas, two bridge organizations in Colorado, two bridge organizations in Ohio, and two bridge organizations in Connecticut.

<sup>2</sup> We were unable to complete an interview with a liaison to the State Medicaid Agency or AHC Policy Specialist for one bridge organization.

<sup>3</sup> For two bridge organizations in each track, we interviewed an AHC policy specialist rather than a liaison with the State Medicaid Agency.

Definitions: AHC = Accountable Health Communities; NA = not available.

## Interview Protocols

All planning call, case study, and key informant interviews used standard interview protocols prepared by qualitative and subject matter experts on the evaluation team. The team identified protocol topics using the evaluation research questions, the AHC Model evaluation framework, and discussions with the Innovation Center. Interviewers tailored participant protocols using information from bridge organizations' program documents, including the applications submitted for AHC funding and quarterly progress reports submitted to the Innovation Center, and from interviews that occurred in prior waves (see Program Document Review). Topics for key informant interview protocols also included findings from surveys of AHC stakeholders and AHC program data.

## Interview Data Analysis

We analyzed interview data collected from the three waves of data collection using a qualitative codebook aligned to the AHC Model evaluation research questions, AHC evaluation framework, and the interview protocols. Experienced qualitative analysts trained a staff team to use the codebook and then led pilot exercises that required all analysts to code the same interview and meet to discuss and compare their work. The team then updated the codebook to address ambiguities.

After the pilot exercise, coders received interview assignments and applied codes individually to the remaining interview data. Throughout the coding process, coders met to discuss select interview passages that were confusing or were difficult to code and recommend refinements to the codebook and code definitions. After coders finished their initial assignments, each coder reviewed another coder's work, focusing on the codes applied most and least frequently. Analysts finalized their coding after considering feedback from their code reviewer. Once the coding process was complete, a subset of the coders exported code reports that mapped to report sections.

Subject matter experts divided responsibility for reviewing the coded data and drafting qualitative findings. Analysts received code reports corresponding to their assigned sections of the report. The analysts reviewed data over several months, meeting with one another and the original interviewers to share and refine early findings.

The report identifies themes by the number of bridge organizations with an interviewee who reported about the experience: a few (less than 10%, or two or three), several (between 10% and less than 25%, or four to seven), many (between 25% and 50%, or eight to 15), or most (over 50%, or more than 15).

## Program Document Review

Evaluation staff gleaned additional insights about bridge organizations' approaches to the AHC Model, implementation plans and progress, and community context from program documents shared by the Innovation Center (see **Exhibit D-4**).

## Exhibit D-4. Program Documents

Document Type	Content	Frequency of Production	Track
Application for AHC funding	Implementation plans, community context, key partners, assessment of program duplication	Once	Assistance, Alignment
Progress reports	Implementation progress, lessons learned	Quarterly	Assistance, Alignment
Standard operating procedures	Detailed plans for executing specific model components, such as screening, referral, and navigation activities	Annually	Assistance, Alignment
Assessment of program duplication	Detailed assessment to address how bridge organizations will leverage the existing provision of services and how duplicate payment for services will be avoided.	Annually	Assistance, Alignment
Implementation plans	Detailed implementation plan of organizational structure, flow of funds, intervention framework with key milestones and tasks, workplan and timeline, and risk mitigation strategy	Annually	Assistance, Alignment
Sustainability plans	Action plan to sustain efforts to address HRSNs within communities beyond the AHC Model	Once	Assistance, Alignment
Site visit reports	Implementation progress, partners' involvement, community needs and resources, effects of COVID-19 pandemic on AHC activities, lessons learned, and early impacts of the model	Once in person Once virtually	Assistance, Alignment
QI plans	Processes and measures used to assess quality; strategies for modifying implementation based on QI process findings	Annually	Alignment
Gap analyses	Processes used to identify gaps in community resources; gaps that bridge organizations and their partners identified	Annually	Alignment

Definition: AHC = Accountable Health Communities; COVID-19 = coronavirus disease 2019; HRSN = health-related social need; QI = quality improvement.

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# Appendix E: Community Capacity Components and Definitions

AHC community capacity definition: AHC community capacity is the interplay between resource availability and the community's ability to leverage those resources to meet beneficiaries' health-related social needs.

<b>HRSN resource availability:</b> Describes the services available in an AHC Model community to address beneficiaries' HRSNs; availability and capacity of community service providers (CSPs).	
Participating CSPs	Out of all CSPs in the AHC community, those that are participating in the AHC Model by being connected with or referred to by AHC bridge organizations
CSP availability	Number and type of CSPs in the AHC community; also any identified gaps or lack of availability of CSPs in any HRSN category (food, housing, transportation, utilities, interpersonal violence [IPV])
CSP resources	Resources the CSPs have available to help address residents' needs, such as adequate funding, staffing, physical space, and technology
CSP accessibility	Characteristics that relate to CSP hours of operation, geographic proximity, service eligibility restrictions, language barriers, and/or stigma that may hinder residents from using services. Also, in the COVID-19 environment, access to virtual CSP services
CSP appropriateness and quality	The extent of alignment between residents' needs, identified by screening, and the number and types of CSPs in AHC communities. Specifically, alignment of residents' food, housing, transportation, utilities, and IPV needs with food, housing, transportation, utilities, and IPV CSPs/services

<b>Leveraging HRSN resources:</b> Describes what communities can do with available resources; a community's ability to leverage resources to meet beneficiaries' HRSNs; how the community responds to beneficiaries' HRSNs and the extent to which beneficiaries' HRSNs are being met	
Coordination and networking	To what extent and how well the bridges work with the CSPs in their network; existing and/or enhanced coordination among AHC community stakeholders (between CSPs, between CSPs and bridge organizations); activities to expand or identify new CSPs as partners in an AHC community
Reallocating resources	Adding resources or improving access to existing resources; AHC community mechanisms, strategies, or processes to distribute, redistribute, or generate resources to match specific needs in transportation, food, housing, utilities, and IPV assistance
Tracking navigation and HRSN resolution	AHC community mechanisms, strategies, or processes to measure and track referrals, connection to services, and navigation encounters
Continuous quality improvement	AHC community mechanisms, strategies, or processes to review data on available resources, beneficiary needs, and unmet needs and use those data for ongoing coordination and planning
Service awareness	The extent to which CSPs and other community stakeholders are aware of services available in AHC Model communities; building or improving awareness, for example, through development of online tools or resource directories

## Methods for Measuring Baseline Resource Availability

We identified the number of organizations classified as “social assistance” organizations using North American Industry Classification System (NAICS) codes (code “624”) in counties comprising each bridge organization’s Geographic Target Area (GTA). This number of social service organizations was then divided by the population residing in the respective counties and multiplied by 100,000 to generate the number of social service organizations per 100,000 people in each bridge organization’s GTA, a proxy for overall baseline resource availability in each AHC Model community.

### Data Sources:

- Urban Institute National Center for Charitable Statistics (NCCS) 2017 Core PC (Public Charities) File: Contains information on the entire population of active, reporting tax-exempt (nonprofit) organizations filing a Form 990, 990-EZ, or 990-PF with the Internal Revenue Service in a given year.
  - NCCS Data Guide: <https://nccs-data.urban.org/NCCS-data-guide.pdf>
  - Data Dictionary for NCCS variables: <https://nccs-data.urban.org/dd2.php?close=1&form=Core+2013+PC>
- 2018 county population estimates from the Area Health Resources Files (AHRF obtained them from U.S. Census County Population estimates)

### Analytic Approach:

1. Using the NCCS datafile, we identified organizations classified as “social assistance” organizations using NAICS codes (code “624”)
  - a. NAICS codes list: <https://www.census.gov/naics/?input=62&chart=2017>
2. We then used county Federal Information Processing Series (FIPS) codes in the NCCS data to calculate the number of these organizations for each county represented in the NCCS dataset
3. After obtaining county-level counts of the number of social assistance organizations, we aggregated (summed) organizations in all counties comprising each bridge’s GTA. This value was the numerator for the baseline resource availability estimate. We also aggregated (summed) the population residing in all counties comprising each bridge’s GTA. This value was the denominator for the baseline resource availability estimate.
4. We created ratios of the number of social assistance organizations per population among counties comprising each bridge organization’s GTA.
5. We then multiplied these ratios by 100,000 to standardize the estimates and improve interpretability.

## Results

The final values are ratios representing the number of available social assistance organizations per 100,000 people in each bridge’s GTA, a proxy for overall resource availability in each AHC Model community (see **Exhibit E-1**).

**Exhibit E-1. Ratios Representing Number of Available Social Services Providers per 100,000 People in Each Bridge Organization's GTA**

Bridge Organization ID Number	SAO per 100,000 in GTA
B18	60
B26	38
B03	35
B11	35
B31	32
B30	30
B12	28
B27	27
B25	26
B14	25
B05	24
B29	23
B01	23
B24	22
B08	22
B23	21
B28	21
B20	20
B10	20
B32	20
B19	20
B17	20
B06	19
B02	16
B16	14
B07	13
B04	12
B22	12

Definitions: GTA = Geographic Target Area; ID = identification; SAO = social assistance organizations.

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# Appendix F: Community Service Provider Survey Methods, Responses, and Instrument

## Survey Administration

We surveyed representatives from 687 community service providers (CSPs) to which bridge organizations noted they often or sometimes referred beneficiaries to address their health-related social needs (HRSNs). Bridge organizations provided names, email addresses, telephone numbers, and street addresses for contacts at each CSP. The survey asked about organizational characteristics (type, funding sources, services offered), capacity and resources, and the perceived impact of the COVID-19 pandemic on the organization (see Attachment F-1). We cognitively tested survey questions with four potential respondents and made revisions before survey administration.

Most respondents were the executive director, program director, or chief operating officer of the CSP. For organizations with multiple contacts, we sent the survey to all listed contacts. If multiple individuals at a single CSP responded, we used the first complete response.

We conducted the CSP survey online, with mail and phone follow-up of nonrespondents. The survey was administered from July through November 2020. We received 282 total responses, for a 41% response rate (282/687, 41%). **Exhibit F-1** displays the number of respondents and the percentage of survey respondents represented by each bridge organization.

## Analytic Approach

For data reported in this report, we generated descriptive statistics of survey responses, applying nonresponse weights at the bridge organization level. We used chi-squared tests for categorical variables and *t*-tests for continuous variables to test for significant differences across the Assistance and Alignment Tracks. An alpha level of 0.05 was used for all significance tests, and we applied Bonferroni corrections for multiple comparisons. **Exhibits F-2 through F-6** show frequency distributions of survey responses.

## Results

**Exhibit F-1. Number and Percentage of Respondents by Bridge Organization**

Bridge Organization	Number of Respondents	Percentage of Total Survey Respondents
B01	22	7.8
B02	3	1.06
B03	17	6.03
B04	1	0.35
B05	16	5.67
B06	17	6.03
B07	18	6.38

(continued)

**Exhibit F-1. Number and Percentage of Respondents by Bridge Organization (continued)**

Bridge Organization	Number of Respondents	Percentage of Total Survey Respondents
B08	18	6.38
B10	8	2.84
B11	25	8.87
B12	7	2.48
B13	5	1.77
B14	4	1.42
B16	6	2.13
B17	20	7.09
B18	2	0.71
B19	10	3.55
B20	13	4.61
B22	3	1.06
B23	3	1.06
B24	2	0.71
B25	10	3.55
B26	6	2.13
B27	5	1.77
B28	2	0.71
B29	18	6.38
B30	2	0.71
B31	9	3.19
B32	10	3.55

**Exhibit F-2. Frequency Distribution for Exhibit 4.6**

Overall			
<b>Any housing services checked (Q3)</b>			
<b>Housing</b>	<b>Frequency</b>	<b>Percent</b>	
0	113	42.4442	
1	163	57.5558	
<b>Total</b>	276	100.0000	
Frequency Missing = 6			
<b>q3_4. Food assistance (Which types of services does your organization provide?)</b>			
<b>q3_4</b>	<b>Frequency</b>	<b>Percent</b>	
0	93	34.2369	
<b>Food assistance</b>	183	65.7631	
<b>Total</b>	276	100.0000	
Frequency Missing = 6			

**q3\_9. Interpersonal violence counseling/support (Which types of services does your organization provide?)**

q3_9	Frequency	Percent
0	225	82.0100
Interpersonal violence counseling/support	51	17.9900
<b>Total</b>	<b>276</b>	<b>100.0000</b>

Frequency Missing = 6

**q3\_10. Mental health services (Which types of services does your organization provide?)**

q3_10	Frequency	Percent
0	207	75.3922
Mental health services	69	24.6078
<b>Total</b>	<b>276</b>	<b>100.0000</b>

Frequency Missing = 6

**q3\_14. Transportation assistance (Which types of services does your organization provide?)**

q3_14	Frequency	Percent
0	158	56.8986
Transportation assistance	118	43.1014
<b>Total</b>	<b>276</b>	<b>100.0000</b>

Frequency Missing = 6

**q3\_15. Assistance with paying for utilities, such as person in need grants (Which types of services does your organization provide?)**

q3_15	Frequency	Percent
0	158	59.7841
Assistance with paying for utilities, such as person in need grants	118	40.2159
<b>Total</b>	<b>276</b>	<b>100.0000</b>

Frequency Missing = 6

**Alignment**

**Any housing services checked (Q3)**

Housing	Frequency	Percent
0	60	37.5028
1	93	62.4972
<b>Total</b>	<b>153</b>	<b>100.0000</b>

Frequency Missing = 3

**q3\_4. Food assistance (Which types of services does your organization provide?)**

q3_4	Frequency	Percent
0	55	35.2603
Food assistance	98	64.7397
<b>Total</b>	<b>153</b>	<b>100.0000</b>

Frequency Missing = 3

**q3\_9. Interpersonal violence counseling/support (Which types of services does your organization provide?)**

q3_9	Frequency	Percent
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0	127	83.3332
Interpersonal violence counseling/support	26	16.6668
Total	153	100.0000
Frequency Missing = 3		
<b>q3_10. Mental health services (Which types of services does your organization provide?)</b>		
q3_10	Frequency	Percent
0	117	77.0763
Mental health services	36	22.9237
Total	153	100.0000
Frequency Missing = 3		
<b>q3_14. Transportation assistance (Which types of services does your organization provide?)</b>		
q3_14	Frequency	Percent
0	87	56.4621
Transportation assistance	66	43.5379
Total	153	100.0000
Frequency Missing = 3		
<b>q3_15. Assistance with paying for utilities, such as person in need grants (Which types of services does your organization provide?)</b>		
q3_15	Frequency	Percent
0	90	61.2073
Assistance with paying for utilities, such as person in need grants	63	38.7927
Total	153	100.0000
Frequency Missing = 3		

<b>Assistance</b>			
<b>Any housing services checked (Q3)</b>			
Housing	Frequency	Percent	
0	53	46.9590	
1	70	53.0410	
Total	123	100.0000	
Frequency Missing = 3			
<b>q3_4. Food assistance (Which types of services does your organization provide?)</b>			
q3_4	Frequency	Percent	
0	38	33.3019	
Food assistance	85	66.6981	
Total	123	100.0000	
Frequency Missing = 3			
<b>q3_9. Interpersonal violence counseling/support (Which types of services does your organization provide?)</b>			
q3_9	Frequency	Percent	
0	98	80.8009	
Interpersonal violence counseling/support	25	19.1991	

<b>Total</b>	123	100.0000
<b>Frequency Missing = 3</b>		
<b>q3_10. Mental health services (Which types of services does your organization provide?)</b>		
<b>q3_10</b>	<b>Frequency</b>	<b>Percent</b>
0	90	73.8534
<b>Mental health services</b>	33	26.1466
<b>Total</b>	123	100.0000
<b>Frequency Missing = 3</b>		
<b>q3_14. Transportation assistance (Which types of services does your organization provide?)</b>		
<b>q3_14</b>	<b>Frequency</b>	<b>Percent</b>
0	71	57.2975
<b>Transportation assistance</b>	52	42.7025
<b>Total</b>	123	100.0000
<b>Frequency Missing = 3</b>		
<b>q3_15. Assistance with paying for utilities, such as person in need grants (Which types of services does your organization provide?)</b>		
<b>q3_15</b>	<b>Frequency</b>	<b>Percent</b>
0	68	58.4836
<b>Assistance with paying for utilities, such as person in need grants</b>	55	41.5164
<b>Total</b>	123	100.0000
<b>Frequency Missing = 3</b>		

### Exhibit F-3. Frequency Distribution for Exhibit 4.7

Overall					
Survey Item	Always	Usually	Sometimes	Rarely	Never
My organization had sufficient staffing to effectively deliver services to our clients.	21.4214	50.8159	17.6494	7.5130	2.6003
My organization had sufficient funding to cover the cost of delivering services to our clients.	16.2071	44.7440	22.5952	11.8452	4.6086
Alignment					
Survey Item	Always	Usually	Sometimes	Rarely	Never
My organization had sufficient staffing to effectively deliver services to our clients.	15.7638	51.1521	19.4480	8.8359	4.8003
My organization had sufficient funding to cover the cost of delivering services to our clients.	13.7938	45.0426	23.2749	11.1169	6.7718
Assistance					
Survey Item	Always	Usually	Sometimes	Rarely	Never
My organization had sufficient staffing to effectively deliver services to our clients.	26.5808	50.5094	16.0092	6.3066	0.5941
My organization had sufficient funding to cover the cost of delivering services to our clients.	18.4078	44.4716	21.9755	12.5093	2.6358

### Exhibit F-4. Frequency Distribution for Exhibit 4.8

Weighted percentages of CSPs by number of needs addressed		
Count	Frequency	Percent
1	80	33.0157
2	47	20.1846
3	51	19.4596
4	54	19.5647
5	18	7.7754
<b>Total</b>	<b>250</b>	<b>100.0000</b>
<b>Frequency Missing = 32</b>		

Weighted percentages of CSPs by types of needs addressed		
Needs Addressed	Frequency	Percent
1F	41	15.9145
1H	17	6.2290
1T	15	7.6777
1U	4	1.6783
1V	3	1.5162
2FH	13	6.9989
2FT	4	1.9254
2FU	12	4.7116
2HT	8	3.0276
2HU	3	0.9379
2HV	5	1.6552
2TU	1	0.3617
2VU	1	0.5663
3FHT	14	5.9861
3FHU	21	8.1982
3FHV	4	1.4334
3FTU	3	0.9234
3FVT	1	0.3836
3FVU	1	0.2782
3HTU	4	1.2577
3HVT	1	0.2980
3HVU	2	0.7010
4FHTU	39	14.2379
4FHVT	6	2.3927
4FHVU	5	1.4224
4FVTU	1	0.2877
4HVTU	3	1.2239
5FHVTU	18	7.7754
<b>Total</b>	<b>250</b>	<b>100.0000</b>
<b>Frequency Missing = 32</b>		

Legend

F = Food assistance

H = Housing assistance

T = Transportation assistance

U = Utility assistance

V = Support for interpersonal violence

**Exhibit F-5. Frequency Distribution for Exhibit 4.9**

<b>Overall</b>					
<b>Survey Item</b>	<b>Decreased a Lot</b>	<b>Decreased a Little</b>	<b>Stayed the Same</b>	<b>Increased a Little</b>	<b>Increased a Lot</b>
Community capacity to meet residents' health-related social needs	3.4280	12.1964	26.0472	41.6656	16.6628
<b>Alignment</b>					
<b>Survey Item</b>	<b>Decreased a Lot Since 2017</b>	<b>Decreased a Little Since 2017</b>	<b>Stayed the Same Since 2017</b>	<b>Increased a Little Since 2017</b>	<b>Increased a Lot Since 2017</b>
Community capacity to meet residents' health-related social needs	2.4415	11.6549	21.7928	47.5406	16.5702
<b>Assistance</b>					
<b>Survey Item</b>	<b>Decreased a Lot Since 2017</b>	<b>Decreased a Little Since 2017</b>	<b>Stayed the Same Since 2017</b>	<b>Increased a Little Since 2017</b>	<b>Increased a Lot Since 2017</b>
Community capacity to meet residents' health-related social needs	4.3203	12.6861	29.8952	36.3518	16.7466

**Exhibit F-6. Frequency Distribution for Exhibit 4.10**

<b>q18. How much has COVID-19 impacted your organization? Please consider both negative and positive impacts on client volume, staffing, funding, and services since the pandemic started in March.</b>			
<b>q18</b>	<b>Frequency</b>	<b>Percent</b>	
<b>Severely impacted</b>	132	52.5471	
<b>Moderately impacted</b>	102	38.3822	
<b>Slightly impacted</b>	19	9.0707	
<b>Total</b>	253	100.0000	
<b>Frequency Missing = 29</b>			

## **Attachment F-1. Survey of Community Service Providers**



Accountable Health Communities Model Evaluation  
Community Service Provider Survey

Please return this survey in the enclosed envelope to:

Abt Associates  
10 Fawcett Street, Suite 5  
Cambridge, MA 02138



This survey is about the Accountable Health Communities (AHC) Model, sponsored by the Centers for Medicare & Medicaid Services (CMS). The AHC Model aims to identify and address unmet needs of clients with Medicare and/or Medicaid insurance, such as assistance with housing, food, utilities, interpersonal violence, and transportation.

You are receiving this survey because <Bridge Org> told CMS that they may refer Medicare and Medicaid clients to your organization for services. This survey will help inform CMS about the characteristics of the community service providers in AHC Model communities, how community service providers meet the needs of their clients, and the experiences of community service providers with the AHC Model. **Your responses are important whether or not you are familiar with the AHC Model.**

We value your input, and greatly appreciate your participation! This survey should take about 15 minutes to complete. Participation is voluntary, but we encourage you to participate because your insights will help CMS understand the impact of the AHC Model. The information you provide will be held in confidence. We will combine your answers with those from hundreds of other organizations taking this survey. Your name will not appear in any reports or related studies.

If you have any questions about this survey, please contact us at [AHC@abtassoc.com](mailto:AHC@abtassoc.com) or at 1-8[XX -XXX-XXXX]. You may also contact the CMS Contracting Officer's Representative for the evaluation of the AHC Model, Shannon O'Connor, PhD, at [Shannon.OConnor@cms.hhs.gov](mailto:Shannon.OConnor@cms.hhs.gov).

#### **Instructions:**

- Please read each question carefully and respond by marking the circle next to the response that most closely represents your answer.
- Please mark only one circle for each question, unless indicated to mark all that apply.
- For number boxes, please round your response to the nearest whole number, if necessary. (Do not include numbers with decimal places.)
- You can use a ballpoint pen, but we suggest you use a PENCIL in case you want to change your answer. **Please do NOT use a felt tip pen.**
- This survey can be completed in more than one sitting, if necessary. Please feel free to check with other staff at your organizations as you answer questions, as needed.

## Organization Characteristics and Clients

1. Which of the following best describes your organization? Please select one.
  - Public or governmental
  - Private, for profit
  - Faith-based
  - Non-profit, community-based organization (not faith-based)
  - Other, please specify \_\_\_\_\_
  
2. What types of funding does your organization receive? Please select all that apply.
  - Federal funding
  - State funding
  - Local funding, such as from the county or city
  - Foundation grants
  - Private and/or corporate donations
  - Other, please specify \_\_\_\_\_
  
3. Which types of services does your organization provide? Please select all that apply.
  - Education assistance
  - Employment assistance
  - Financial or cash assistance, such as social security or TANF
  - Food assistance
  - Housing assistance – help with *finding housing*
  - Housing assistance – help with *improving housing quality* (home improvements or needed repairs)
  - Permanent, transitional, or temporary housing
  - Shelter services or emergency housing
  - Interpersonal violence counseling/support
  - Mental health services
  - Physical activities, such as exercise or yoga classes
  - Social support, such as support groups, group activities, or one-on-one outreach
  - Substance use services
  - Transportation assistance
  - Assistance with paying for utilities, such as person in need grants
  - Other, please specify \_\_\_\_\_

4. What is the extent of your organization’s service area?

- Local (city-wide, county-wide, or multiple counties within a state)
- State-wide
- Regional (more than 1 state)
- National

5. How many total service sites (locations) does your organization have?

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6. Please fill in the approximate number of individual clients (unduplicated) that your organization served in the past 12 months. Best estimates are fine.

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7. Please fill in the approximate number of **new** clients your organization served in the past 12 months. By new clients, we mean individuals who had not previously received services from your organization. Best estimates are fine.

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**Staffing and Resources**

8. About how many staff currently work at your organization? Best estimates are fine.

Type	Number
Paid staff	
Unpaid, in-kind, and/or volunteer staff	

Please indicate how often you felt your organization had the following resources in the past 12 months. Please do your best to think about the year as a whole even though COVID-19 may have caused unusual impacts in the last few months.

Survey Question	Always	Usually	Sometimes	Rarely	Never
9. My organization had <i>sufficient staffing</i> to effectively deliver services to our clients.	<input type="radio"/>				
10. My organization had <i>sufficient funding</i> to cover the cost of delivering services to our clients.	<input type="radio"/>				

Survey Question	Always	Usually	Sometimes	Rarely	Never
11. My organization had the necessary <i>partnerships with other organizations</i> to effectively deliver services to our clients.	<input type="radio"/>				

12. Does your organization have a data system to track the services or assistance your organization provides to clients?

- Yes
- No

13. Does your organization have a data system to track the services or assistance your clients receive *from outside your organization*, such as from partner organizations in the community?

- Yes, for all clients and services
- Yes, but only for some clients or services
- No

Please choose the best option for each of the following questions. Would you say the following decreased, stayed the same, or increased *since May 2017*?

Survey Question	Decreased a lot since 2017	Decreased a little since 2017	Stayed the same since 2017	Increased a little since 2017	Increased a lot since 2017
14. Your organization's ability to collaborate with health care organizations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Your organization's ability to resolve clients' needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Coordination among community and social service organizations in your area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Community capacity to meet residents' health-related social needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. How much has COVID-19 impacted your organization? Please consider both negative and positive impacts on client volume, staffing, funding, and services since the pandemic started in March.

- Severely impacted
- Moderately impacted
- Slightly impacted
- Almost no impact
- Don't know

18a. (Optional) Please briefly describe how COVID-19 impacted your organization:

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**Your Organization's Relationship with <Bridge Org>**

The next set of questions are about your organization's relationship with <Bridge Org>.

19. How would you describe the collaborative nature of your organization's and <Bridge Org's> relationship over the past 12 months?

- History of working together often
- History of working together sometimes
- History of working together rarely
- No history of working together in the past 12 months → SKIP TO #21

20. How would you rate your organization's and <Bridge Org's> ability to work together over the past 12 months?

- Work together very well
- Work together fine
- Work together poorly

21. Has your organization received financial support (such as a grant or subcontract) from <Bridge Org> in the past 12 months?

- Yes
- No

22. Did <Bridge Org> refer any clients to your organization in the past 12 months?

- Yes
- No → SKIP TO #27
- Don't know → SKIP TO #27

23. Please fill in the approximate number of clients that <Bridge Org> referred to your organization in the past 12 months. Your best estimate is fine.

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24. Does your organization have a *standardized referral process* (such as a protocol, required form, or standard operating procedure) for <Bridge Org> to use when making referrals?

- Yes

No

25. Do your organization and <Bridge Org> use an *electronic data system* to share client referral information between the two organizations?

Yes

No

26. Please choose the option that best describes how your organization usually receives referrals from <Bridge Org>.

<Bridge Org> tells their clients about your services and leaves it up to the client to make an appointment.

<Bridge Org> completes a standard referral form or application that is submitted to your organization by electronic data system (not by email).

<Bridge Org> completes a standard referral form or application that is sent to your organization by mail, fax, or email.

<Bridge Org> calls your organization to make an appointment for the client.

<Bridge Org> physically escorts the client to your organization to set up an appointment or receive services.

Other, please specify \_\_\_\_\_

### Your Familiarity and Participation with the Accountable Health Communities Model

27. Prior to responding to this survey, how familiar were you with the Accountable Health Communities (AHC) Model sponsored by the Centers for Medicare & Medicaid Services (CMS)? That is, you heard or read about AHC or otherwise know about it, and are aware of what it's trying to accomplish.

- Very familiar with the AHC Model
- Somewhat familiar with the AHC Model
- A little familiar with the AHC Model
- Not at all familiar with the AHC Model → SKIP TO #30

28. During the past 12 months, have you participated in any of the following AHC activities? Please select all that apply.

- Attended meetings or training sessions to learn about the AHC Model
- Participated in AHC planning prior to the AHC Model launch in May 2017
- Participated in ongoing AHC planning or implementation meetings since the AHC Model launch in May 2017
- Served on the AHC Model advisory board
- Worked with AHC Model navigators
- Did not participate in any of these activities → SKIP TO #30
- I don't know → SKIP TO #30

29. Please rate your overall level of satisfaction with the AHC Model.

- Very satisfied
- Somewhat satisfied
- Neither satisfied or dissatisfied
- Somewhat dissatisfied
- Very dissatisfied
- Don't know

30. The AHC Model brings together health care providers and community and social service organizations to identify and address health-related social needs of clients with Medicare and/or Medicaid insurance. Key components of the AHC Model are routinely screening clients for health-related social needs in health care settings, navigating clients to relevant

services in the community to address those needs, and bringing together community stakeholders and health care organizations to improve service coordination. Based on this description of the AHC Model, is your organization *currently participating* in any other similar initiative(s) or effort(s) to bring together health care providers and community and social service organizations?

- Yes → Please name the initiative(s) or effort(s). \_\_\_\_\_  
\_\_\_\_\_
- No
- Don't know

**THANK YOU for taking the time to complete this survey! We greatly value your input.**

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# Appendix G: Beneficiary Survey Methods

## Background

We conducted a survey of Medicare and Medicaid beneficiaries who completed the AHC Model screening and met the eligibility criteria to receive the AHC Model navigation services. Through the survey, we aimed to understand the impact of the AHC Model on beneficiary-reported use of community services to get help for health-related social needs (HRSNs), perceived effectiveness of community services in addressing HRSNs, improvement in HRSNs, and improvement in health and mental health status. We surveyed beneficiaries in the Alignment Track and beneficiaries in the Assistance Track who were randomized to the intervention and control groups.

## Methods

### Instrument

We surveyed beneficiaries roughly 6 months after screening. The survey instrument (see Attachment G-1) included 30 questions in four domains:

- The core HRSNs addressed by the AHC Model: housing, utilities, food, and transportation. Interpersonal safety is a core HRSN, but we did not ask about safety/domestic violence in the survey because of concerns about respondent safety (World Health Organization, 2001).
- Health, stress, and quality of life.
- Use of and experiences with community services.
- Experiences with community services during the COVID-19 pandemic.

**Cognitive testing.** After the draft instrument was developed, we conducted cognitive testing with a convenience sample of 11 volunteer Medicare and Medicaid beneficiaries. The purpose of the cognitive interviews was to assess and improve the clarity and relevance of the survey for AHC beneficiaries. Researchers recruited cognitive testing participants for in-person interviews at three AHC Model clinical delivery sites located in the Chicago, IL, and Richmond, VA, metro areas, in July and August 2019. The cognitive testing protocol was designed to assess the following:

- Do respondents understand each survey question in the manner that it was intended?
- Are the response categories for each survey question appropriate?
- Are the meanings of particular terms unambiguous?

We revised the survey instrument based on findings from the cognitive testing.

### Survey Sample

We selected 22 survey samples (one each month on a rolling basis) roughly 6 months after beneficiaries' initial AHC screening (**Exhibit G-1**). To create the survey sample, we used screening and navigation data files extracted by NewWave (Centers for Medicare & Medicaid Services [CMS] Enterprise Portal contractor) and generated by Mathematica Policy Research (the AHC implementation contractor) using data submitted by bridge organizations. The survey sample included beneficiaries who met the navigation eligibility requirements. For the Assistance Track,

we selected all eligible adult beneficiaries (aged 18 years or older), including both those randomized to the intervention group and the control group.<sup>1</sup> For the Alignment Track, we selected a representative stratified random sample of 300 adult beneficiaries each month, selected separately for each core HRSN.<sup>2</sup>

### Exhibit G-1. Timing of 22 Monthly Survey Waves

Wave	Screening Month	Start of Survey Administration	End of Survey Administration
Wave 1	Apr, May, Jun 2019	1/6/2020	4/28/2020
Wave 2	Jul 2019	1/17/2020	5/8/2020
Wave 3	Aug 2019	2/14/2020	6/5/2020
Wave 4	Sep 2019	3/13/2020	7/3/2020
Wave 5	Oct 2019	4/17/2020	8/7/2020
Wave 6	Nov 2019	5/15/2020	9/4/2020
Wave 7	Dec 2019	6/12/2020	10/2/2020
Wave 8	Jan 2020	7/17/2020	11/6/2020
Wave 9	Feb 2020	8/14/2020	12/4/2020
Wave 10	Mar 2020	9/18/2020	2/5/2021
Wave 11	Apr 2020	10/16/2020	3/5/2021
Wave 12	May 2020	11/13/2020	3/5/2021
Wave 13	Jun 2020	12/18/2020	4/9/2021
Wave 14	Jul 2020	1/15/2021	5/7/2021
Wave 15	Aug 2020	2/12/2021	6/4/2021
Wave 16	Sep 2020	3/12/2021	7/2/2021
Wave 17	Oct 2020	4/16/2021	8/6/2021
Wave 18	Nov 2020	5/14/2021	9/3/2021
Wave 19	Dec 2020	6/18/2021	10/8/2021
Wave 20	Jan 2021	7/16/2021	11/5/2021
Wave 21	Feb 2021	8/13/2021	12/3/2021
Wave 22	Mar 2021	9/17/2021	1/7/2022

### Data Collection

At screening, beneficiaries were asked to provide their address, phone number, and email. We sent surveys by mail and followed up with nonrespondents by phone and email (**Exhibit G-2**). Survey administration for each wave lasted 16 weeks (112 days).

<sup>1</sup> We included beneficiaries in the survey sample regardless of whether they had accepted navigation by the time of the survey, which is consistent with an Intent-to-treat evaluation design.

<sup>2</sup> Beneficiaries with more than one HRSN would have had multiple opportunities to be included in the sample; we adjusted for this using survey sampling weights.

## Exhibit G-2. Survey Administration Protocol for Each Survey Wave

Days in Protocol	Data Collection Stage
1	Mail initial surveys
8	Mail thank you/reminder postcard
14	First email
28	First round of phone follow-up
42	Mail second round of surveys, sent using USPS priority mail in a 9" x 12" envelope
42	Second email
53	Remailings for the initial survey invitations
60	Remailings for the second survey invitations
70	Conduct second round of phone follow-up
70	Third email
112	Close of wave: data collection stops

**Response rates.** Consistent with American Association for Public Opinion Research’s Response Rate 2 (RR2) (American Association for Public Opinion Research, 2016), we calculated adjusted response rates, excluding from the denominator beneficiaries 1) who died after AHC screening, 2) who had no valid contact information,<sup>3</sup> or 3) whose AHC eligibility/timing in the AHC Model screening data had changed because of reconciliation of the AHC Model screening data after we selected the survey sample. Beneficiaries were considered to have responded to the survey if they answered at least one survey question. The adjusted response rate was 26% for the Assistance Track intervention group and 25% for the control group (**Exhibit G-3**); this difference was not statistically significant ( $P = 0.133$ ). The adjusted response rate for the Alignment Track was 24%. Additional information is provided about response rates and factors associated with nonresponse in the section that follows.

## Exhibit G-3. Survey Response Rates, Waves 1–22 Combined

Track	Sampled N <sup>1</sup>	Responded N	Adjusted Response Rate %	Difference Between Intervention and Control %	P-value
Assistance Track intervention group	26,470	6,817	25.8	0.8	0.133
Assistance Track control group	11,123	2,781	25.0		
Alignment Track (intervention group only)	19,878	4,677	23.5	NA	NA

<sup>1</sup>Excludes beneficiaries 1) who had died since AHC screening, 2) who had no valid contact information, or 3) whose AHC eligibility/timing in the AHC Model screening data had changed because of reconciliation of the AHC Model screening data after we selected the survey sample.

Source: AHC Evaluation Beneficiary Survey (January 2020–January 2022).

## Outcome Measures

**HRSN resolution and improvement.** Because resolving HRSNs is a primary aim of the AHC Model, we assessed resolution of HRSNs among survey respondents who had a given HRSN identified at screening. We created the resolution measures by comparing responses to the Screening Tool with responses to similarly worded items in the evaluation survey that was completed 6 to 8 months later. Specifically, for each HRSN included in the survey (living

<sup>3</sup> We considered beneficiaries to have invalid contact information when information from all possible modes of contact was either missing or invalid (e.g., returned mail, wrong phone number, emails bounced back).

situation, utilities, food, transportation), we created a binary measure where survey respondents who indicated the HRSN on the Screening Tool received a value of 1 if their HRSN was resolved at the time of the survey and 0 if their HRSN improved but not to the point of resolution, stayed the same, or declined. **Exhibit G-4** shows the outcome measure categories assigned to each combination of Screening Tool and survey responses. In addition to measures of HRSN resolution, we also assessed measures of HRSN improvement as a sensitivity analysis. The HRSN improvement measures differed from the HRSN resolution measures in that any improvement between the screening and survey was considered a positive outcome, even if the HRSN was not fully resolved (e.g., a food need improved from often worrying about having enough food to sometimes worrying about having enough food). Findings for the resolution measures are presented in the main body of the report, and findings for the improvement measures are presented in this appendix below.

**Use of community services to get help for HRSNs.** We created binary measures reflecting whether respondents reported using community services in the past 6 months for any HRSN and for each HRSN.

**Perceived effectiveness of community services in addressing HRSNs.** We asked beneficiaries who used community services about the effectiveness of those services in meeting their needs. Response options included very effective, quite a bit effective, somewhat effective, a little bit effective, not at all effective, I wanted but could not get these services, and I did not want these services. From this item, we created a categorical measure reflecting whether beneficiaries felt that community services were 1) very or quite a bit effective at meeting their needs; 2) somewhat or a little bit effective; or 3) not at all effective. Respondents who did not use services were excluded from this measure.

**Exhibit G-4. HRSN Items and Response Options Mapped to Outcome Measure Categories**

Outcome Measure Categories	Screening Item and Response Options	Survey Item and Response Options	Included in Resolution and Improvement Measure Denominators?	Value in Resolution and Improvement Measure Numerators
<b>Living Situation</b>	What is your living situation today?	What is your living situation today?		
Improved and resolved	I have a place to live today, but am worried about losing it in the future.	I have a steady place to live.	Yes	Improvement: 1 Resolution: 1
	I do not have a steady place to live.	I have a steady place to live.		
Improved but not resolved	I do not have a steady place to live.	I have a place to live today, but am worried about losing it in the future.		Improvement: 1 Resolution: 0
Maintained lack of need	I have a steady place to live.	I have a steady place to live.	No	n/a
Maintained need or declined	I have a place to live today, but am worried about losing it in the future.	I have a place to live today, but am worried about losing it in the future.	Yes	Improvement: 0 Resolution: 0
	I have a place to live today, but am worried about losing it in the future.	I do not have a steady place to live.		
	I do not have a steady place to live.	I do not have a steady place to live.		
	I have a steady place to live.	I have a place to live today, but am worried about losing it in the future.	No	n/a
	I have a steady place to live.	I do not have a steady place to live.		
<b>Utilities</b>	In the past 12 months, has the electric, gas, oil, or water company threatened to shut off services in your home?	Lately, have you worried about the electric, gas, oil, or water company threatening to shut off services in your home?		
Improved and resolved	Yes	No	Yes	Improvement: 1 Resolution: 1
	Already shut off	No		
Improved but not resolved	Already shut off	Yes		n/a
Maintained lack of need	No	No	No	Improvement: 1 Resolution: 0
Maintained need or declined	Yes	Yes	Yes	Improvement: 0 Resolution: 0
	Yes	Already shut off		
	Already shut off	Already shut off		
	No	Yes	No	n/a
	No	Already shut off		

(continued)

**Exhibit G-4. HRSN Items and Response Options Mapped to Outcome Measure Categories (continued)**

Outcome Measure Categories	Screening Item and Response Options	Survey Item and Response Options	Included in Resolution and Improvement Measure Denominators?	Value in Resolution and Improvement Measure Numerators
<b>Food</b>	Within the past 12 months, you worried that your food would run out before you got money to buy more.	Lately, how often do you worry that your food will run out before you get money to buy more?		
Improved and resolved	Often true	Never	Yes	Improvement: 1 Resolution: 1
	Sometimes true	Never		
Improved but not resolved	Often true	Sometimes		Improvement: 1 Resolution: 0
Maintained lack of need	Never true	Never	No	n/a
Maintained need or declined	Sometimes true	Sometimes	Yes	Improvement: 0 Resolution: 0
	Sometimes true	Often		
	Often true	Often		
	Never true	Sometimes	No	n/a
	Never true	Often		
<b>Transportation</b>	In the past 12 months, has lack of reliable transportation kept you from medical appointments, meetings, work or from getting to things needed for daily living?	Lately, has transportation been a problem for you?		
Improved and resolved	Yes	No transportation challenges identified	Yes	Improvement: 1 Resolution: 1
Maintained lack of need	No	No transportation challenges identified	No	n/a
Maintained need or declined	Yes	At least one transportation challenge	Yes	Improvement: 0 Resolution: 0
	No	At least one transportation challenge	No	n/a

## Overall Analysis

We calculated percentages of respondents for each outcome measure, stratified by track and group (Assistance intervention, Assistance control, Alignment). We weighted estimates to adjust for survey sampling (for the Alignment Track) and nonresponse (for both tracks) and clustered standard errors by bridge organization.

For the Assistance Track, we used logistic regression to compare the intervention and control groups. The regression model included the following variables to adjust for potential differences between intervention and control groups:

- **Demographic characteristics:** Respondent age in 10-year bands, gender, race/ethnicity, and insurance type (Medicare, Medicaid, or dual eligible)
- **HRSNs reported in the initial screening tool:** Binary measure for each of the five core HRSNs reported in beneficiary responses to the initial screening
- **Number of core HRSNs** reported in the initial screening
- **Proxy respondent:** Whether the beneficiary received assistance completing the survey
- **Contextual measures based on beneficiary ZIP codes:**
  - Core-Based Statistical Area type: Metropolitan/micropolitan/rural area<sup>4</sup>
  - Average rate of new COVID-19 cases/100K population in the 14 days prior to the day each survey wave was first mailed (county COVID-19 cases obtained from USA Facts<sup>5</sup>)
  - Median household income (obtained from the American Community Survey)
- Fixed effects for bridge organization and the month we mailed the survey

For the Alignment Track, we did not adjust estimates because we did not make direct comparisons.

## Subpopulation Analysis

We assessed the impact of the AHC Model for subpopulations of interest to identify whether some subpopulations may have benefitted more than others. Subpopulation analyses included only beneficiaries from the Assistance Track intervention and control groups. Alignment Track beneficiaries were not included because we did not construct a survey comparison group for the Alignment Track, and differences between Alignment Track subpopulations alone (without a comparison group) may reflect underlying differences between groups rather than the impact of the AHC Model.

**Selecting subpopulation categories.** As a result of limited statistical power, we either combined or excluded subpopulations with fewer than 100 respondents in the Assistance Track intervention or control group. We analyzed subpopulations defined as follows:

- **By benefit type:** Medicare, Medicaid, dual eligible
- **By housing need reported at screening:** Steady place to live, worried about losing housing, no steady housing
- **By food need reported at screening:** Never worried about food, sometimes worried about food, often worried about food

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<sup>4</sup> <https://www.census.gov/data/tables/time-series/demo/popest/2010s-total-metro-and-micro-statistical-areas.html>

<sup>5</sup> <https://usafacts.org/visualizations/coronavirus-covid-19-spread-map/>

- **By race/ethnicity:** Black/African American, Hispanic/Latino, White
- **By Area Deprivation Index (ADI):** Lower four quintiles vs. highest deprivation quintile
- **By timing of survey response:** Pre-COVID-19 pandemic onset (January to March 2020), post-COVID-19 pandemic onset (April 2020 to July 2021)

**Outcome measures for the subpopulation analysis.** We used similar measures for the subpopulation analysis as used in the analysis of all respondents. Specifically, the subpopulation analysis included the following outcome measures:

- Living situation need resolved among survey respondents who had a living situation HRSN at screening
- Utilities need resolved among survey respondents who had a utilities HRSN at screening
- Food need resolved among survey respondents who had a food HRSN at screening
- Transportation need resolved among survey respondents who had a transportation HRSN at screening
- Used one or more types of community services

**Analytic methods.** Subpopulation analyses were conducted similarly to the overall analyses, separately for each subpopulation group, with the following exceptions. Because median household income is used in constructing the ADI, we excluded the measure of median household income in the subpopulation analysis by high and low ADI.

## Limitations

Analyses of the AHC Beneficiary Survey responses have limitations:

- Roughly a quarter of the sampled beneficiaries completed the survey. Response rates and beneficiary characteristics were broadly similar in the Assistance Track intervention and control groups, and weights and risk-adjustment helped account for nonresponse bias. However, respondents in both groups were older than nonrespondents and were more likely to be Medicare beneficiaries than Medicaid beneficiaries or dually eligible beneficiaries. Although we adjusted for age and benefit type in analyses, to the extent that nonrespondents differed from respondents on other unobservable factors, findings may not generalize to all AHC beneficiaries.
- To minimize respondent burden and maximize response rates, we limited the survey to 24 items. Because of this, we were limited in terms of the number of measures included for assessing resolution of HRSNs and were not able to include in the survey comparable questions for all of the items included in the [screening tool](#). For example, the survey included a question mirroring the screening tool item “Within the past 12 months, you worried that your food would run out before you got money to buy more,” but did not include a similar question for the item “Within the past 12 months, the food you bought just didn't last and you didn't have money to get more.” To the extent that beneficiary responses differed across items that were and were not incorporated into the survey, analyses may reflect a limited perspective on HRSN resolution.
- Although the AHC Model started on May 1, 2017, and ended on April 30, 2022, survey data collection included only beneficiaries screened from April 2019 through March 2021, with surveys administered from January 2020 through January 2022. To the extent that beneficiaries screened and surveyed during this period differed from beneficiaries screened earlier or later during the model, our results may not generalize to the entire period covered by the model.
- Because the AHC Model was voluntary, these results might not be generalizable to all Medicare or Medicaid beneficiaries and their communities.

# Findings

## Balance Between the Assistance Track Intervention and Control Groups

To assess balance between the Assistance Track intervention and control groups, we calculated standardized mean differences between the groups for available beneficiary- and population-level measures (**Exhibit G-5**). We used a standardized mean difference of 0.25 to assess balance between the matched intervention and control groups (Garrido et al., 2014). Standardized differences for nearly all covariates were <0.25 and typically under 0.10 with the exception of a few categories with very small sample sizes (e.g., race/ethnicity group = Asian, Hawaiian or Pacific Islander). The Assistance Track intervention and control respondent groups were well balanced across a broad set of beneficiary and population-level characteristics.

**Exhibit G-5. Characteristics of Survey Respondents by Track and Randomization Group**

Category	Assistance Intervention		Assistance Control		Difference	Standardized Mean Difference	Alignment Track	
	n	%	n	%			n	%
<b>Age</b>								
26 or younger	406	12.6	155	12.2	0.4	0.032	294	12.5
27 to 34	573	15.1	238	16.0	-0.9	-0.060	451	16.4
35 to 44	892	17.3	358	17.1	0.2	0.010	650	17.0
45 to 54	1,186	16.2	503	16.6	-0.4	-0.023	1,002	18.9
55 to 64	1,662	17.7	671	17.8	-0.1	-0.006	1,231	19.8
65 to 74	1,210	12.2	480	11.6	0.7	0.059	682	9.9
75 or older	888	8.9	376	8.7	0.1	0.015	367	5.5
<b>Gender</b>								
Female	4,455	63.7	1,870	67.0	-3.3	-0.051	3,059	63.3
Male	2,270	34.6	872	31.5	3.1	0.094	1,405	31.0
Missing	92	1.6	39	1.5	0.2	0.166	213	5.7
<b>Race/ethnicity</b>								
Asian, Hawaiian or Pacific-Islander	35	0.6	22	0.8	-0.2	-0.469 <sup>1</sup>	80	1.6
Black or African American	1,383	21.5	526	20.4	1.1	0.053	1,197	25.2
Hispanic or Latino	694	12.0	288	12.0	0.0	-0.002	651	16.4
White	3,935	52.3	1,609	51.6	0.7	0.013	1,864	34.7
Other or multiple	134	2.7	52	2.6	0.1	0.054	215	5.3
Missing	636	10.9	284	12.6	-1.6	-0.150	670	16.7
<b>Benefit</b>								
Medicare	1,810	19.6	756	19.2	0.4	0.020	956	14.7
Medicaid	3,592	64.8	1,480	66.0	-1.2	-0.019	3,088	75.9
Dual eligible	1,412	15.6	543	14.7	0.9	0.058	633	9.4
Missing	3	0.0	2	0.0	0.0	-0.064	2	0.1
<b>Education</b>								
Less than high school	11,87	17.7	457	15.7	2.0	0.120	773	17.3
High school or equivalent	2,142	33.7	871	34.0	-0.3	-0.010	1,152	26.3
Some college	1,228	17.9	503	17.9	0.1	0.004	885	17.7
College graduate	431	5.2	183	5.2	0.0	0.009	301	4.8
Missing	1,829	25.4	767	27.2	-1.8	-0.070	1,566	33.8

(continued)

**Exhibit G-5. Characteristics of Survey Respondents by Track and Randomization Group (continued)**

Category	Assistance Intervention		Assistance Control		Difference	Standardized Mean Difference	Alignment Track	
	n	%	n	%			n	%
<b>Self-reported household income</b>								
Less than \$15,000	2,054	31.4	863	31.7	-0.3	-0.010	2,122	44.6
\$15,000 to \$24,999	716	10.0	283	9.8	0.1	0.015	408	8.7
\$25,000 to \$49,999	438	6.6	167	6.1	0.4	0.075	253	5.3
\$50,000 or more	174	2.3	54	1.5	0.7	0.493 <sup>1</sup>	84	1.8
Missing	3,435	49.8	1,414	50.8	-1.0	-0.021	1,810	39.6
<b>Number of core HRSNs at screening</b>								
1 core HRSN	3,419	46.3	1,289	42.2	4.2	0.093	1,463	38.0
2 core HRSNs	1,912	28.6	766	29.2	-0.7	-0.023	1,470	31.3
3+ core HRSNs	1,486	25.1	726	28.6	-3.5	-0.136	1,744	30.6
<b>Screening item: What is your living situation today?</b>								
Steady place to live	5,378	75.4	2,200	76.1	-0.7	-0.010	3,205	68.7
Worried about losing housing	990	16.7	392	15.6	1.1	0.070	936	19.8
No steady housing	396	7.2	158	7.3	-0.1	-0.016	474	10.3
Missing	53	0.7	31	1.0	-0.3	-0.686 <sup>1</sup>	62	1.2
<b>Screening item: In the past 12 months, have utilities companies threatened to shut off services?</b>								
No	4,673	65.6	1,867	64.0	1.6	0.025	2,754	65.4
Yes	1,967	31.6	822	32.4	-0.7	-0.024	1,723	30.6
Already shut off	82	1.2	43	1.8	-0.6	-0.690 <sup>1</sup>	111	1.9
Missing	95	1.5	49	1.8	-0.3	-0.350 <sup>1</sup>	89	2.2
<b>Screening item: Within the past 12 months, you worried that your food would run out before you got money to buy more</b>								
Never true	2,945	42.1	1,189	41.5	0.7	0.016	1,582	34.2
Sometimes true	2,462	36.4	984	35.5	1.0	0.027	1,928	42.8
Often true	1,361	20.8	586	22.3	-1.5	-0.073	1,121	22.0
Missing	49	0.7	22	0.8	-0.1	-0.255 <sup>1</sup>	46	1.0
<b>Screening item: In the past 12 months, has lack of reliable transportation been a barrier?</b>								
No	3,929	55.8	1,639	58.2	-2.4	-0.042	2,378	55.5
Yes	2,818	43.1	1,114	40.8	2.3	0.055	2,226	43.0
Missing	70	1.1	28	1.0	0.1	0.229	73	1.5
<b>Screening item: Any indication of safety HRSN</b>								
No safety HRSN	6,544	95.2	2,658	94.4	0.8	0.009	4,001	90.7
Indication of safety HRSN	264	4.6	118	5.4	-0.7	-0.171	661	9.0
Missing	9	0.1	5	0.2	-0.1	-0.231	15	0.3

(continued)

**Exhibit G-5. Characteristics of Survey Respondents by Track and Randomization Group (continued)**

Category	Assistance Intervention		Assistance Control		Difference	Standardized Mean Difference	Alignment Track	
	n	%	n	%			n	%
<b>Proxy respondent</b>								
Responded by self	4,549	85.7	1,837	86.0	-0.2	-0.003	3,167	87.7
Had help responding	680	12.6	293	12.8	-0.2	-0.016	391	10.8
Missing	93	1.7	30	1.2	0.4	0.462 <sup>1</sup>	55	1.5
<b>Timing of survey response</b>								
Prior to the COVID-19 pandemic (Jan. 2020 to Mar. 2020)	1,249	24.3	462	22.3	2.0	0.084	920	25.0
Early in the COVID-19 pandemic (Apr. 2020 to Jul. 2021)	5,568	81.5	2,319	83.1	-1.6	-0.019	3,757	81.8
<b>Metropolitan, micropolitan, or rural area</b>								
Metropolitan	5,461	82.0	2,217	81.9	0.1	0.001	4,215	90.8
Micropolitan	639	8.6	254	8.2	0.4	0.049	241	4.8
Rural	716	9.4	310	9.8	-0.5	-0.053	221	4.4
<b>Area Deprivation Index quintiles</b>								
Quintile 1	239	3.1	108	3.3	-0.2	-0.077	221	4.1
Quintile 2	1,296	18.7	501	17.5	1.3	0.071	781	16.4
Quintile 3	1,459	22.4	589	21.9	0.4	0.020	1,174	25.4
Quintile 4	2,254	32.8	873	32.3	0.5	0.014	1,375	29.9
Quintile 5	1,527	22.4	692	24.5	-2.1	-0.091	1,077	23.4
Missing	42	0.6	18	0.5	0.1	0.197	49	0.8
<b>COVID-19 cases/100K population in the last 14 days by county when each survey wave was administered</b>								
No COVID-19 cases	1511	22.3	602	21.9	0.4	0.020	1099	22.5
>0 to 9 cases/100K	2,083	30.2	901	31.2	-1.0	-0.034	1,490	31.8
10 to 29 cases/100K	1,919	30.2	769	29.4	0.8	0.028	1,137	26.2
30 to 49 cases/100K	487	6.8	192	6.3	0.5	0.074	478	10.3
50+ cases/100K	816	10.5	317	11.2	-0.7	-0.068	473	9.2
<b>ZIP code-level median household income</b>								
Less than \$30,000	539	7.8	203	7.0	0.8	0.107	584	12.9
\$30,000 to \$49,999	3,259	48.4	1,340	49.2	-0.9	-0.018	1,767	38.1
\$50,000 to \$69,999	1,608	23.7	699	25.5	-1.8	-0.077	1,441	31.2
\$70,000 to \$99,999	1,128	16.3	407	14.1	2.2	0.144	772	15.6
\$100,000 or more	283	3.91	132	4.2	-0.2	-0.069	113	2.2

<sup>1</sup>Absolute value of the standardized mean difference > 0.25.

Source: AHC Evaluation Beneficiary Survey (January 2020–January 2022).

Definitions: AHC = Accountable Health Communities; COVID-19 = coronavirus disease 2019; HRSN = health-related social need.

Other Notes: Includes beneficiaries screened from April 2019–March 2021, surveyed roughly 6 months after their initial screening. Estimates were weighted to adjust for survey sampling and nonresponse.

## Nonresponse Analysis

**Exhibit G-6** shows differences in average beneficiary and population characteristics between survey respondents and nonrespondents, for the Assistance Track intervention and control groups. We also calculated the difference-in-differences (D-in-D) between respondents and nonrespondents in the Assistance Track intervention and control groups to assess whether patterns of nonresponse were similar for the two groups.

In both the Assistance Track intervention and control groups, respondents were older than nonrespondents and were more likely to be Medicare beneficiaries than Medicaid beneficiaries or dually eligible. Patterns of standardized mean differences between respondents and nonrespondents were similar for the Assistance Track intervention and control groups, and the D-in-D values were not statistically significant at the 0.05 level.

**Exhibit G-6. Assistance Track Intervention and Control Group Nonresponse Analysis**

Characteristics	Assistance Intervention				Assistance Control				D-in-D	P-Value
	N	Respondents, %	Non-respondents, %	Standardized Difference	N	Respondents, %	Non-respondents, %	Standardized Difference		
<b>Age</b>										0.916
26 or younger	3,472	6.0	15.6	-0.315 <sup>1</sup>	1,491	5.6	16.0	-0.341 <sup>1</sup>	0.8	
27 to 34	3,988	8.4	17.4	-0.270 <sup>1</sup>	1,684	8.6	17.3	-0.264 <sup>1</sup>	-0.2	
35 to 44	4,508	13.1	18.4	-0.146	1,863	12.9	18.0	-0.143	-0.1	
45 to 54	4,399	17.4	16.3	0.028	1,896	18.1	16.7	0.037	-0.3	
55 to 64	4,605	24.4	15.0	0.238	1,953	24.1	15.4	0.221	0.6	
65 to 74	3,240	17.7	10.3	0.215	1,283	17.3	9.6	0.225	-0.2	
75 or older	2,258	13.0	7.0	0.203	953	13.5	6.9	0.219	-0.5	
<b>Gender</b>										0.661
Female	17,111	65.4	64.4	0.020	7,320	67.2	65.3	0.040	-1.0	
Male	8,946	33.3	34.0	-0.014	3,632	31.4	33.1	-0.037	1.1	
Missing	413	1.3	1.6	-0.023	171	1.4	1.6	-0.015	-0.1	
<b>Race/ethnicity</b>										0.965
Asian, Hawaiian, or Pacific Islander	149	0.5	0.6	-0.009	81	0.8	0.7	0.010	-0.2	
Black or African American	6,140	20.3	24.2	-0.094	2,447	18.9	23.0	-0.101	0.2	
Hispanic or Latino	3,046	10.2	12.0	-0.057	1,273	10.4	11.8	-0.046	-0.3	
White	13,610	57.7	49.2	0.171	5,773	57.9	49.9	0.160	0.6	
Other or multiple	755	2.0	3.2	-0.076	315	1.9	3.2	-0.082	0.1	
Missing	2,770	9.3	10.9	-0.051	1,234	10.2	11.4	-0.038	-0.4	
<b>Benefit</b>										0.524
Medicare	5,044	26.6	16.5	0.248	2,055	27.2	15.6	0.286 <sup>1</sup>	-1.5	
Medicaid	17,448	52.7	70.5	-0.373 <sup>1</sup>	7,456	53.2	71.6	-0.387 <sup>1</sup>	0.6	
Dual eligible	3,971	20.7	13.0	0.207	1,607	19.5	12.8	0.185	0.9	
Missing	7	0.0	0.0	0.013	5	0.1	0.0	0.015	0.0	
<b>Education</b>										0.763
Less than high school	4,769	17.4	18.2	-0.021	1,990	16.4	18.4	-0.051	1.1	
High school or equivalent	9,017	31.4	35.0	-0.076	3,798	31.3	35.1	-0.080	0.2	
Some college	4,868	18.0	18.5	-0.013	2,036	18.1	18.4	-0.008	-0.2	
College graduate	1,327	6.3	4.6	0.078	551	6.6	4.4	0.095	-0.4	
Missing	6,489	26.8	23.7	0.072	2,748	27.6	23.7	0.088	-0.7	

(continued)

**Exhibit G-6. Assistance Track Intervention and Control Group Nonresponse Analysis (continued)**

Characteristics	Assistance Intervention				Assistance Control				D-in-D	P-Value
	N	Respondents, %	Non-respondents, %	Standardized Difference	N	Respondents, %	Non-respondents, %	Standardized Difference		
<b>Self-reported household income</b>										0.279
Less than \$15,000	8,350	30.1	32.0	-0.041	3,616	31.0	33.0	-0.042	0.1	
\$15,000 to \$24,999	2,782	10.5	10.5	0.000	1,178	10.2	10.7	-0.018	0.5	
\$25,000 to \$49,999	1,669	6.4	6.3	0.007	680	6.0	6.1	-0.006	0.3	
\$50,000 or more	508	2.6	1.7	0.059	204	1.9	1.8	0.011	0.7	
Missing	13,161	50.4	49.5	0.018	5,445	50.8	48.3	0.050	-1.6	
<b>Number of core HRSNs at screening</b>										0.190
1 core HRSN	12,291	50.2	45.1	0.100	4,739	46.4	41.4	0.101	0.0	
2 core HRSNs	7,580	28.0	28.8	-0.018	3,274	27.5	30.1	-0.056	1.7	
3+ core HRSNs	6,599	21.8	26.0	-0.099	3,110	26.1	28.6	-0.055	-1.7	
<b>Screening item: What is your living situation today?</b>										0.506
Steady place to live	19,476	79.4	72.3	0.166	8,141	78.8	72.1	0.157	0.4	
Worried about losing housing	4,265	14.7	16.8	-0.058	1,782	15.2	16.4	-0.033	-0.9	
No steady housing	2,534	6.0	10.9	-0.180	1,117	6.0	11.5	-0.196	0.5	
<b>Screening item: In the past 12 months, have utilities companies threatened to shut off services?</b>										0.231
No	16,899	69.4	63.5	0.126	6,939	66.9	62.3	0.096	1.4	
Yes	8,694	29.4	34.9	-0.118	3,818	31.5	36.1	-0.098	-0.9	
Already shut off	407	1.2	1.7	-0.036	175	1.6	1.6	0.004	-0.5	
<b>Screening item: Within the past 12 months, you worried that your food would run out before you got money to buy more</b>										0.813
Never true	11,213	43.7	42.3	0.028	4,474	40.9	40.3	0.012	0.8	
Sometimes true	9,480	36.2	36.0	0.005	3,991	36.5	35.9	0.012	-0.3	
Often true	5,600	20.1	21.7	-0.040	2,606	22.7	23.8	-0.027	-0.5	
<b>Screening item: In the past 12 months, has lack of reliable transportation been a barrier?</b>										0.163
No	15,136	58.1	57.5	0.012	6,117	57.2	54.8	0.049	-1.8	
Yes	11,101	41.9	42.5	-0.012	4,921	42.8	45.2	-0.049	1.8	

(continued)

**Exhibit G-6. Assistance Track Intervention and Control Group Nonresponse Analysis (continued)**

Characteristics	Assistance Intervention				Assistance Control				D-in-D	P-Value
	N	Respondents, %	Non-respondents, %	Standardized Difference	N	Respondents, %	Non-respondents, %	Standardized Difference		
<b>Screening item: Any indication of safety HRSN</b>										0.388
No safety HRSN	25,196	96.1	94.9	0.058	10,538	95.3	94.6	0.033	0.5	
Indication of safety HRSN	1,274	3.9	5.1	-0.058	585	4.7	5.4	-0.033	-0.5	
<b>Metropolitan, micropolitan, or rural area</b>										0.152
Metropolitan	21,875	80.1	83.5	-0.088	9,042	79.7	81.8	-0.053	-1.3	
Micropolitan	2,148	9.4	7.7	0.061	995	9.1	8.9	0.009	1.4	
Rural	2,445	10.5	8.8	0.058	1,085	11.1	9.3	0.061	-0.1	
<b>ADI quintiles</b>										0.352
Quintile 1	831	3.5	3.0	0.028	367	3.9	3.1	0.042	-0.3	
Quintile 2	4,536	19.0	16.5	0.066	1,866	18.0	16.4	0.044	0.9	
Quintile 3	5,661	21.4	21.4	0.001	2,399	21.2	21.7	-0.013	0.5	
Quintile 4	9,133	33.1	35.0	-0.041	3,759	31.4	34.6	-0.068	1.3	
Quintile 5	6,181	22.4	23.7	-0.030	2,672	24.9	23.7	0.027	-2.4	
Missing	128	0.6	0.4	0.025	60	0.6	0.5	0.019	0.0	
<b>COVID-19 cases/100K population in the last 14 days by county when each survey wave was administered</b>										0.771
No COVID-19 cases	5,586	22.2	20.7	0.035	2,212	21.6	19.3	0.058	-0.9	
>0 to 9 cases/100K	7,804	30.6	29.1	0.032	3,421	32.4	30.2	0.047	-0.7	
10 to 29 cases/100K	8,177	28.2	31.8	-0.081	3,444	27.7	32.1	-0.097	0.7	
30 to 49 cases/100K	1,796	7.1	6.7	0.019	763	6.9	6.8	0.002	0.4	
50+ cases/100K	3,105	12.0	11.6	0.010	1,282	11.4	11.6	-0.005	0.5	
<b>ZIP code-level median household income</b>										0.089
Less than \$30,000	2,306	7.9	9.0	-0.039	945	7.3	8.9	-0.059	0.5	
\$30,000 to \$49,999	12,907	47.8	49.1	-0.026	5,465	48.2	49.4	-0.025	0.0	
\$50,000 to \$69,999	6,480	23.6	24.8	-0.028	2,769	25.1	24.8	0.007	-1.5	
\$70,000 to \$99,999	3,755	16.5	13.4	0.089	1,521	14.6	13.4	0.037	1.9	
\$100,000 or more	1,022	4.2	3.8	0.020	423	4.7	3.5	0.063	-0.9	

<sup>1</sup>Absolute value of the standardized mean difference > 0.25.

\*\*P < 0.05.

Source: AHC Evaluation Beneficiary Survey (January 2020–January 2022).

Definitions: AHC = Accountable Health Communities; COVID-19 = coronavirus disease 2019; D-in-D = difference-in-differences; HRSN = health-related social need.

Other Notes: Includes beneficiaries screened from April 2019–March 2021, surveyed roughly 6 months after their initial screening.

## Improvement and Resolution in HRSNs

### ***Survey Respondents in the Alignment Track, Assistance Track Intervention Group, and Assistance Track Control Group Reported Similar Improvement in HRSNs 6 Months After Screening***

In addition to measures of HRSN resolution reported in Chapter 7, we assessed measures of HRSN improvement as a sensitivity analysis. Respondents in the Assistance Track and Alignment Track with each HRSN at the time of screening reported similar rates of improvement in their HRSNs, and we found no statistically significant differences in improvement in HRSNs between the Assistance Track intervention and control groups (**Exhibit G-7**). For example, among respondents who at the time of screening did not have a steady place to live or were worried about their living situation, over half reported improvement in their housing at the time of the follow-up survey. Similarly, among respondents who at the time of screening were often or sometimes worried that food would run out before they got money to buy more, roughly a third reported improvement in their food need at the time of the follow-up survey.

**Exhibit G-7. Resolution of or Improvement in HRSNs Among Survey Respondents Who Had Each HRSN at Screening**

Resolution of or Improvement In HRSNs	Assistance Track					Alignment Track	
	Intervention		Control		Difference	n	%
	n	%	n	%	%		
<b>Resolution of HRSNs</b>							
Now has a steady place to live	1,299	46.5	515	46.6	-0.1	1,332	44.8
No longer worried about utilities	1,952	48.2	830	46.3	1.9	1,755	45.8
No longer worried that food will run out	3,671	25.1	1,522	25.6	-0.5	2,929	23.3
No longer reporting transportation challenges	2,651	44.6	1,067	42.7	1.8	2,111	42.4
<b>Improvement in HRSNs</b>							
Improvement in housing need	1,299	55.5	515	57.1	-1.6	1,332	52.9
Improvement in utilities need	1,952	49.3	830	47.9	1.5	1,755	48.1
Improvement in food need	3,671	39.0	1,522	38.5	0.5	2,929	35.9
Improvement in transportation need	2,651	44.6	1,067	42.7	1.8	2,111	42.4

Source: AHC Evaluation Beneficiary Survey (January 2020–January 2022).

Definitions: AHC = Accountable Health Communities; HRSN = health-related social need.

Other Notes: Includes beneficiaries screened from April 2019–March 2021, surveyed roughly 6 months after their initial screening. Estimates for the Assistance Track were weighted to adjust for survey nonresponse and regression adjusted to control for any potential differences between the intervention and control groups remaining after randomization. Estimates for the Alignment Track were weighted for survey sampling and nonresponse but were not regression adjusted because we did not compare responses from Alignment Track beneficiaries with a comparison group. The analyses for each HRSN included only beneficiaries reporting each need in the initial screening (i.e., housing, utilities, food, or transportation).

## Use and Effectiveness of Community Services

**Exhibit G-8** shows beneficiary responses about use of community services by type of need for survey respondents in the Assistance Track intervention and control groups and for survey respondents in the Alignment Track, and ratings of the effectiveness of community services for these three groups.

**Exhibit G-8. Survey Respondent Use of Community Services and Perceptions About Effectiveness of Community Services in Meeting Needs**

Use or Effectiveness of Community Services	Assistance Track					Alignment Track	
	Intervention		Control		Difference	Track	
	n	%	n	%	%	n	%
<b>Use of community services</b>							
For any need	6,402	50.9	2,644	51.5	-0.6	4,379	54.6
For housing needs	1,290	21.0	541	23.4	-2.4	1,311	22.0
For utilities needs	1,931	30.4	862	29.4	1.0	1,730	29.7
For food needs	3,566	39.8	1,562	43.3	-3.5	2,868	39.9
For transportation needs	2,634	23.8	1,123	21.8	1.9	2,086	26.0
<b>Effectiveness of community services</b>							
Very or quite a bit effective	1,619	48.5	658	48.6	-0.2	1,211	48.0
Somewhat or a little bit effective	1,255	39.7	501	38.9	0.8	1,042	40.8
Not at all effective	421	11.8	165	12.5	-0.6	307	11.2

Source: AHC Evaluation Beneficiary Survey (January 2020–January 2022).

Definitions: AHC = Accountable Health Communities; HRSN = health-related social need.

Other Notes: Includes beneficiaries screened from April 2019–March 2021, surveyed roughly 6 months after their initial screening. Estimates for the Assistance Track were weighted to adjust for survey nonresponse and regression adjusted to control for any potential differences between the intervention and control groups remaining after randomization. Estimates for the Alignment Track were weighted for survey sampling and nonresponse but were not regression adjusted because we did not compare responses from Alignment Track beneficiaries with a comparison group. The analyses for each HRSN included only beneficiaries reporting each need in the initial screening (i.e., housing, utilities, food, or transportation).

## Subpopulation Analysis

**Response rates.** We found few statistically significant differences in response rates among subpopulations in the Assistance Track intervention and control groups (**Exhibit G-9**). Assistance Track intervention group beneficiaries in the lower four ADI quintiles were significantly more likely to respond to the survey than were similar Assistance Track beneficiaries in the control group (26.0% vs. 24.7%,  $P = 0.02$ ). However, while statistically significant, the difference was relatively small (1.3 percentage points).

## Exhibit G-9. Response Rates and Sample Sizes for the Subpopulation Analysis, by Population

Measures	Response Rate, %				Survey Responses, n	
	Intervention	Control	Difference	P-Value	Intervention	Control
<b>Benefit</b>						
Medicare	35.9%	36.8%	-0.9%	0.472	1,810	756
Medicaid	20.6%	19.8%	0.7%	0.186	3,592	1,480
Dual eligible	35.6%	33.8%	1.8%	0.210	1,412	543
<b>Housing need at screening</b>						
Steady place to live	27.6%	26.8%	0.9%	0.142	5,378	2,200
Worried about losing housing	23.2%	22.8%	0.5%	0.690	990	392
No steady housing	15.7%	14.7%	1.0%	0.466	396	158
<b>Food need at screening</b>						
Never worried about food	26.3%	25.6%	0.7%	0.369	2,945	1,189
Sometimes worried about food	26.0%	24.9%	1.1%	0.186	2,462	984
Often worried about food	24.3%	23.9%	0.4%	0.704	1,361	586
<b>Race/ethnicity<sup>1</sup></b>						
Black or African American	20.8%	19.6%	1.2%	0.240	1,148	431
Hispanic or Latino	23.4%	22.7%	0.7%	0.598	802	319
White	28.5%	27.2%	1.2%	0.093*	3,493	1,419
<b>ADI<sup>2</sup></b>						
Lower 4 ADI quintiles	26.0%	24.7%	1.3%	0.017**	5,248	2,071
Highest ADI quintile	24.7%	25.9%	-1.2%	0.234	1,527	692
<b>Timing of survey response</b>						
Jan–Mar 2020 (prepandemic)	3	3	3	3	1,249	462
Apr 2020–Jul 2021 (postpandemic)	3	3	3	3	5,868	2,444

<sup>1</sup>Beneficiaries with other race/ethnicity excluded from analysis due to small sample size and unreliable estimates.

<sup>2</sup>Four Assistance Track bridge organizations had no beneficiaries in the highest quintile ADI.

<sup>3</sup>Could not calculate response rates by timing of survey response because nonrespondents did not have values for this subpopulation measure.

\*\*P < 0.05; \*P < 0.10.

Source: AHC Evaluation Beneficiary Survey (January 2020–January 2022).

Definitions: ADI = Area Deprivation Index; AHC = Accountable Health Communities.

Other Notes: Includes beneficiaries screened from April 2019–March 2021, surveyed roughly 6 months after their initial screening in the Assistance Track intervention and control group beneficiaries.

**Results.** Exhibits G-10 through G-14 show subpopulation results for the six outcome measures (each table shows one outcome measure).

**Exhibit G-10. Subpopulation Analysis Findings: Living Situation HRSN Resolution<sup>1</sup>  
Among Survey Respondents Who Had a Living Situation HRSN at  
Screening**

Subpopulations	Sample Size, n		Living Situation Need Resolved,** %			P-Value
	Assistance Intervention	Assistance Control	Assistance Intervention	Assistance Control	Difference	
<b>Benefit</b>						
Medicare	2	2				
Medicaid	886	344	45.2	43.4	1.8	0.126
Dual eligible	2	2				
<b>Housing need at screening</b>						
Steady place to live	2	2				
Worried about losing housing	934	369	48.1	48.8	-0.7	0.648
No steady housing	365	146	42.8	41.4	1.4	0.735
<b>Food need at screening</b>						
Never worried about food	431	177	52.4	50.8	1.6	0.701
Sometimes worried about food	476	173	50.3	51.3	-1.0	0.729
Often worried about food	384	162	36.1	36.8	-0.7	0.823
<b>Race/ethnicity</b>						
Black or African American	2	2				
Hispanic or Latino	2	2				
White	510	209	45.5	45.8	-0.3	0.953
<b>ADI</b>						
Lower 4 ADI quintiles	1,017	411	46.5	47.1	-0.6	0.707
Highest ADI quintile	272	101	46.7	44.0	2.7	0.269
<b>Time of survey response</b>						
Jan–Mar 2020 (prepandemic)	2	2				
Apr 2020–Jul 2021 (postpandemic)	1,094	436	47.6	46.1	1.6	0.196

<sup>1</sup>Living situation HRSN resolution was achieved when respondents who had a living situation HRSN at screening reported that they had a steady place to live at the time of the survey. <sup>2</sup>Excluded because the intervention and/or control groups did not have at least 100 respondents.

\*\*P < 0.05; \*P < 0.10.

Source: AHC Evaluation Beneficiary Survey (January 2020–January 2022).

Definitions: ADI = Area Deprivation Index; AHC = Accountable Health Communities; HRSN = health-related social need.

Other Notes: Includes beneficiaries screened from April 2019–March 2021, surveyed roughly 6 months after their initial screening in the Assistance Track intervention and control group beneficiaries. Estimates were weighted to adjust for survey nonresponse and regression adjusted to control for any potential differences between the intervention and control groups remaining after randomization.

**Exhibit G-11. Subpopulation Analysis Findings: Utilities HRSN Resolution<sup>1</sup> Among Survey Respondents Who Had a Utilities HRSN at Screening**

Subpopulations	Sample Size, n		Utilities Need Resolved,** %			P-Value
	Assistance Intervention	Assistance Control	Assistance Intervention	Assistance Control	Difference	
<b>Benefit</b>						
Medicare	390	172	54.6	52.0	2.6	0.508
Medicaid	1,162	516	47.1	44.7	2.4	0.316
Dual eligible	398	142	47.7	49.4	-1.7	0.623
<b>Housing need at screening</b>						
Steady place to live	1,440	619	48.0	48.6	-0.6	0.802
Worried about losing housing	414	170	45.0	40.2	4.8	0.453
No steady housing	2	2				
<b>Food need at screening</b>						
Never worried about food	735	300	51.7	55.2	-3.5	0.441
Sometimes worried about food	678	281	50.2	43.5	6.7	0.017**
Often worried about food	531	244	40.9	37.5	3.4	0.336
<b>Race/ethnicity</b>						
Black or African American	350	144	60.1	61.2	-1.1	0.643
Hispanic or Latino	243	113	43.3	43.9	-0.6	0.925
White	830	345	40.5	37.2	3.3	0.374
<b>ADI</b>						
Lower 4 ADI quintiles	1,467	581	46.7	45.3	1.4	0.568
Highest ADI quintile	477	240	52.4	48.1	4.3	0.235
<b>Time of survey response</b>						
Jan–Mar 2020 (prepandemic)	300	110	40.6	41.3	-0.7	0.897
Apr 2020–Jul 2021 (postpandemic)	1,652	720	49.5	47.2	2.3	0.299

<sup>1</sup>Utilities HRSN resolution was achieved when respondents who had a utilities HRSN at screening reported that they were not worried about their utilities being shut off at the time of the survey. <sup>2</sup>Excluded because the intervention and/or control groups did not have at least 100 respondents.

\*\*P < 0.05; \*P < 0.10.

Source: AHC Evaluation Beneficiary Survey (January 2020–January 2022).

Definitions: ADI = Area Deprivation Index; AHC = Accountable Health Communities; HRSN = health-related social need.

Other Notes: Includes beneficiaries screened from April 2019–March 2021, surveyed roughly 6 months after their initial screening in the Assistance Track intervention and control group beneficiaries. Estimates were weighted to adjust for survey nonresponse and regression adjusted to control for any potential differences between the intervention and control groups remaining after randomization.

**Exhibit G-12. Subpopulation Analysis Findings: Food HRSN Resolution<sup>1</sup> Among Survey Respondents Who Had a Food HRSN at Screening**

Subpopulations	Sample Size, n		Food Need Resolved,** %			P-Value
	Assistance Intervention	Assistance Control	Assistance Intervention	Assistance Control	Difference	
<b>Benefit</b>						
Medicare	752	311	25.3	24.7	0.6	0.855
Medicaid	2,131	925	25.6	26.5	-0.9	0.685
Dual eligible	786	286	23.0	22.4	0.6	0.838
<b>Housing need at screening</b>						
Steady place to live	2,784	1,171	25.4	26.2	-0.9	0.273
Worried about losing housing	628	245	22.8	23.9	-1.2	0.785
No steady housing	2	2				
<b>Food need at screening</b>						
Never worried about food	2	2				
Sometimes worried about food	2,371	953	28.4	28.3	0.1	0.936
Often worried about food	1,300	569	19.2	20.7	-1.5	0.566
<b>Race/ethnicity</b>						
Black or African American	596	224	34.1	30.2	4.0	0.079*
Hispanic or Latino	510	219	22.3	19.9	2.4	0.418
White	1,752	700	22.6	25.0	-2.4	0.236
<b>ADI</b>						
Lower 4 ADI quintiles	2,827	1,148	25.0	25.9	-0.9	0.586
Highest ADI quintile	822	364	25.8	24.2	1.5	0.350
<b>Time of survey response</b>						
Jan–Mar 2020 (prepandemic)	694	256	21.4	21.0	0.4	0.834
Apr 2020–Jul 2021 (postpandemic)	2,977	1,266	26.0	26.5	-0.6	0.759

<sup>1</sup>Food HRSN resolution was achieved when respondents with a food HRSN at screening reported that they were not worried about food running out before getting money to buy more at the time of the survey. <sup>2</sup>Excluded because the intervention and/or control groups did not have at least 100 respondents.

\*\*P < 0.05; \*P < 0.10.

Source: AHC Evaluation Beneficiary Survey (January 2020–January 2022).

Definitions: ADI = Area Deprivation Index; AHC = Accountable Health Communities; HRSN = health-related social need.

Other Notes: Includes beneficiaries screened from April 2019–March 2021, surveyed roughly 6 months after their initial screening in the Assistance Track intervention and control group beneficiaries. Estimates were weighted to adjust for survey nonresponse and regression adjusted to control for any potential differences between the intervention and control groups remaining after randomization.

**Exhibit G-13. Subpopulation Analysis Findings: Transportation HRSN Resolution<sup>1</sup> Among Survey Respondents Who Had a Transportation HRSN at Screening**

Subpopulations	Sample Size, n		Transportation Need Resolved,** %			P-Value
	Assistance Intervention	Assistance Control	Assistance Intervention	Assistance Control	Difference	
<b>Benefit</b>						
Medicare	674	284	47.3	46.7	0.7	0.831
Medicaid	1,414	573	43.1	40.9	2.2	0.259
Dual eligible	561	210	47.1	45.2	1.8	0.664
<b>Housing need at screening</b>						
Steady place to live	2,028	835	45.2	43.7	1.4	0.614
Worried about losing housing	409	163	42.3	42.2	0.1	0.977
No steady housing	2	2				
<b>Food need at screening</b>						
Never worried about food	1,237	484	48.6	48.8	-0.2	0.957
Sometimes worried about food	816	341	41.6	39.7	1.9	0.471
Often worried about food	590	232	41.1	34.2	6.9	0.011**
<b>Race/ethnicity</b>						
Black or African American	428	161	49.2	47.5	1.7	0.837
Hispanic or Latino	311	116	43.0	35.5	7.4	0.228
White	1,298	527	42.9	45.3	-2.4	0.372
<b>ADI</b>						
Lower 4 ADI quintiles	2,067	802	43.5	43.1	0.3	0.842
Highest ADI quintile	568	256	49.0	40.3	8.7	0.008**
<b>Time of survey response</b>						
Jan–Mar 2020 (prepandemic)	503	191	36.6	33.5	3.1	0.546
Apr 2020–Jul 2021 (postpandemic)	2,148	876	46.6	45.1	1.5	0.426

<sup>1</sup>Transportation HRSN resolution was achieved when respondents with a transportation HRSN at screening reported no longer having a transportation HRSN at the time of the survey. <sup>2</sup>Excluded because the intervention and/or control groups did not have at least 100 respondents.

\*\*P < 0.05; \*P < 0.10.

Source: AHC Evaluation Beneficiary Survey (January 2020–January 2022).

Definitions: ADI = Area Deprivation Index; AHC = Accountable Health Communities; HRSN = health-related social need.

Other Notes: Includes beneficiaries screened from April 2019–March 2021, surveyed roughly 6 months after their initial screening in the Assistance Track intervention and control group beneficiaries. Estimates were weighted to adjust for survey nonresponse and regression adjusted to control for any potential differences between the intervention and control groups remaining after randomization.

### Exhibit G-14. Subpopulation Analysis Findings: Used One or More Types of Community Services

Subpopulations	Sample Size, n		Used Community Services, %			P-Value
	Assistance Intervention	Assistance Control	Assistance Intervention	Assistance Control	Difference	
<b>Benefit</b>						
Medicare	1,717	727	43.9	42.3	1.6	0.412
Medicaid	3,352	1,404	52.0	54.4	-2.4	0.190
Dual eligible	1,330	512	54.7	50.6	4.1	0.171
<b>Housing need at screening</b>						
Steady place to live	5,073	2,106	50.5	50.6	-0.1	0.916
Worried about losing housing	920	362	52.6	54.6	-2.1	0.649
No steady housing	360	146	52.0	52.4	-0.4	0.940
<b>Food need at screening</b>						
Never worried about food	2,783	1,124	46.5	43.8	2.6	0.129
Sometimes worried about food	2,304	941	53.6	55.8	-2.3	0.230
Often worried about food	1,269	558	55.1	58.7	-3.7	0.211
<b>Race/ethnicity</b>						
Black or African American	1,056	398	55.9	50.5	5.4	0.080*
Hispanic or Latino	746	301	54.8	55.4	-0.6	0.846
White	3,329	1,366	49.8	50.9	-1.1	0.440
<b>ADI</b>						
Lower 4 ADI quintiles	4,934	1,968	50.8	50.6	0.2	0.911
Highest ADI quintile	1,427	661	51.2	54.2	-3.0	0.027**
<b>Time of survey response</b>						
Jan–Mar 2020 (prepandemic)	1,191	448	52.4	51.7	0.6	0.871
Apr 2020–Jul 2021 (postpandemic)	5,211	2,196	50.5	51.4	-0.9	0.617

\*\*P < 0.05; \*P < 0.10.

Source: AHC Evaluation Beneficiary Survey (January 2020–January 2022).

Definitions: ADI = Area Deprivation Index; AHC = Accountable Health Communities.

Other Notes: Includes beneficiaries screened from April 2019–March 2021, surveyed roughly 6 months after their initial screening in the Assistance Track intervention and control group beneficiaries. Estimates were weighted to adjust for survey nonresponse and regression adjusted to control for any potential differences between the intervention and control groups remaining after randomization.

# Analysis of Responses to the Open-Ended Survey Question

The survey included one open-ended item: “What did community organizations do to get the help you needed? What did they do that didn’t help?” We used a Natural Language Processing method called Latent Dirichlet Allocation (LDA) to identify common topics discussed in responses to this item. LDA uses machine learning to identify topics in textual data by identifying groups of terms that tend to be used together. We analyzed responses from the first 16 waves of survey data collection in this analysis, including surveys collected from January 2020 through July 2021.

## Methods for Open-Ended Survey Item Analysis

**Data cleaning.** We cleaned write-in responses before conducting LDA analysis to improve the ability of the algorithm to identify valid themes in the data. All data cleaning for the open-ended item was conducted using Python 3. We excluded responses with fewer than four words before data cleaning and responses in Spanish. We removed words that would not meaningfully contribute to themes, such as month and place words (e.g., months, addresses, and cities) and very common words (e.g., “the,” and “and”). Typos were corrected through manual review. We used a process called lemmatization to standardize words to reflect only the root of each word (e.g., by changing verbs to infinitive form and plural nouns to singular nouns). We also combined words that commonly occur in a two-word or three-word phrase using an algorithmic and manual cleaning process. For example, phrase detection resulted in a change from “air conditioning” to “air-conditioning” so that the LDA algorithm would treat this phrase as a single term.

**LDA model.** LDA requires analysts to select the number of topics identified. To decide on the number of topics, we iteratively specified a range of topic numbers and assessed 1) the *face validity* of the resulting topics and 2) the *distinctness of topics* in each model. After review, the analytic team collaboratively decided that 10 topics best fit the underlying data while producing distinct and nonoverlapping topics. Each response received a topic-specific weight for all 10 topics, where the sum of all 10 topic weights equals 1; we considered the topic with the greatest weight to be the main topic discussed in each response. The following analyses used these main topics to determine relationships between the topics discussed and other factors. After running the final LDA model, we assigned titles to each topic, summarizing the highest-weighted words in the topic and exemplar responses for each topic.

**Comparing topics across groups.** We conducted a chi-squared test to assess whether there was a significant difference across the three groups (Alignment Track, Assistance Track Navigation and community referral summary [CRS], and Assistance Track CRS only) in the proportion of responses with each main topic.

**Alignment between topics and services used.** We examined main topics of write-in responses among participants who indicated in another survey item that they had received services within the past 6 months for each core HRSN. This analysis aimed to determine whether topics identified by the LDA model aligned with community services received by participants. The item used for this analysis is “Community organizations help people with free or low-cost public services. Community organizations could be housing shelters, soup kitchens, or other organizations. Which of these community or public services did you use in the past six months? *Please choose all that apply.*” Respondents could select any combination of the following response options: “Help finding or keeping a steady place to live,” “Help with your utilities (electricity, gas, oil or water),” “Help getting enough food for you and your family to eat,” “Help with reliable transportation to places you need to go,” and “None.” Among participants who selected each response, we examined the breakdown of main topics identified by the LDA model.

**Reported effectiveness of community services by main topic.** We assessed beneficiary responses to a survey item about the effectiveness of community services, stratified by the main topic assigned to the open-ended item. We

used the following item about community services: “In general, if you used any of these types of services, how effective were the community organizations in getting you the help you needed?” Response options included “Very effective,” “Quite a bit effective,” “Somewhat effective,” “A little bit effective,” “Not at all effective,” “I wanted but could not get these services,” and “I did not want these services.”

**Manual thematic analysis.** We used manual thematic analysis to gain additional insights about barriers to HRSN resolution from beneficiaries’ written responses. We reviewed open-ended item responses from beneficiaries who reported that they wanted but were not able to access community services and who responded to the question: “In general, if you used any of these types of services, how effective were the community organizations in getting you the help you needed?” Open-ended item responses for these beneficiaries were examined separately by main topic assigned by the LDA model. We conducted this analysis for all topics that included at least 40 responses from beneficiaries who reported that they were unable to access wanted services. Each response was coded “Yes” or “No” for the following question: “Does the response discuss a barrier related to the main topic for this response?” Among responses coded “Yes,” we conducted thematic analysis to identify barriers described in responses. We then identified the most common barriers described among these responses for each topic.

## Results of Open-Ended Survey Item Analysis

**Sample and nonresponse analysis for write-in item.** Among 11,095 beneficiaries who returned completed surveys during the first 16 waves of data collection, 5,804 beneficiaries responded to the open-ended item. After excluding responses with fewer than four words (n=1,058) and responses in Spanish (n=30), 4,716 responses remained for analysis.

We found few notable differences between survey respondents who left the open-ended question blank and those who answered the open-ended question. Relative to survey respondents who left the open-ended question blank, respondents who answered the open-ended question were more likely to be middle aged, receive Medicaid, have incomes <\$15,000, and have multiple HRSNs. **Exhibit G-15** presents the proportion of beneficiaries who did and did not respond to the open-ended item across a number of characteristics pulled from screening and survey responses.

**Exhibit G-15. Response Rates for Analysis of Open-Ended Item**

Characteristics	N Survey Respondents	Provided a Response to the Open-Ended Item, %	Did Not Respond to the Open-Ended Item, %	Standardized Mean Difference
<b>AHC Track</b>				
Assistance Track navigation and CRS	5,322	46.0	50.1	-0.082
Assistance Track CRS only	2,160	19.2	19.8	-0.014
Alignment Track	3,613	34.8	30.2	0.099
<b>Age</b>				
26 or younger	633	4.6	6.9	-0.100
27 to 34	967	8.7	8.8	-0.004
35 to 44	1,497	14.5	12.4	0.060
45 to 54	2,109	21.1	16.8	0.109
55 to 64	2,801	27.2	23.2	0.092
65 to 74	1,818	15.1	17.7	-0.070
75 or older	1,270	8.9	14.2	-0.165
<b>Gender</b>				
Female	7,323	68.0	63.8	0.089
Male	3,537	29.9	34.0	-0.089
Missing	235	2.1	2.2	-0.005

(continued)

**Exhibit G-15. Response Rates for Analysis of Open-Ended Item (continued)**

Characteristics	N Survey Respondents	Provided a Response to the Open-Ended Item, %	Did Not Respond to the Open-Ended Item, %	Standardized Mean Difference
<b>Race/ethnicity</b>				
Asian, Hawaiian, or Pacific Islander	114	0.9	1.1	-0.016
Black or African American	2,474	23.2	21.4	0.043
Hispanic or Latino	1,289	10.9	12.4	-0.048
White	5,714	51.2	51.8	-0.013
Other or multiple	324	3.3	2.5	0.044
Missing	1,180	10.6	10.7	-0.005
<b>Benefit</b>				
Medicare	2,702	21.6	27.3	-0.132
Medicaid	6,252	59.3	53.2	0.123
Dual eligible	2,136	19.0	19.5	-0.011
<b>Education</b>				
Less than high school	1,937	16.5	18.5	-0.052
High school or equivalent	3,252	29.4	29.2	0.006
Some college	2,075	20.0	17.3	0.070
College graduate	698	6.0	6.5	-0.021
Missing	3,133	28.0	28.5	-0.011
<b>Household income</b>				
Less than \$15,000	4,073	39.8	33.4	0.132
\$15,000 to \$24,999	1,101	10.1	9.8	0.010
\$25,000 to \$49,999	645	4.9	6.8	-0.083
\$50,000 or more	247	1.3	3.2	-0.124
Missing	5,029	43.9	46.8	-0.058
<b>Number of core HRSNs at screening</b>				
1 core HRSN	4,703	36.3	48.9	-0.257*
2 core HRSNs	3,230	30.3	27.8	0.056
3+ core HRSN	3,162	33.4	23.3	0.224
<b>Screening item: What is your living situation today?</b>				
Steady place to live	8,403	73.3	79.6	-0.149
Worried about losing housing	1,787	17.9	14.5	0.094
No steady housing	811	8.8	5.9	0.109
<b>Screening item: Within the past 12 months, you worried that your food would run out before you got money to buy more</b>				
Never true	4,269	34.1	43.6	-0.197
Sometimes true	4,247	39.8	37.1	0.055
Often true	2,510	26.1	19.2	0.164
<b>Screening item: In the past 12 months, has lack of reliable transportation been a barrier?</b>				
No	6,095	53.6	57.4	-0.075
Yes	4,897	46.4	42.6	0.075
<b>Screening item: In the past 12 months, have utilities companies threatened to shut off services?</b>				
No	7,242	62.8	69.7	-0.148
Yes	3,504	35.3	28.5	0.145
Already shut off	201	1.9	1.7	0.016
<b>Screening item: Any indication of safety HRSN</b>				
No safety HRSN	10,266	90.9	94.2	-0.127
Indication of safety HRSN	829	9.1	5.8	0.127
<b>Metropolitan, micropolitan, or rural area</b>				
Metro	9,232	83.1	83.3	-0.007
Micro	931	8.0	8.8	-0.031
Rural	932	8.9	7.8	0.040

(continued)

## Exhibit G-15. Response Rates for Analysis of Open-Ended Item (continued)

Characteristics	N Survey Respondents	Provided a Response to the Open-Ended Item, %	Did Not Respond to the Open-Ended Item, %	Standardized Mean Difference
<b>ADI quintiles</b>				
Quintile 1	431	3.6	4.2	-0.033
Quintile 2	2,011	17.2	19.1	-0.049
Quintile 3	2,552	23.2	22.8	0.011
Quintile 4	3,411	30.8	30.7	0.003
Quintile 5	2,602	24.3	22.6	0.039
Missing	88	0.9	0.7	0.028
<b>COVID-19 cases/100K in the last 14 days by county when each survey wave was administered</b>				
No COVID-19 cases	3,187	29.0	28.4	0.014
>0 to 9 cases/100K	3,222	29.3	28.7	0.013
10 to 29 cases/100K	2,557	22.5	23.6	-0.024
30 to 49 cases/100K	785	6.9	7.3	-0.015
50+ cases/100K	1,344	12.2	12.0	0.006
<b>ZIP code-level median household income</b>				
Less than \$30,000	1,055	9.7	9.3	0.011
\$30,000 to \$49,999	4,942	45.6	43.4	0.044
\$50,000 to \$69,999	2,905	26.1	26.2	-0.003
\$70,000 to \$99,999	1,783	15.2	17.0	-0.048
\$100,000 or more	410	3.4	4.0	-0.032

\*Absolute value of the standardized mean difference > 0.25.

Source: AHC Evaluation Beneficiary Survey (January 2020–July 2021).

Definitions: ADI = Area Deprivation Index; AHC = Accountable Health Communities; COVID-19 = coronavirus disease 2019; CRS = community referral summary; HRSN = health-related social need.

Other Notes: Includes beneficiaries screened from April 2019–September 2020, surveyed roughly 6 months after their initial screening. Categories do not always sum to 100% because of rounding.

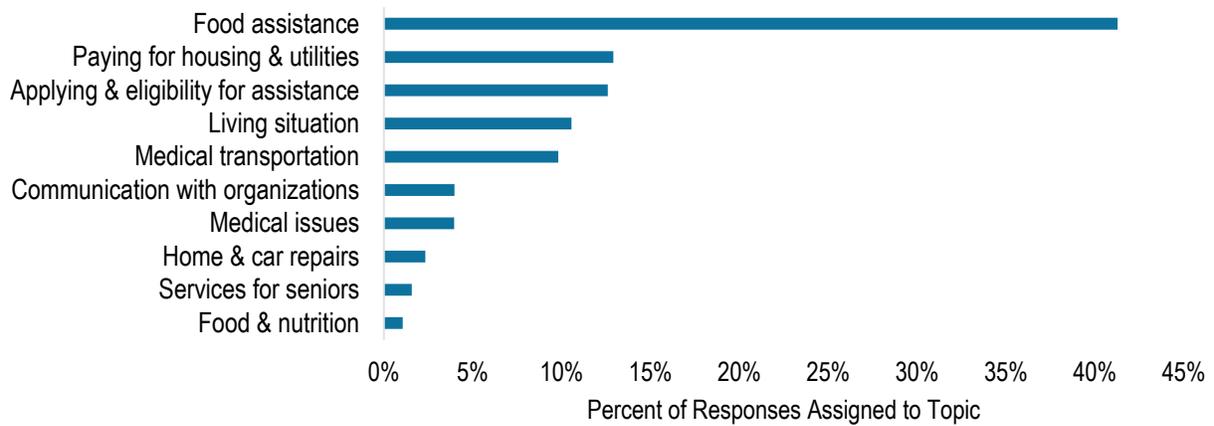
## Topics Identified by LDA Model

Exhibit G-16 and Exhibit G-17 present the 10 topics that respondents discussed most frequently. Exhibit G-18 presents examples of responses that were assigned a given topic as the main topic for that response. The most common topics mentioned by respondents included the following:

- Food assistance (main topic identified in 41.3% of responses)
- Paying for housing and utilities (main topic identified in 12.9% of responses)
- Applying and eligibility for assistance (main topic identified in 12.6% of responses)

Most of the 10 topics related directly to the five core HRSNs addressed by the AHC Model.

**Exhibit G-16. Survey Respondents Discussed Food Assistance the Most When Asked, “What did community organizations do to get the help you needed? What did they do that didn’t help?”**



Source: AHC Evaluation Beneficiary Survey (January 2020–July 2021).

Definitions: AHC = Accountable Health Communities; LDA = Latent Dirichlet Allocation.

Other Notes: Includes beneficiaries screened from April 2019–September 2020, surveyed roughly 6 months after their initial screening. Bars indicate the percentage of write-in responses with each main topic based on the final LDA model.

## Exhibit G-17. Topics Identified by LDA Model

Topic <sup>1</sup>	Responses With Main Topic <sup>2</sup>		Average Weight of Topic (%)	Top Terms in Topic <sup>3</sup>
	n	%		
Food assistance	1,944	41.3	29.8	food, give, food_bank, provide, food_pantry, church, deliver, transportation, service, family
Paying for housing and utilities	608	12.9	13.5	pay, rent, bill, gas, electric_bill, utility, electric, light, month, food
Applying and eligibility for assistance	593	12.6	14.3	food_stamp, assistance, service, apply, receive, housing, Medicaid, snap, due, send
Living situation	497	10.6	12.8	housing, place, live, find, apartment, time, year, stay, shelter, people
Transportation	462	9.8	12.0	transportation, appointment, ride, doctor, time, service, bus, medical, call, pick
Communication with organizations	187	4.0	5.0	call, people, phone, service, number, answer, put, good, leave, touch
Medical issues	186	4.0	5.5	bad, problem, make, work, health, live, daughter, husband, hospital, surgery
Home and car repairs	110	2.3	3.2	house, fix, home, repair, time, heat, car, anymore, wheelchair, wife
Services for seniors	74	1.6	2.3	senior, service, citizen, care, center, community_service, today, feel_like, living, face
Food and nutrition	50	1.1	1.6	meat, vegetable, fresh, milk, give, fruit, product, household, give_away, baby

<sup>1</sup>Topic names were assigned by the researchers based on a qualitative review of the top terms in the topic and responses assigned to the topic. <sup>2</sup>Each response was assigned one “main topic,” which corresponded to the topic with the highest weight for that response. <sup>3</sup>Top terms were those weighted most heavily for each topic by the LDA model.

Source: AHC Evaluation Beneficiary Survey (January 2020–July 2021).

Definitions: AHC = Accountable Health Communities; LDA = Latent Dirichlet Allocation.

Other Notes: Includes beneficiaries screened from April 2019–September 2020, surveyed roughly 6 months after their initial screening. Categories do not always sum to 100% because of rounding.

## Exhibit G-18. Example Responses by Topic

Topic	Example Response <sup>1</sup>
Food assistance	"I go monthly to 2 different organizations to get my monthly food package. Beginning of the month, I go to the local [name of organization] and the end of the month, I go to my church."
Paying for housing and utilities	"HUD pays 80% of my rent, heating assistance. Social services help offset heating bill."
Applying and eligibility for assistance	"Tried applying, but they said husband working, but now he's unemployed and they accepted the application, but haven't heard anything. Applied for Medicaid yesterday."
Living situation	"I have been in a two-year housing program constructed to help me learn living and money management skills to move on to permanent housing after the two years. I am no further ahead than when I first started."
Transportation	"[Name of transportation organization] has been invaluable in expanding my ability to obtain reliable transportation to medical appointments."
Communication with organizations	"They gave you numbers to call, no one picks up or answers emails."
Medical issues	"Sent a homecare aide periodically to my home to make sure my health condition was improving, not getting worse. After my fall on the ice in February. Which they were very effective and helpful."
Home and car repairs	"I need a new roof and ceiling in my living room. Roof leaks on lower side of house. Ceiling fell in the living room behind wood stove. Really need help fixing them."
Services for seniors	"I enjoyed a lunch service at [place name] senior center."
Food and nutrition	"They help me every Thursday with plenty with vegetables, cheese, milk, yogurt, oatmeal, apples, bananas, and more."

<sup>1</sup>Example responses were taken from the set of responses that were assigned each main topic (i.e., the topic with the highest weight for each response).

Source: AHC Evaluation Beneficiary Survey (January 2020–July 2021).

Definitions: AHC = Accountable Health Communities.

Other Notes: Includes beneficiaries screened from April 2019–September 2020, surveyed roughly 6 months after their initial screening. Names of organizations were removed for patient confidentiality.

**Results of comparison across tracks.** Chi-squared test results showed that differences in the proportion of main topics across AHC groups (Alignment Track, Assistance Track navigation and CRS, and Assistance Track CRS only) were not statistically significant ( $\chi^2 = 24.46$ ,  $P = 0.141$ ). As seen in **Exhibit G-19** and **Exhibit G-20**, differences across tracks were also relatively small in magnitude, which indicates that respondents who were offered navigation had similar experiences with community services to respondents in the Assistance Track who were offered the CRS but not navigation.

### Exhibit G-19. Main Topic Frequencies Across Tracks

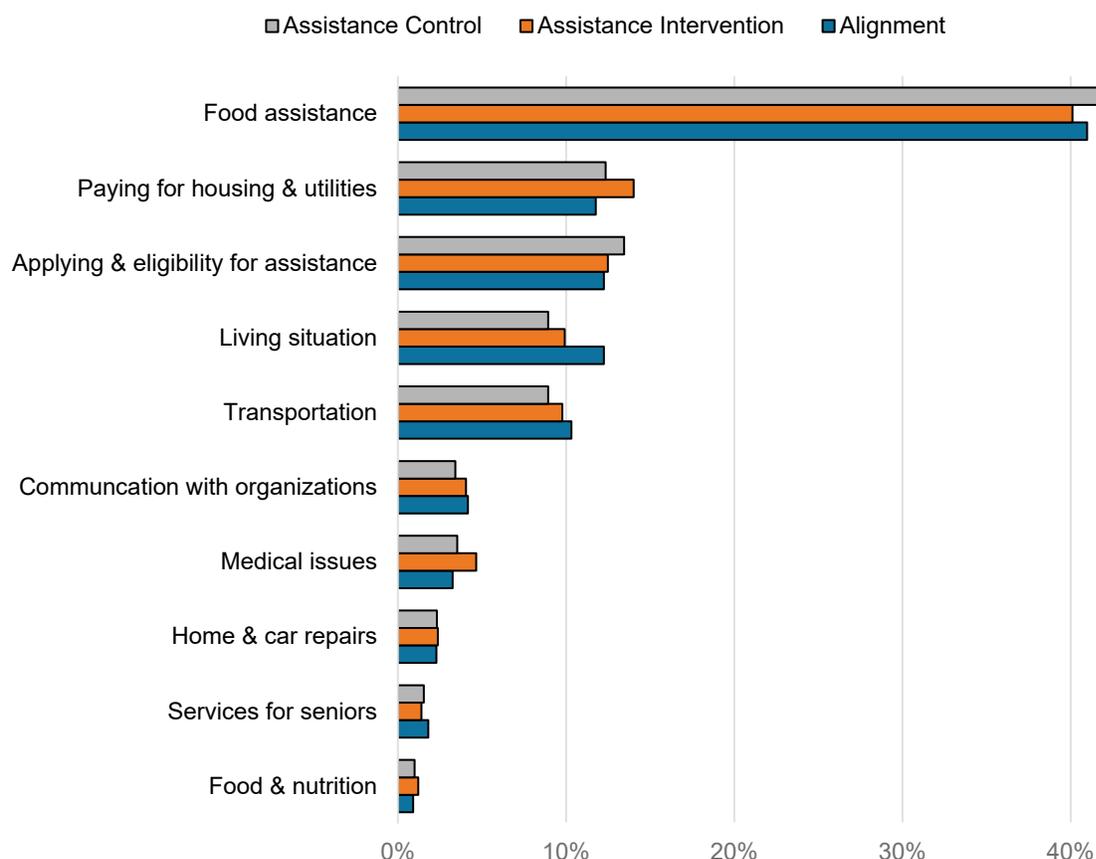
Topic	Assistance Control		Assistance Intervention		Alignment Track	
	n	%	n	%	n	%
Food assistance	404	44.5	679	41.0	861	40.1
Paying for housing and utilities	112	12.4	195	11.8	301	14.0
Applying and eligibility for assistance	122	13.5	203	12.3	268	12.5
Living situation	81	8.9	203	12.3	213	9.9
Transportation	81	8.9	171	10.3	210	9.8
Communication with organizations	31	3.4	69	4.2	87	4.1
Medical issues	32	3.5	54	3.3	100	4.7
Home and car repairs	21	2.3	38	2.3	51	2.4
Services for seniors	14	1.5	30	1.8	30	1.4
Food and nutrition	9	1.0	15	0.9	26	1.2
<b>Total</b>	<b>907</b>	<b>100.0</b>	<b>1,657</b>	<b>100.0</b>	<b>2,147</b>	<b>100.0</b>

Source: AHC Evaluation Beneficiary Survey (January 2020–July 2021).

Definitions: AHC = Accountable Health Communities.

Other Notes: Includes beneficiaries screened from April 2019–September 2020, surveyed roughly 6 months after their initial screening. Categories do not always sum to 100% because of rounding.

## Exhibit G-20. Topics in Write-In Responses Were Similar Across Tracks



Source: AHC Evaluation Beneficiary Survey (January 2020–July 2021).

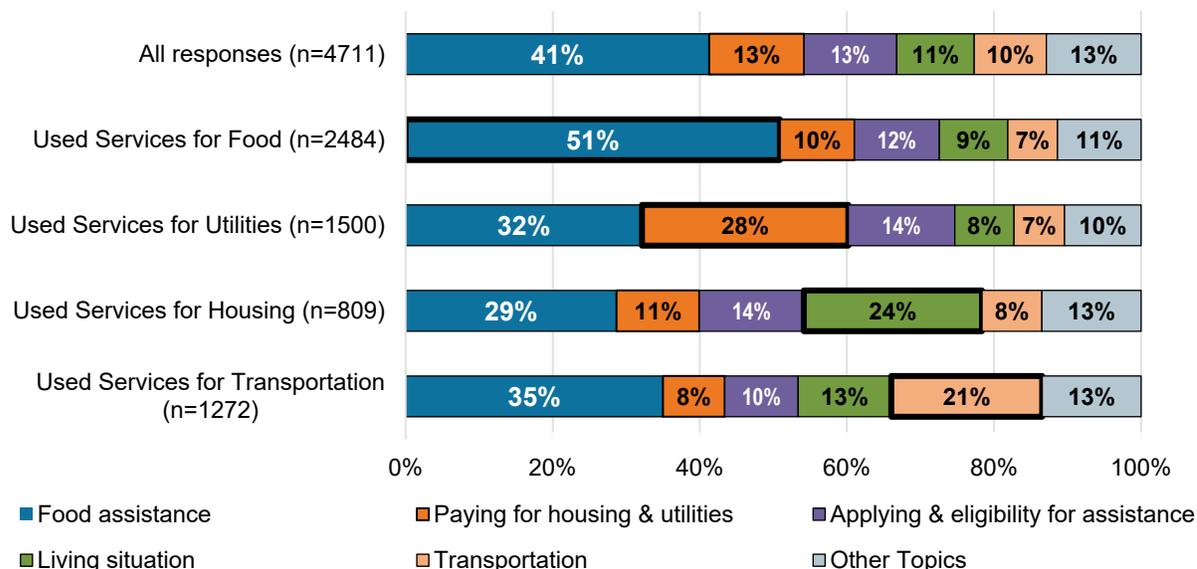
Definitions: AHC = Accountable Health Communities.

Other Notes: Includes beneficiaries screened from April 2019–September 2020, surveyed roughly 6 months after their initial screening.

## Results of Services Used Across Main Topics

We compared the topics respondents wrote about to the community services they reported using within the past 6 months. Respondents who reported using services for a particular HRSN were more likely than others to be assigned the main theme that related most directly to that HRSN. For example, respondents who used services for food were disproportionately more likely than other respondents to write about food assistance (41% of all respondents wrote primarily about food assistance, while 51% of respondents who used services for food wrote primarily about this topic). As shown in **Exhibit G-21**, we found similar responses for other HRSNs.

### Exhibit G-21. Percentage of Respondents Who Wrote About Each Main Topic Among Beneficiaries Reporting Use of Services for Each Core HRSN



Source: AHC Evaluation Beneficiary Survey (January 2020–July 2021).

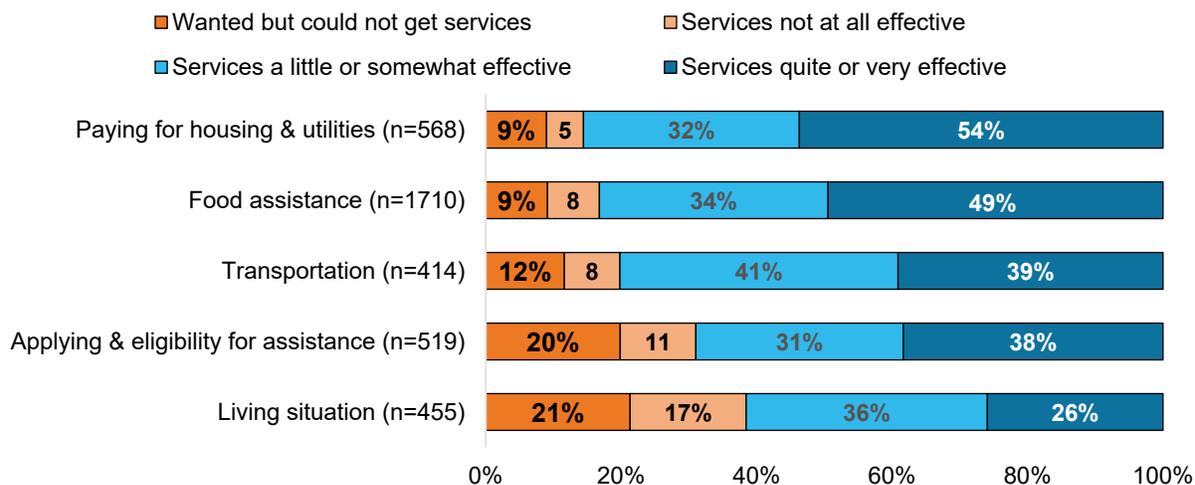
Definitions: AHC = Accountable Health Communities; HRSN = health-related social need.

Other Notes: Includes beneficiaries screened from April 2019–September 2020, surveyed roughly 6 months after their initial screening. Each row displays the main topics of write-in responses among all beneficiaries who reported that they used community services for the specified service within the past 6 months. Black borders highlight the topic that corresponds most closely with each type of community service. Although two topics (*Paying for housing and utilities* and *Living situation*) both relate to housing, we included a border around only *Living situation* for those who used services for housing. This decision was made because the *Living situation* topic was more closely related to the housing response option in the item about community services, which specified “help finding or keeping a steady place to live.” The *Paying for housing and utilities* topic focused more specifically on paying rent for existing housing and on paying for utilities.

### Reported Effectiveness of Community Services by Main Topic

Among beneficiaries whose responses aligned with the most common topics that focused on particular HRSNs (paying for housing and utilities, food assistance, transportation, and living situation), beneficiaries who wrote primarily about living situation were more likely than others to say they wanted but could not get services or that the services they used were not at all effective: nearly 40% of beneficiaries who wrote about living situation selected one of these responses regarding services, while less than 20% of beneficiaries who wrote about other HRSN-specific topics selected these responses (**Exhibit G-22**). Beneficiaries who wrote about applying and eligibility for assistance also often said they wanted but could not get services (over 30%).

## Exhibit G-22. Effectiveness of Community Services Across Survey Repondents for Selected Main Topics



Source: AHC Evaluation Beneficiary Survey (January 2020–July 2021).

Other Notes: Includes beneficiaries screened from April 2019–September 2020, surveyed roughly 6 months after their initial screening. Beneficiaries were included in a bar of this figure if the main topic identified in their open-ended response was the topic indicated on the left, and their response to the item about effectiveness of community services was neither missing nor “Did not want services.”

### Manual Thematic Analysis Results

The five most common topics each included at least 40 responses from beneficiaries who reported being unable to access wanted services, so we conducted manual thematic analysis for responses in these topics. Respondents who said they could not get services described a variety of barriers, including lack of transportation, ineligibility for services, and lack of community resources to address their HRSNs. **Exhibit G-23** lists the most common barriers described in responses with each of the five most common main topics.

## Exhibit G-23. Challenges to Receiving Services Among Survey Respondents Who Could Not Get the Services They Wanted

LDA-Identified Topic	N <sup>1</sup>	Challenges
Food assistance	156	Lack of transportation to food pantries
Applying and eligibility for assistance	103	Ineligibility for services, often based on income
Living situation	97	Lack of community resources (e.g., no affordable housing, long wait-list for Section 8 and other housing support)
Paying for housing and utilities	51	Ineligibility for services Lack of community resources that help pay for rent and utilities
Transportation	48	Lack of transportation as a barrier to other services Difficulties getting transportation to medical appointments

Source: AHC Evaluation Beneficiary Survey (January 2020–July 2021).

Definitions: AHC = Accountable Health Communities; LDA = Latent Dirichlet Allocation.

Other Notes: Includes beneficiaries screened from April 2019–September 2020, surveyed roughly 6 months after their initial screening. <sup>1</sup>N indicates the number of open-ended item responses from beneficiaries who reported that they wanted but were not able to access community services, and whose response to the question “In general, if you used any of these types of services, how effective were the community organizations in getting you the help you needed?” was categorized into the topic listed. A total of 455 respondents met these criteria.

## References

- American Association for Public Opinion Research. Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys. Revised 2016. Available from [https://www.aapor.org/AAPOR\\_Main/media/publications/Standard-Definitions20169theditionfinal.pdf](https://www.aapor.org/AAPOR_Main/media/publications/Standard-Definitions20169theditionfinal.pdf)
- Garrido, M.M., Kelley, A.S., Paris, J., et al.: Methods for constructing and assessing propensity scores. Health Serv Res. 49(5):1701-1720, 2014.
- World Health Organization. Putting Women First: Ethical and Safety Recommendations for Research on Domestic Violence Against Women. Geneva, Switzerland, 2001.

## Attachment G-1 Beneficiary Survey Instrument



7

# Survey about Community Services and Your Health



Please mark here if the person this was mailed to cannot complete it and there is no one to help him or her. Please mail back the blank survey using the enclosed postage-paid envelope.

## **Instructions:**

- Please read each question carefully and mark the box next to the answer that most closely matches your opinion.
- Please mark only one box for each question.

**RIGHT**

**WRONG**

- You can use a pen, but it is better to use a PENCIL, in case you want to change your answer. Please do not use felt tip pens.
- Please erase cleanly if you make a change.



Have questions? Call toll-free 1-888-238-0963.

**All your answers will be kept private. Whether you decide to answer or not, your benefits will not be affected, now or in the future.**

ABT ASSOCIATES  
COMMUNITY SERVICES & HEALTH SURVEY  
PO BOX 5720  
HOPKINS, MN 55343-9951

Barcode

DRC ID

Abt ID

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## About you and your health

### We would like to know about your health and quality of life.

1. In general, how would you rate your overall health?
  - Excellent
  - Very good
  - Good
  - Fair
  - Poor
2. Over the past six months, did your overall health improve, stay the same, or get worse?
  - Improved
  - Stayed the same
  - Got worse
3. In general, how would you rate your overall mental or emotional health?
  - Excellent
  - Very good
  - Good
  - Fair
  - Poor
4. Over the past six months, did your overall mental or emotional health improve, stay the same, or get worse?
  - Improved
  - Stayed the same
  - Got worse
5. In general, how would you rate your quality of life?
  - Excellent
  - Very good
  - Good
  - Fair
  - Poor
6. Over the past six months, did your quality of life improve, stay the same, or get worse?
  - Improved
  - Stayed the same
  - Got worse
7. Stress is when someone feels tense, nervous, anxious, or can't sleep at night because their mind is troubled. How stressed are you?
  - Not at all
  - A little bit
  - Somewhat
  - Quite a bit
  - Very much
8. Over the past six months, did your level of stress improve, stay the same, or get worse?
  - Improved
  - Stayed the same
  - Got worse
9. How often do you feel lonely or disconnected from those around you?
  - Never
  - Rarely
  - Sometimes
  - Often

10. Over the past 2 weeks, how often have you felt little interest or pleasure in doing things?
- Not at all
  - Several days
  - More than half the days
  - Nearly every day
11. Over the past 2 weeks, how often have you felt down, depressed, or hopeless?
- Not at all
  - Several days
  - More than half the days
  - Nearly every day
12. What is your current work situation?
- Unemployed
  - Part-time or temporary work
  - Full-time work
  - Otherwise unemployed but not seeking work (for example, student, retired, disabled, unpaid primary care giver)

**We would also like to know about your recent experiences with housing, utilities, food, and transportation.**

### Living situation

13. What is your living situation today?
- I have a steady place to live.
  - I have a place to live today, but **am worried** about losing it in the future.
  - I do not have a steady place to live.

14. Over the past six months, did your living situation improve, stay the same, or get worse?
- Improved
  - Stayed the same
  - Got worse

### Utilities

15. Lately, have you worried about the electric, gas, oil, or water company threatening to shut off services in your home?
- Yes
  - No
  - Already shut off
16. Over the past six months, did your access to electricity, gas, oil and water improve, stay the same, or get worse?
- Improved
  - Stayed the same
  - Got worse

### Food

17. Lately, how often do you worry that your food will run out before you get money to buy more?
- Often
  - Sometimes
  - Never
18. Over the past six months, did your access to food improve, stay the same, or get worse?
- Improved
  - Stayed the same
  - Got worse

**Continue onto back cover**



## Transportation

19. Lately, has transportation been a problem for you? *Please choose all that apply.*
- Yes, it has kept me from medical appointments or from getting my medications
  - Yes, it has kept me from getting to work, getting to the store or getting other things I need
  - Yes, I have had to rearrange errands or appointments because of limited transportation
  - No
20. Over the past six months, did your access to transportation improve, stay the same, or get worse?
- Improved
  - Stayed the same
  - Got worse

## Community services

21. Community organizations help people with free or low-cost public services. Community organizations could be housing shelters, soup kitchens, or other organizations. Which of these community or public services did you use in the past six months? *Please choose all that apply.*
- Help finding or keeping a steady place to live.
  - Help with your utilities (electricity, gas, oil or water).
  - Help getting enough food for you and your family to eat.
  - Help with reliable transportation to places you need to go.
  - None

DRC ID

22. In general, if you used any of these types of services, how effective were the community organizations in getting you the help you needed?
- Very effective
  - Quite a bit effective
  - Somewhat effective
  - A little bit effective
  - Not at all effective
  - I wanted but could not get these services
  - I did not want these services

23. What did community organizations do to get the help you needed? What did they do that didn't help?

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## About this survey

24. Did someone help you complete this survey?
- No
  - Yes, a friend or family member
  - Yes, a health care provider
  - Yes, other

***Thank you for completing the survey and mailing it back in the enclosed envelope.***

Abt ID

Barcode

Data Recognition Corp.-18720-54321

# Survey about Community Services and Your Health COVID-19 Questions



The COVID-19 pandemic has changed the lives of many people, including their jobs, household income, and need for social services. We would like to know about your experiences during the COVID-19 pandemic, and how community services may have helped to meet your needs during this difficult time.

25. Since the COVID-19 pandemic started, did any of the following **get worse** for you? *Please select all that apply.*
- Having a steady place to live
  - Having affordable utilities (electricity, gas, oil, or water)
  - Having enough food
  - Having affordable transportation
  - None of the above
26. During the COVID-19 pandemic, have services like housing rental assistance, legal services to keep your housing, or other housing-related services **improved your access to housing or the quality of your housing**? *Please select the best answer.*
- Yes
  - No
  - I did not need these services
  - I did not want these services
  - Does not apply
27. During the COVID-19 pandemic, have services like Low-Income Home Energy Assistance Program (LIHEAP), **improved your ability to pay for utilities**? *Please select the best answer.*
- Yes
  - No
  - I did not need these services
  - I did not want these services
  - Does not apply
28. During the COVID-19 pandemic, have services like soup kitchens, food drop-offs, or food pantries **improved your access to food**? *Please select the best answer.*
- Yes
  - No
  - I did not need these services
  - I did not want these services
  - Does not apply
29. During the COVID-19 pandemic, have services, such as reduced fare bus passes or taxi vouchers, **improved your access to transportation**? *Please select the best answer.*
- Yes
  - No
  - I did not need these services
  - I did not want these services
  - Does not apply
30. Has your household income changed during the COVID-19 pandemic?
- No, there have been no changes to my household income
  - My household income increased
  - My household income decreased, but we are able to meet all of our needs and pay all bills
  - My household income decreased, but we are able to meet basic needs and pay most bills
  - My household income decreased, and we are unable to meet basic needs or pay bills
  - Prefer not to answer

DRC ID

Abt ID

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# Appendix H: Data Sources and Methods for the Claims Analyses Presented in Chapter 8

Chapter 8 presents impact analyses based on claims or encounter data for Medicaid, fee-for-service (FFS) Medicare, and Medicare Advantage beneficiaries in the AHC Model. This appendix describes the data sources used across these three payer populations, including statistics about success in linking the AHC screening and navigation data files to the claims/encounter data records. Detailed measure specifications are also provided for each of the outcomes constructed for the three payer populations. Lastly, the analytic methods for the impact analyses are covered in this appendix.

## Data Sources

### AHC Screening and Navigation Data

We used the AHC screening and navigation data files to identify beneficiaries in the Medicaid and Medicare enrollment data files who were ever screened for the AHC Model and to identify characteristics such as whether they were navigation eligible, the number and type of core health-related social needs (HRSNs), and the track with which they were affiliated. We also used the earliest screening date from these files to identify when beneficiaries entered the sample. We used Medicaid and Medicare ID variables and demographic characteristics such as name and address to link the AHC screening and navigation data to Medicaid and Medicare files, as described below. This report includes beneficiaries who were screened from May 2015 through December 2021, though samples differ by analysis and payer. Baseline analyses were conducted to describe expenditure and utilization among AHC beneficiaries before screening, and impact analyses were conducted to measure impacts of the AHC Model after screening. Baseline Medicaid analyses used beneficiaries who were screened from May 2015 through December 2020, and Medicaid impact analyses used beneficiaries who were screened from May 2015 through September 2020. Baseline FFS Medicare analyses used all beneficiaries in the overall sample, but FFS Medicare impact analyses used beneficiaries who were screened from May 2015 through September 2021. Lastly, the combined Medicare Advantage and FFS Medicare impact analyses only included beneficiaries in the Assistance Track who were screened from May 2015 through September 2019. These combined analyses only go through September 2019 because Medicare Advantage encounter data were only available through 2019.

### Medicaid Data

We used Transformed Medicaid Statistical Information System (T-MSIS) Analytic File (TAF) and Medicaid Analytic eExtract (MAX) files in the Chronic Conditions Warehouse (CCW) to derive Medicaid eligibility and enrollment information, demographic characteristics, and expenditure and utilization outcomes for Medicaid beneficiaries in the AHC Model, including beneficiaries who were screened but not eligible for navigation services. MAX data were used for a small number of states whose TAF did not extend back for a full 3-year baseline period. For this report, we used Medicaid data from April 2015 through December 2020.

### FFS Medicare Claims Data

We used FFS enrollment and claims data provided by the Centers for Medicare & Medicaid Services in the CCW to derive expenditure and utilization outcomes for FFS Medicare beneficiaries in the AHC Model, including

beneficiaries who were screened but not eligible for navigation. We used both Parts A and B claims to create claims-based measures. For this report, we used FFS Medicare data from April 2015 through December 2021.

## Medicare Advantage Encounter Data

We used Medicare Advantage tables in the integrated data repository (IDR) to derive utilization outcomes for beneficiaries in the AHC Model enrolled in a Medicare Advantage plan during the study period, including beneficiaries who were screened but not eligible for navigation. Although these data tables are structured differently from the FFS Medicare data, they provide many similar pieces of information than provided in FFS Medicare data. One exception is that the Medicare Advantage data do not provide reliable expenditure data for constructing expenditure outcomes. For this report, we used Medicare Advantage data from April 2015 through December 2019.

## Data Linkage

We started by linking the AHC screening and navigation data to Medicaid and Medicare files in the CCW. Medicaid beneficiaries were identified in the TAF Demographic and Eligibility (DE) files, and FFS Medicare and Medicare Advantage beneficiaries were identified in the Master Beneficiary Summary File (MBSF), which provides a monthly record of FFS Medicare or Medicare Advantage enrollment. A list of these beneficiaries and limited information from the screening and navigation data were downloaded from the CCW and used to identify encounter data records for these beneficiaries in the IDR.

Three issues make it more complex to link the screening and navigation data to Medicaid files in the CCW. First, in most states, the Medicaid ID provided is the same as the Medicaid Statistical Information System (MSIS) ID available on the TAF; however, in six states (Michigan, Minnesota, New Jersey, New Mexico, Rhode Island, and West Virginia), this is not the case. Second, although records in the screening and navigation files that do not have a Medicaid ID are likely Medicare beneficiaries, we have found that this is not always the case. Moreover, some Medicaid IDs appear to be invalid. Third, the Medicaid IDs for states where the Medicaid ID is equivalent to the MSIS\_ID are unencrypted MSIS\_IDs, whereas the Research Identifiable File (RIF) version of the TAF used in these analyses contains an encrypted MSIS\_ID. To address these issues, we used the following iterative steps to link screening and navigation data to the Medicaid files in the CCW:

1. For the six states where the Medicaid ID is not equivalent to the MSIS\_ID, we linked the Medicaid ID to the Medicaid ID field in the Vital Status File to obtain the MSIS\_ID.
2. We linked the other beneficiaries to the Vital Status File by matching their MSIS\_ID to the Medicaid ID.
3. For beneficiaries who did not link to the Vital Status File by their Medicaid ID or who had a blank Medicaid ID, we then did an exact match to the Vital Status File on four variables to obtain the encrypted Medicaid ID: last name, ZIP code, state, and birth date.<sup>1</sup>
4. We then linked the MSI\_ID to a crosswalk that provides the encrypted MSIS\_ID.
5. We then linked any beneficiary who matched to the Vital Status File to the TAF DE files using their encrypted MSIS\_ID.

Medicare linkage was similar. The AHC screening and navigation data provide three possible identifiers: Health Insurance Claim Number (HICN), Medicare Beneficiary Identification (MBI), and Medicaid ID. The beneficiary identifier in the Medicare files in the CCW (BENE\_ID) is not included in the screening and navigation data, so we linked the Medicare files with screening and navigation data files in three steps:

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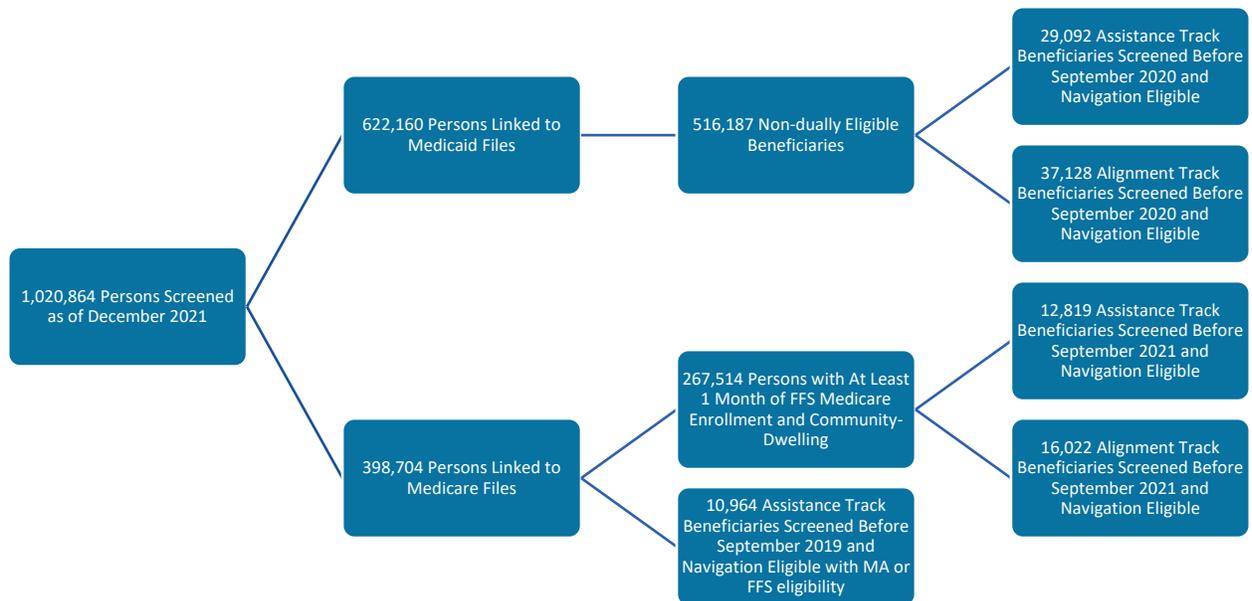
<sup>1</sup> This step is analogous to Step 2 for the Medicare linkage. The linking variables differ because initial exploration of the linkage process for Medicaid showed that this list produced a better match rate than the expanded list used for Medicare linking.

1. We linked beneficiaries who either had an HICN or MBI in the AHC screening and navigation data to separate HICN- and MBI-to-BENE\_ID crosswalk files.
2. We then linked beneficiaries with an HICN or MBI that was not found in the crosswalk files in Step 1 or who only had a Medicaid ID in the screening and navigation data to a file that crosswalks beneficiary name and address with BENE\_ID. We have found that some beneficiaries who only had a Medicaid ID are in fact dually eligible beneficiaries and thus link to the Medicare files. We required an exact match on six variables in this step: first initial of first name, last name, gender, ZIP code, state, and birth date.
3. After obtaining BENE\_ID, we linked the AHC screening and navigation data file to the Medicare enrollment, FFS Medicare claims, and Medicare Advantage encounter data files in the CCW using BENE\_ID or BENE\_SK in the IDR after linking BENE\_ID to BENE\_SK in the BENE\_ID-BENE\_SK crosswalk file.

For Medicare Advantage, we identified beneficiaries who linked to the MBSF in the CCW and had at least 1 month during which they were enrolled in a Medicare Advantage plan. We then used a crosswalk file to link BENE\_ID to BENE\_SK, which is the unique identifier for beneficiaries in the encounter data included in the IDR.

**Exhibit H-1** summarizes linkages to Medicaid and Medicare data files and the final linked samples identified through these processes. The overall match rate was approximately 90%.

### Exhibit H-1. Persons Linked From the AHC Screening and Navigation Files to Medicaid and Medicare Enrollment, Claims, and Encounter Data Files



## Measure Specifications

**Exhibit H-2** shows the measures included in this report for each payer population. We included the same claims-based measures when possible across these three payers. However, expenditure measures are not available for Medicare Advantage beneficiaries because payments are not reported on encounters. Only total expenditures are reported for Medicaid beneficiaries because many are enrolled in managed care plans, and only total capitated payments are provided for these beneficiaries, which does not allow us to disaggregate to service-specific

payments (e.g., for inpatient services). Details on the measure specifications are provided below for FFS Medicare, along with any deviation from the FFS Medicare specification for Medicaid and Medicare Advantage beneficiaries.

**Exhibit H-2. Claims-Based Measures for Medicaid, FFS Medicare, and Combined FFS Medicare and Medicare Advantage Analyses**

Measure	Medicaid	FFS Medicare	Combined FFS Medicare and Medicare Advantage
Total expenditures	✓	✓	
Inpatient expenditures		✓	
ED expenditures		✓	
PAC expenditures		✓	
Inpatient admissions	✓	✓	✓
ACSC admissions	✓	✓	✓
Readmissions <sup>1</sup>	✓	✓	✓
ED visits	✓	✓	✓
ED visits within 30 days of discharge	✓	✓	
Avoidable ED visits	✓	✓	
PCP visits	✓	✓	✓
Follow-up visits	✓	✓	
Follow-up visits after mental health discharge	✓	✓	
Asthma medication	✓	✓	
Treatment for respiratory illness	✓	✓	
Antidepressant medication management	✓	✓	
Initiation of AOD treatment	✓	✓	

<sup>1</sup> For data quality reasons, the combined FFS Medicare and Medicare Advantage analysis used 30-day all-cause readmission rate per 1,000 discharges. The Medicaid and FFS Medicare analyses used 30-day unplanned readmission rate per 1,000 discharges.

Definitions: ACSC = ambulatory care sensitive condition; AOD = alcohol or other drug abuse; ED = emergency department; FFS = fee for service; PAC = post-acute care; PCP = primary care provider.

We calculated all measures included in the baseline descriptive analyses for each of the 3 baseline years before screening. Expenditures during each baseline year were calculated on a per beneficiary per month (PBPM) basis. Inpatient admissions, ambulatory care sensitive condition (ACSC) admissions, emergency department (ED) visits, avoidable ED visits, and primary care provider (PCP) visits are reported as the number of events in each baseline year per 1,000 beneficiaries. Readmissions, follow-up visits, and follow-up visits after a mental health discharge are reported as the number of events in each baseline year per 1,000 discharges. Each utilization measure is a count of the number of events. We included events in a baseline year’s total if the discharge or service end date on the

claim was during that 12-month period (i.e., the year before screening includes events that occurred during the month when each beneficiary was screened or in the 11 months before that month).

For the impact analyses, we calculated quarterly totals and rates for these measures during multiple pre- and post-screening quarters. We calculated yearly totals and rates for pre- and post-screening years for follow-up visits after a mental health discharge, asthma medication, treatment for respiratory illnesses, management of antidepressant medication, and initiation of alcohol or other drug (AOD) treatment. These measures were calculated at an annual level because this was the measurement period defined in the HEDIS specification (for HEDIS measures) or because the rates would have been too small to analyze (for treatment for respiratory illnesses). For the Medicaid analyses, we included each of the first eight quarters after each beneficiary was screened under the AHC Model. For the FFS Medicare analyses, we included each of the first 12 quarters after each beneficiary was screened under the AHC Model. Because of rolling entry at the beneficiary level, not all beneficiaries have a full eight (or 12) quarters of data observed after they were screened. In both Medicaid and FFS Medicare analyses, we included 12 prescreening quarters for the Alignment Track impact analyses. In contrast, the Assistance Track impact analyses only used post-screening quarters.

Measures only include data for beneficiaries who had at least 1 month of eligibility during each observation period (e.g., baseline year or pre- or post-screening quarter). This means that some beneficiaries were not observed continuously throughout the observation period. To account for this, we calculated eligibility fractions for each beneficiary. The eligibility fraction is defined as the total number of months the beneficiary was enrolled in each year divided by 12, or in the case of quarterly outcomes, the total number of months the beneficiary was enrolled in each quarter divided by 3. For example, a beneficiary enrolled in Medicare for 6 months of a year has an eligibility fraction of 0.5 for that year. In the calculation of weighted averages, the eligibility fractions down-weight observations for beneficiaries who are not eligible for the full year/quarter so the observations exert less influence on the analyses because greater uncertainty is associated with having less than a full year or quarter of data.

We provide a detailed description of each measure below. Except for the all-cause readmission rate, all measures described below were created for FFS Medicare beneficiaries; measures denoted with an asterisk (\*) were also created for the Medicare Advantage population, and measures denoted with a pound symbol (#) were also created for the Medicaid population. When necessary, we highlight any differences in the measure specifications for Medicare Advantage and Medicaid.

- **Total expenditures#:** This measure represents overall net payment amounts from all inpatient and outpatient (facility and professional) claims (i.e., Part A and Part B); it excludes beneficiary cost sharing and pharmacy component expenditures for FFS Medicare beneficiaries (i.e., Part D). For Medicaid, this measure represents all FFS net payment amounts for all inpatient, other therapy, long-term care, and pharmacy claims and all capitated payments. We calculated expenditures on a PBPM basis. For each beneficiary, we calculated PBPM payments as annual/quarterly payments divided by the number of months enrolled during the year/quarter. We included all individuals enrolled in the period in calculating the averages, so the figures also reflect the presence of beneficiaries with zero medical costs. We did not risk-adjust or price-standardize payments across geographic areas. We used final action claims and set negative payments on claims to zero. Pennsylvania and Indiana were excluded from the Medicaid sample for total expenditures because of data anomalies.
- **Inpatient facility expenditures:** This measure represents the sum of net facility payments to a hospital for covered services provided during all inpatient admissions. Inpatient admissions were identified using the same methodology as described below for the number of inpatient admissions measure. As with total expenditures, we calculated inpatient facility expenditures on a PBPM basis. For each beneficiary, we calculated PBPM payments as annual/quarterly payments divided by the number of months enrolled during the year/quarter. We included all individuals enrolled in the period in calculating the averages, so

the figures also reflect the presence of beneficiaries with zero medical costs. We did not risk-adjust or price-standardize payments across geographic areas. We set negative payments on claims to zero.

- **ED visit expenditures:** This measure is the overall net payment amount for ED visits that did not lead to a hospitalization and for observation stays. ED visits and observation stays were identified using the same methodology as described below for the number of ED visits measure. As with total expenditures, we calculated ED visit expenditures on a PBPM basis. For each beneficiary, we calculated PBPM payments as annual/quarterly payments divided by the number of months enrolled during the year/quarter. We included all individuals enrolled in the period in calculating the averages, so the figures also reflect the presence of beneficiaries with zero medical costs. We did not risk-adjust or price-standardize payments across geographic areas. We set negative payments on claims to zero.
- **Post-acute care visit expenditures:** This measure is the overall sum of payments from swing bed, long-term care hospital, inpatient rehabilitation, outpatient rehabilitation, home health, skilled nursing facility, and home health agency claims.
- **Number of inpatient admissions\*\*:** This measure is a count of admissions to an acute care hospital reported in the inpatient file for the measurement period per beneficiary. For Medicare, we identified all hospital admissions in which the last four digits of the provider values are 0001 through 0879 (acute inpatient) or 1300 through 1399 (critical access hospital). For Medicare Advantage, we identified acute care hospital admissions as those with a claim type code = 4011. For Medicaid, we identified acute care hospital admissions by including all admissions in the MAX and TAF inpatient (IP) files with a type of service that indicated the admission was to an inpatient hospital (type of service = 01 for MAX, bill type = 111 or 112 for TAF). A large portion of admissions were missing admission or discharge dates in the TAF in a few states. Thus, we used the earliest beginning date or latest end date on IP line files for services associated with an admission when the admission or discharge date was missing. We annualized/quarterized counts of inpatient admissions by dividing the number of admissions for each beneficiary in each year/quarter by that beneficiary's eligibility fraction. We then rounded the number of admissions to the nearest integer.
- **Number of admissions for an ACSC\*\*:** This measure is limited to the population 18 years of age or older. The measure is a count variable that is equal to the number of inpatient discharges that meets the inclusion and exclusion rules for any of the following 11 prevention quality indicators (PQIs) that comprise the Overall Composite (PQI #90):
  - PQI #01 Diabetes Short-Term Complications Admission Rate
  - PQI #03 Diabetes Long-Term Complications Admission Rate
  - PQI #05 Chronic Obstructive Pulmonary Disease or Asthma in Older Adults Admission Rate
  - PQI #07 Hypertension Admission Rate
  - PQI #08 Heart Failure Admission Rate
  - PQI #10 Dehydration Admission Rate
  - PQI #11 Bacterial Pneumonia Admission Rate
  - PQI #12 Urinary Tract Infection Admission Rate
  - PQI #14 Uncontrolled Diabetes Admission Rate
  - PQI #15 Asthma in Younger Adults Admission Rate
  - PQI #16 Rate of Lower-Extremity Amputation Among Patients with Diabetes

We annualized/quarterized counts of ACSC admissions by dividing the number of ACSC admissions for each beneficiary in each year/quarter by that beneficiary's eligibility fraction. We then rounded the number of ACSC admissions to the nearest integer.

- **Unplanned readmission within 30 days of hospital discharge<sup>#</sup>:** This measure was adapted from the Yale all-cause hospital-wide unplanned readmissions measure, released in March 2018 (Yale New Haven Health Services Corporation–Center for Outcomes Research & Evaluation, 2018). This indicator variable is equal to 1 if there was an unplanned readmission within 30 days to any hospital. We identified an index hospital admission as an inpatient stay with a discharge date within the given measurement period minus 30 days from the end of the period. We included index admissions if the beneficiary was enrolled in FFS Medicare or Medicaid at admission. We excluded index admissions for which the beneficiary did not have 30 days of post-discharge enrollment in Medicare Part A or Medicaid; was transferred to another short-term, acute care hospital; died during hospitalization; was discharged against medical advice; was admitted for a primary psychiatric diagnosis; was admitted for rehabilitation; or was admitted for medical treatment of cancer. We did not count planned admissions as readmissions. Planned admissions include bone marrow, kidney, or other organ transplants; maintenance chemotherapy or rehabilitation; and a list of potentially planned procedures that are not acute or complications of care.
- **All-cause readmissions within 30 days of hospital discharge\*:** This measure was used for Medicare Advantage beneficiaries only. We could not calculate unplanned readmissions for these beneficiaries because of the larger rate of missingness in ICD procedure codes on encounter data claims, which are a key input into the Yale unplanned readmission algorithm. This measure is an indicator that is equal to 1 if there was any readmission within 30 days to any hospital. We identified an index hospital admission as an inpatient stay with a discharge date within the given measurement period minus 30 days from the end of the period. We included an index admission if the beneficiary was enrolled in Medicare Advantage at admission. We excluded index admissions for which the beneficiary did not have 30 days of post-discharge enrollment in Medicare Advantage; was transferred to another short-term, acute care hospital; or died during hospitalization.
- **Number of ED visits\*<sup>#</sup>:** This measure is a count of the number of visits to the ED that did not result in an inpatient hospital admission and the number of observation stays per beneficiary per measurement period. For all data sources, we identified ED visits as claims and encounters with a line item revenue center code equal to 0450 through 0459 or 0981 (ED care). For Medicaid, because revenue codes may be incomplete in the MAX and TAF files, we also identified ED visits where the place-of-service code is equal to 23 and the procedure code is equal to 99281, 99282, 99283, 99284, or 99285. For all data sources, we excluded claims and encounters where every line item has a procedure code equal to any of the following values: 70000 through 89999. This criterion excludes claims and encounters for radiological or pathology/laboratory services only. For all data sources, we identified observation stays as claims and encounters with a line item revenue center code equal to 0760 and Current Procedural Terminology (CPT) code = G0378 and number of times the service is performed  $\geq 8$  or line item revenue center code equal to 0762 (treatment or observation room). We counted multiple ED visits or observation stays on a single day once. We annualized/quarterized counts of ED visits by dividing the number of ED visits for each beneficiary in each year/quarter by that beneficiary's eligibility fraction. We then rounded the number of ED visits to the nearest integer.
- **Preventable/avoidable ED visits<sup>#</sup>:** This measure is created using the NYU algorithm for identifying emergency care provided in an ED that is for a condition that could have been potentially avoided if timely and effective ambulatory care had been provided. The algorithm assigns a weight between 0 and 100 for each primary diagnosis code that could appear on an ED claim, and these weights can then be used to construct a measure of the weighted average number of ED visits that were potentially preventable or avoidable.

- **ED visit within 30 days of hospital discharge<sup>#</sup>:** The measure is a binary variable that is equal to 1 if there was an ED visit within 30 days after discharge. Discharges were included if they were billed by an acute care hospital. A given discharge was excluded if there was a subsequent admission within 30 days. ED visits (including observation stays) were identified in hospital outpatient claims as described above.
- **Number of PCP visits<sup>\*\*</sup>:** This measure is the number of in-person or telehealth primary care visits during the measurement period per beneficiary. PCP visits for FFS Medicare beneficiaries were identified using CPT codes associated with evaluation and management (E&M) visits and revenue center codes associated with ambulatory care. The codes used are those in the 2016 Healthcare Effectiveness Data and Information Set Ambulatory Visit Value Set listed below (either one of the Healthcare Common Procedure Coding System [HCPCS] codes or one of the revenue center codes):

- HCPCS codes: 99201–99205, 99211–99215, 99241–99245, 99341–99345, 99347–99350, 99381–99387, 99391–99397, 99401–99404, 99411, 99412, 99420, 99429, G0403, G0438, G0439, T1015, 92002, 92004, 92012, 92014, 99304–99310, 99315, 99316, 99318, 99324–99328, 99334–99337, S0620, S0621
- Revenue center codes: 0510–0519, 0520–0529, 0982, or 0983

Telehealth visits were identified using the following:

- HCPCS codes 99202–99215, 99341–99345, 99347–99350, G0438, G0439, 92002, 92004, 92012, 92014, 99304–99310, 99315–99316, 99324–99328, 99334–99337, 99441–99443 and HCPCS modifier 95 or GT
- HCPCS codes 99421–99423, G2061–G2063, G2012, G2010

Visits were then classified as a primary care visit if the provider’s specialty was any of the following:

- 01: General practice
- 08: Family practice
- 11: Internal medicine
- 38: Geriatric medicine
- 50: Nurse practitioner
- 70: Multispecialty clinic or group practice
- 37: Pediatrics
- 84: Preventive medicine
- 89: Certified clinical nurse specialist
- 97: Physician assistant

Medicare Advantage and Medicaid data do not have a reliable provider specialty field; instead, we used taxonomy codes for the rendering provider on E&M claims and encounters. The taxonomy codes were chosen to align with the specialty types identified in FFS Medicare claims.

- **Follow-up visit within 14 days of hospital discharge<sup>#</sup>:** The measure is a binary variable that is equal to 1 if there was a post-discharge visit within 14 days. Discharges were included if they were billed by an acute care hospital. As noted above under the number of inpatient admissions description for Medicaid, missing discharge dates were recoded to the latest end date of the claim lines associated with that inpatient stay. A given discharge was excluded if there was a subsequent admission within 14 days. Post-discharge visits

were included if one of the following CPT codes was listed on the outpatient claim within 14 days of the discharge:

- 99201–99205, 99211–99215, 99217–99220, 99238–99239, 99241–99245, 99304–99310, 99315–99316, 99318, 99324–99328, 99334–99337, 99339–99340, 99341–99345, 99347–99350, 99374–99380, 99381–99387, 99391–99397, 99401–99404, 99411–99412, 99429, 99442–99443, 99495–99496, 99510, G0463, or T1015
- Post-discharge visits also include claims with revenue center codes 0521 or 0522 to capture Federally Qualified Health Center visits.
- **Follow-up visit within 7 or 30 days of hospital discharge for mental health<sup>#</sup>:** These measures are binary variables that equal 1 if there is a post-discharge follow-up visit with a mental health practitioner within 7 or 30 days, respectively. Discharges were included if they were billed by an acute care hospital with a primary diagnosis for mental illness. Primary diagnosis codes include:
  - F03.90, F03.91, F20.0, F20.1, F20.2, F20.3, F20.5, F20.81, F20.89, F20.9, F21, F22, F23, F24, F25.0, F25.1, F25.8, F25.9, F28, F29, F30.10, F30.11, F30.12, F30.13, F30.2, F30.3, F30.4, F30.8, F30.9, F31.0, F31.10, F31.11, F31.12, F31.13, F31.2, F31.30, F31.31, F31.32, F31.4, F31.5, F31.60, F31.61, F31.62, F31.63, F31.64, F31.70, F31.71, F31.72, F31.73, F31.74, F31.75, F31.76, F31.77, F31.78, F31.81, F31.89, F31.9, F32.0, F32.1, F32.2, F32.3, F32.4, F32.5, F32.8, F32.81, F32.89, F32.9, F33.0, F33.1, F33.2, F33.3, F33.40, F33.41, F33.42, F33.8, F33.9, F34.0, F34.1, F34.8, F34.81, F34.89, F34.9, F39, F40.00, F40.01, F40.02, F40.10, F40.11, F40.210, F40.218, F40.220, F40.228, F40.230, F40.231, F40.232, F40.233, F40.240, F40.241, F40.242, F40.243, F40.248, F40.290, F40.291, F40.298, F40.8, F40.9, F41.0, F41.1, F41.3, F41.8, F41.9, F42, F42.2, F42.3, F42.4, F42.8, F42.9, F43.0, F43.10, F43.11, F43.12, F43.20, F43.21, F43.22, F43.23, F43.24, F43.25, F43.29, F43.8, F43.9, F44.0, F44.1, F44.2, F44.4, F44.5, F44.6, F44.7, F44.81, F44.89, F44.9, F45.0, F45.1, F45.20, F45.21, F45.22, F45.29, F45.41, F45.42, F45.8, F45.9, F48.1, F48.2, F48.8, F48.9, F50.00, F50.01, F50.02, F50.2, F50.8, F50.81, F50.89, F50.9, F51.01, F51.02, F51.03, F51.04, F51.05, F51.09, F51.11, F51.12, F51.13, F51.19, F51.3, F51.4, F51.5, F51.8, F51.9, F52.0, F52.1, F52.21, F52.22, F52.31, F52.32, F52.4, F52.5, F52.6, F52.8, F52.9, F53, F59, F60.0, F60.1, F60.2, F60.3, F60.4, F60.5, F60.6, F60.7, F60.81, F60.89, F60.9, F63.0, F63.1, F63.2, F63.3, F63.81, F63.89, F63.9, F64.0, F64.1, F64.2, F64.8, F64.9, F65.0, F65.1, F65.2, F65.3, F65.4, F65.50, F65.51, F65.52, F65.81, F65.89, F65.9, F66, F68.10, F68.11, F68.12, F68.13, F68.8, F69, F80.0, F80.1, F80.2, F80.4, F80.81, F80.82, F80.89, F80.9, F81.0, F81.2, F81.81, F81.89, F81.9, F82, F84.0, F84.2, F84.3, F84.5, F84.8, F84.9, F88, F89, F90.0, F90.1, F90.2, F90.8, F90.9, F91.0, F91.1, F91.2, F91.3, F91.8, F91.9, F93.0, F93.8, F93.9, F94.0, F94.1, F94.2, F94.8, F94.9, F95.0, F95.1, F95.2, F95.8, F95.9, F98.0, F98.1, F98.21, F98.29, F98.3, F98.4, F98.5, F98.8, F98.9, or F99

Discharges that are followed by a readmission to an acute or other facility within 30 days or where there is a direct transfer to an acute inpatient care setting were excluded from both denominators. Follow-up visits include outpatient visits, intensive outpatient encounters, and partial hospitalizations with a mental health practitioner within 7 or 30 days of discharge. For both indicators, any of the following meet the criteria for a follow-up visit:

- A visit with any of the following CPT/HCPCS codes with a mental health practitioner:
  - 90791–90792, 90832–90840, 90845, 90847, 90849, 90853, 90870, 90875, 90876, 98960–98962, 99078, 99201–99205, 99211–99215, 99217–99220, 99241–99245, 99304–99310, 99315–99316, 99318, 99324–99328, 99334–99337, 99339–99340, 99341–99345, 99347–99350, 99374–99380, 99381–99387, 99391–99397, 99401–99404, 99411–99412, 99429, 99442–99443, 99510, G0155, G0176–G0177, G0409–G0411, G0463, H0002, H0004, H0031, H0034–H0040, H2000–H2001, H2010–H2020, M0064, S0201, S9480, S9484–S9485, or T1015

- A visit with any of the following CPT codes AND any of the following place of service (POS) codes with a mental health practitioner:
  - CPT codes: 90791, 90792, 90832, 90833, 90834, 90836, 90837, 90838, 90839, 90840, 90845, 90847, 90849, 90853, 90867, 90868, 90869, 90870, 90875, or 90876
  - POS codes: 03, 05, 07, 09, 11, 12, 13, 14, 15, 20, 22, 24, 33, 49, 50, 52, 53, 71, or 72
- A visit with any of the following CPT codes AND either POS = 52 or 53 with a mental health practitioner:
  - CPT codes: 99221–99222, 99223, 99231–99233, 99238–99239, or 99251–99255.
- A visit with any of the following revenue center codes for behavioral health care facilities:
  - 0513, 0900–0905, 0907, 0911–0917, or 0919
- A visit with any of the following revenue center codes for nonbehavioral health care facilities with a mental health practitioner OR diagnosis of mental illness:
  - 0510, 0515–0523, 0526–0529, or 0982–0983
- A transitional care management service with a date of service 29 days after the patient was discharged with a principal diagnosis of mental illness:
  - CPT = 99495 (14 day for the 30-day indicator) or 99496 (7 day for the 7-day indicator).
- **Antidepressant medication management: Beneficiaries aged 18 years or older diagnosed with a new episode of major depression and treated with antidepressant medication who remained on medication treatment at least 12 weeks and 6 months<sup>#</sup>:** This measure is a binary variable that is equal to 1 if a beneficiary aged 18 years or older who was diagnosed with a new episode of major depression and treated with antidepressant medication remained on an antidepressant medication treatment. Two measures are reported:
  - *Effective acute phase treatment.* Newly diagnosed and treated beneficiaries who remained on an antidepressant medication for at least 84 days (12 weeks).
  - *Effective continuation phase treatment.* Newly diagnosed and treated beneficiaries who remained on an antidepressant medication for at least 180 days (6 months).

To be included in these measures, beneficiaries had to be at least 18 years old. They also needed to have a diagnosis for major depression (ICD-9 diagnosis codes 296.20–296.25, 296.30–296.35, 298.0, 311) and meet at least one of the following criteria:

- At least one principal diagnosis of major depression in any outpatient, ED, intensive outpatient, or partial hospitalization setting.
- At least two visits in an outpatient, ED, intensive outpatient, or partial hospitalization setting on different dates of service with any diagnosis of major depression. As with the asthma medication measure, this list will be updated annually to include the latest NDC code sets that are provided as part of the HEDIS measure specification manual.
- At least one inpatient (acute or nonacute) claim/encounter with any diagnosis of major depression.

To identify the date of the first diagnosis, we used the date of the first claim/encounter that met one of the above criteria. To identify the date the medication was dispensed, we used the date that an antidepressant medication was dispensed during the period 30 days before or 14 days after the date of the first diagnosis.

We then checked whether the antidepressant medication was dispensed for at least 84 days (12 weeks) and 180 days (6 months) of continuous treatment with no more than 30 or 51 gap days in treatment, respectively. Beneficiaries were excluded if they received an antidepressant medication any time 3 months before the date the antidepressant medication was dispensed or if they were not continuously enrolled for 45 days before and 245 days after their first depression diagnosis.

- **Asthma Medication Ratio > 50%: Beneficiaries aged 5 through 64 years with persistent asthma who were appropriately prescribed medication more than 50% during the year<sup>#</sup>:** This measure is a binary variable that is equal to 1 if a beneficiary with persistent asthma was dispensed asthma controller medications for at least 50% of all asthma medications during the year. Achieving this threshold ratio of controller to total asthma medications suggests effective management of asthma. It is limited to beneficiaries aged 5 through 64 years with a diagnosis for asthma (ICD-9 diagnosis codes 493.0, 493.1, 493.8, 493.9) who met at least one of the following four criteria:
  - At least one ED visit with asthma as the principal diagnosis (CPT code = 99281–99285 or revenue code = 045x, 0981)
  - At least one acute inpatient discharge with asthma as the principal diagnosis (CPT code = 99221–99223, 99231–99233, 99238, 99239, 99251–99255, 99291 or revenue code = 010x, 0110–0114, 0119, 0120–0124, 0129, 0130–0134, 0139, 0140–0144, 0149, 0150–0154, 0159, 016x, 020x, 021x, 072x, 0987)
  - At least four outpatient visits on different dates of service, with asthma as one of the listed diagnoses and at least two asthma medication dispensing events. To identify outpatient visits, CPT code = 99201–99205, 99211–99215, 99241–99245, 99304–99310, 99318, 99324–99328, 99334–99337, 99339–99340, 99341–99345, 99347–99350, 99374–99380, 99381–99387, 99391–99397, 99401–99404, 99411–99412, 99429, 99442–99443, 99510, G0438, G0439, or T1015 and revenue code = 051x, 0520–0523, 0526–0529, 057x–059x, 0982, 0983.
  - At least four asthma medication dispensing events. If all four dispensing events are “leukotriene modifiers,” then the individual also needs a diagnosis of asthma for any kind of service.

Patients diagnosed with emphysema, chronic obstructive pulmonary disease, cystic fibrosis, and acute respiratory failure in the prior year were excluded (ICD-9 diagnosis codes 492, 518.1, 518.2, 491.2, 493.2, 496, 506.4, 277.0, and 518.81).

For individuals who met the above criteria, the variable was set equal to 1 if more than 50% of days with asthma medication supplied were supplied with a controller medication.

- **Treatment for respiratory episodes (other than COVID-19)<sup>#</sup>:** This measure is a binary variable that equals 1 if the beneficiary had any claims or encounter records in inpatient, outpatient, and professional service settings with any of the following ICD-10 principal or secondary diagnosis codes: J00-J90 (diseases of the respiratory system) and without the presence of diagnosis codes used to identify COVID-19: B97.29 ICD-10 code (used to identify COVID-19 cases from January 1 through March 31, 2020) and U07.1 (used to identify COVID-19 cases beginning April 1, 2020).
- **Initiation of AOD treatment: Adolescent and adult patients with a new episode of AOD dependence who initiated treatment through an inpatient AOD admission, outpatient visit, intensive outpatient encounter, or partial hospitalization within 14 days of the diagnosis<sup>#</sup>:** This measure is a binary variable that is equal to 1 if an adolescent or adult beneficiary with a new episode of AOD dependence initiated treatment within 14 days of the diagnosis. Beneficiaries included in the measure have to be 13 through 64 years old and have at least one of the episodes listed below during the intake period (to allow for visits within 14 days of the index event, this measure includes all but the last 15 days of each measurement

year). Episodes were identified using Value Sets in the HEDIS measure Initiation and Engagement of Alcohol and Other Drug Dependence Treatment:

- At least one outpatient visit, intensive outpatient encounter, or partial hospitalization with a diagnosis of AOD.
- At least one detoxification visit.
- At least one ED visit with a diagnosis of AOD.
- At least one acute or nonacute inpatient discharge with either a diagnosis of AOD or an AOD procedure code.

The episode with the earliest start date was identified as the index episode. Beneficiaries with a claim with any diagnosis of AOD during the 60 days before the index episode were excluded from the measure. For beneficiaries who met the above new episode of AOD criteria, the variable was set to 1 if they initiated AOD treatment through an inpatient AOD admission, outpatient visit, intensive outpatient encounter, or partial hospitalization within 14 days of the diagnosis. In accordance with the HEDIS standard, if the index episode and the initiation treatment event occurred on the same day, they must be with different providers for the initiation treatment event to count. If the index episode was an inpatient discharge, the inpatient stay is considered initiation of treatment. If the index episode was an outpatient, intensive outpatient, partial hospitalization, detoxification, or ED visit, the patient must have at least one of the episodes listed below within 14 days of the index episode to be counted as having initiated treatment. Episodes were identified using Value Sets in the HEDIS measure:

- At least one acute or nonacute inpatient discharge with a diagnosis of AOD.
- At least one outpatient visit, intensive outpatient encounter, or partial hospitalization with a diagnosis of AOD.

Patients whose initiation treatment event is an inpatient stay with a discharge date after the beginning of the last month of their measurement year were excluded from the measure.

## Study Sample

The study sample started with all beneficiaries screened as of December 31, 2021, and who were successfully linked to the Medicaid or FFS Medicare data in the CCW or to the Medicare Advantage data in the IDR. Adjustments were made to the study sample based on when beneficiaries were screened for each of the payer-specific analyses. Baseline Medicaid analyses used beneficiaries screened through December 2020, and Medicaid impact analyses used beneficiaries screened through September 2020. Baseline FFS Medicare analyses used beneficiaries screened through December 2021, and FFS Medicare impact analyses used beneficiaries screened through September 2021. Combined Medicare Advantage and FFS Medicare impact analyses used beneficiaries screened through September 2019.

We further restricted the analytic samples in each year/quarter before or after screening to beneficiaries who were alive at the beginning of the year/quarter and had at least 1 month of Medicaid, Medicare Advantage, or FFS Medicare eligibility during the year/quarter.

## Statistical Methods

This section presents the statistical methods used to measure impacts of the AHC Model among Medicaid and FFS Medicare and beneficiaries in the Assistance Track and Alignment Track.

## Assistance Track Impact Analyses

We started by assessing whether empirical evidence suggested that randomization was successful. Specifically, we measured whether Assistance Track intervention and control group beneficiaries had similar health care measures before screening and similar sociodemographic characteristics. As shown in **Appendix J**, the Assistance Track intervention and control groups were similar in both the health care measures observed before screening and in all observed sociodemographic characteristics. On the basis of these findings, we chose not to conduct a difference-in-differences (D-in-D) impact analysis, which would be less precise and theoretically unnecessary given randomization and the statistical similarity in the intervention and control groups. Instead, we compared post-screening means in health care outcomes across the intervention and control groups to determine whether the AHC Model reduced health care expenditures or utilization.

Comparing post-screening, unadjusted outcome means across the intervention and control groups provides an unbiased impact estimate under the assumption that the only difference between the two groups is that the intervention group received navigation services while the control group did not. However, even with randomization, controlling for sociodemographic characteristics may produce more precise impact estimates (i.e., smaller standard errors and P-values) because covariate adjustment reduces the amount of unexplained variation in outcome measures (Hernandez et al., 2004; Pocock et al., 2015). Moreover, including regression controls makes the impact analysis more robust because it controls for even small differences in the intervention and control groups. Therefore, we calculated regression-adjusted differences in post-screening health care outcomes. In the Medicaid analyses, we controlled for age, gender, disability status, and the total number of months enrolled in Medicaid. In the FFS Medicare analyses, we controlled for age, gender, race/ethnicity, dual-eligibility status, and original Medicare entitlement because of disability. In the combined Medicare Advantage and FFS Medicare analyses, we controlled for the same covariates as the FFS Medicare analyses. Except for unplanned readmissions, all regression models were weighted using each beneficiary's eligibility fraction as the weight variable.

The Assistance Track impact analyses also controlled for the COVID-19 public health emergency (PHE) in two ways. First, we included a set of cohort indicators to adjust for the extent to which the COVID-19 PHE disrupted underlying trends in four key outcomes for Medicaid or FFS Medicare beneficiaries: total expenditures, ED visits, inpatient admissions, and PCP visits. The cohort indicators were also developed to adjust for disruptions in the underlying trends in key programmatic measures: number of screened beneficiaries, number of navigation-eligible beneficiaries, and number of beneficiaries with different types of core HRSNs. Cohorts were defined as follows:

1. Beneficiaries who were screened and navigated before March 2020 (Cohort 1).
2. Beneficiaries who were screened before March 2020, but whose navigation services were delivered at least partially during or after March 2020 (Cohort 2).
3. Beneficiaries who were screened and navigated during or after March 2020 (Cohort 3).

These cohort definitions were developed after reviewing trends in claims and screening and navigation data.

Second, we included an additional control variable to capture variation over time and across regions in COVID-19 risks. Specifically, we included a COVID-19 pandemic vulnerability index (PVI) measure that was derived from a model developed by scientists at the National Institute of Environmental Health Sciences, North Carolina State University, and Texas A&M.<sup>2</sup> Their model produces a daily index score for each county based on 12 factors: 1) transmissible cases, 2) disease spread, 3) population mobility, 4) residential density, 5) social distancing measures, 6) testing, 7) population demographics, 8) air pollution, 9) age distribution, 10) prevalence of co-morbidities, 11) health disparities, and 12) number of hospital beds. We aggregated daily scores to a quarterly score by calculating the average daily score for each measurement quarter. Measurement quarters before the PHE were assigned scores of 0.

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<sup>2</sup> See <https://www.niehs.nih.gov/research/programs/coronavirus/covid19pvi/index.cfm>

We also adopted appropriate regression functional forms for each outcome. Specifically, we used an ordinary least squares model for expenditure outcomes, a logistic regression model for the unplanned readmissions outcome, and a Poisson model for all remaining outcomes except unplanned readmissions. We tested a generalized linear model specification with a gamma error and log link for expenditure outcomes but in some analyses found that this specification provided a poor fit as evidenced by inaccurate mean predictions.

Because we do not know how much exposure to navigation services is necessary to produce changes in health care outcomes, we modeled most outcomes at a quarterly level, where the first quarter included the 3 months after each beneficiary was screened, the second quarter included the next 3 months, and so on. This approach allowed us to investigate whether outcome differences are more pronounced in later quarters relative to earlier quarters and whether outcome differences start to appear after an a priori unknown amount of time exposed to the AHC Model intervention. However, because we only have enough data to look at the first 12 months (for combined Medicare Advantage and FFS Medicare), 24 months (for Medicaid), or 36 months (for FFS Medicare) after each beneficiary was screened, these results may provide an incomplete picture of AHC Model impacts. We modeled some quality-of-care measures at an annual level. This ensured that these outcomes adhered to the HEDIS specifications. We also decided to model treatment for respiratory illnesses at an annual level because the rates were too small at a quarterly level.

Lastly, to measure the overall impact over the first 12 months (for combined FFS Medicare and Medicare Advantage), 24 months (for Medicaid), or 36 months (for FFS Medicare) after each beneficiary was screened, we produced an overall impact estimate for each outcome. To calculate this overall impact estimate, we calculated the weighted average of the four/eight/12 quarter-specific impact estimates for each outcome, using the relative sample size (i.e., the number of beneficiaries observed in each quarter divided by the total number of beneficiary-quarters observed over the 12-, 24-, or 36-month period) within each quarter as a weight. Because of rolling entry, more beneficiaries were observed in the first quarter after screening than in the second quarter and so on. The weights used in calculating the overall impact estimates took this into account by placing a greater emphasis on the impact estimate for the first quarter than later quarters for which relatively fewer observations were available.

## Alignment Track Impact Analyses

The main difference in the impact analyses for the Alignment Track is the modeling approach used. Because the Alignment Track does not randomize beneficiaries to an intervention or control group, we re-used the Assistance Track control group as a comparison group. To ensure this comparison group is valid and reliable, we used propensity score weighting to weight the Assistance Track control group to more closely resemble the Alignment Track beneficiaries in terms of sociodemographic and community-level characteristics. More detail on the propensity score analysis results is available in **Appendix J**.

In addition, we used a D-in-D specification for the Alignment Track impact analyses. As with the Assistance Track, we modeled some outcomes on a quarterly basis and others on a yearly basis. Quarterly outcomes had eight post-screening quarters for Medicaid beneficiaries and 12 post-screening quarters for FFS Medicare beneficiaries. Analyses of quarterly outcomes for both payers used 12 baseline quarters, which provided ample baseline data to test—and, if needed, to correct for—a lack of—parallel baseline trends. Parallel baseline trend testing results are also available in **Appendix J**. Models that were at an annual level had 3 baseline years, and 2–3 post-screening years for Medicaid and FFS Medicare, respectively.

The basic D-in-D specification we used is as follows:

$$Y_{ijt} = \alpha_0 + \beta_1 I_i + \theta P_{it} + \sum_t \alpha_{2,t} Q_t + \sum_k \gamma_k (I_i * Q_k * P_{it}) + \lambda X_{ij} + \delta C_i + \pi PVI_{ijt} + \varepsilon_{ijt}, \quad (H.1)$$

where  $I_i$  ( $= 0, 1$ ) denotes an intervention group indicator,  $P_{it}$  ( $= 0, 1$ ) denotes an indicator that equals 1 if the beneficiary-year observation is a post-screening observation,  $Q_t$  ( $= 0, 1$ ) denotes a set of period-specific indicators

that equal 1 in each time period during the baseline and implementation periods, and  $X_{ij}$  denotes a set of regression controls at the beneficiary (indexed by  $i$ ) and area level (indexed by  $j$ ).  $C_i$  denotes a set of cohort fixed effects for each beneficiary (indexed by  $i$ ), and  $PVI_{ijt}$  denotes a control for pandemic vulnerability for each beneficiary, in county  $j$  at time  $t$ .

In the event that we did not find evidence to support parallel baseline trends for a given outcome, we estimated the following extension to the basic D-in-D specification:

$$Y_{ijt} = \alpha_0 + \beta_1 I_i + \beta_2 TRND_t + \beta_3 (I_i * TRND_t) + \theta P_{it} + \sum_k \{ \alpha_{2,k} Q_k + \gamma_k (I_i * Q_k * P_{it}) \} + \lambda X_{ij} + d C_i + p PVI_{ijt} + \varepsilon_{ijt}, \quad (H.2)$$

where  $TRND_t$  denotes a linear time trend, and all other notation is equivalent to equation (H.1). By including the linear time trend and interacting it with the intervention group indicator, the impact estimates ( $\gamma_k$ ) are now interpreted as the relative change in the outcome across the intervention and comparison groups above and beyond any differences in trends observed during the baseline.

In the Medicaid analysis, all models controlled for the following:

- The number of HRSNs
- Chronic Illness and Disability Payment System risk score
- Charlson score
- Age
- Gender
- Race/ethnicity
- Medicaid eligibility because of disability
- Managed care enrollment
- Total number of months enrolled in Medicaid
- An indicator for rural residence
- An indicator for living in a county with a mental health care professional shortage
- A measure of the county-level proportion of individuals living in poverty
- PVI

In the FFS Medicare analysis, all models controlled for the following:

- The number of HRSNs
- Hierarchical condition category risk score
- The number of chronic conditions at baseline
- Age
- Gender
- Race/ethnicity
- Original Medicare entitlement because of disability
- Total number of months enrolled in Medicare
- An indicator for rurality

- An indicator for living in a county with a mental health care professional shortage
- A measure of the county-level proportion of individuals living in poverty
- PVI

Except for models for unplanned readmissions, all models used a combination of the propensity score weight and the beneficiary's eligibility fraction as an analytic weight. The model for unplanned readmissions only used the propensity score weight as an analytic weight.

We used the same functional forms as in the Assistance Track impact analyses, the same data periods, and the same approach to aggregate quarter-specific impact estimates up to an overall cumulative impact estimate.

Because of the more robust design for the Alignment Track, we have found that the impact analyses are less powered than the Assistance Track impact analyses. Therefore, we chose not to conduct an impact analysis using the combined sample of Medicare Advantage and FFS Medicare beneficiaries for this report. This sample was limited by data availability of Medicare Advantage encounter records to data through December 2019. As such, the sample represented a relatively small number of beneficiaries screened and a shorter 12-month follow-up period.

## Subpopulation Analyses

Subpopulation analyses were performed to test whether AHC Model impacts differed for several vulnerable subpopulations. These analyses relied on interacted models to measure impacts separately for beneficiaries in a particular subpopulation versus beneficiaries not in a particular subpopulation. For example, impacts were measured separately for non-White and/or Hispanic beneficiaries versus non-Hispanic White beneficiaries. The subpopulations included in this report were:

- Nonwhite or Hispanic beneficiaries versus non-Hispanic White beneficiaries
- Dually eligible for Medicare and Medicaid beneficiaries (in the FFS Medicare analyses only) versus nondually eligible beneficiaries
- Disabled beneficiaries versus nondisabled beneficiaries
- Beneficiaries who live in rural regions versus beneficiaries who live in urban regions
- Beneficiaries with more than one HRSN versus beneficiaries with one HRSN
- Beneficiaries with each specific HRSN versus beneficiaries without each specific HRSN

The Assistance Track subpopulation analyses modified the general impact analysis approach described above by testing for differences in regression-adjusted means between the intervention and control groups separately by subpopulation. To test whether the impacts differed for subpopulations, we tested whether the difference in means within each subpopulation was statistically significantly different. The Alignment Track subpopulation analyses similarly modified the general impact analysis approach by interacting the subpopulation indicators with everything in the model (H.1) except for the covariates, pandemic cohort fixed effects, and the PVI measure. We then abstracted marginal effects from the regression model to measure the D-in-D estimate within each subgroup, as well as a measure of the difference in the D-in-D estimates.

## Quality Assurance

Several steps were conducted to ensure the quality of the information presented in this report:

1. All claims data processing and outcome programming were independently reviewed by a second SAS programmer for accuracy.

2. All claims data processing and outcome programming results were reviewed by two analysts.
3. All analysis code was independently reviewed by a secondary analyst from the claims team.
4. All numbers reported were reviewed for accuracy against raw Stata output.

## References

Hernandez, A.V., Steyerberg, E.W., and Habbema, J.D.F.: Covariate adjustment in randomized controlled trials with dichotomous outcomes increases statistical power and reduces sample size requirements. J Clin Epidemiol. 57(5):454-460, 2004.

Pocock, S.J., Clayton, T.C., and Stone, G.W.: Design of major randomized trials: part 3 of a 4-part series on statistics for clinical trials. J Am Coll Cardiol. 66(24):2757-66, 2015.

Yale New Haven Health Services Corporation—Center for Outcomes Research & Evaluation. 2018 All-cause hospital wide measure updates and specifications report: Hospital-level 30-day risk-standardized readmission measure—Version 7.0. 2018.

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# Appendix I: Additional Results and More Detailed Tables to Support Chapter 8

This appendix contains detailed tables of data and additional results that support Chapter 8. For Medicaid and FFS Medicare beneficiaries, we present a set of tables showing descriptive trends in key expenditure and utilization outcomes during a 3-year baseline period. The purpose of these analyses was to provide additional insight into the beneficiaries identified by the AHC Model and help refine the statistical design for impact analyses. For both Medicaid and FFS Medicare beneficiaries, we then provide more detailed results tables for the impact analyses and subpopulation analyses for each track. In the concluding section of this appendix, we include a more detailed results table for the impact analysis of the combined Medicare Advantage and FFS Medicare beneficiaries.

# Medicaid

**Exhibit I-1. Baseline Expenditures and Utilization for Navigation-Eligible Medicaid Beneficiaries**

Measure/Year	Assistance Track Control Group				Assistance Track Intervention Group				Alignment Track Intervention Group			
	N	Mean	Std Dev	P-Value	N	Mean	Std Dev	P-Value	N	Mean	Std Dev	P-Value
<b>Total expenditures (PBPM)</b>												
3 years before AHC screening	8,596	\$1,044	\$1,887	Ref	20,560	\$1,058	\$2,178	0.57	48,848	\$1,230	\$1,982	0.00
2 years before AHC screening	9,646	\$1,156	\$2,212	Ref	23,133	\$1,164	\$2,132	0.77	53,758	\$1,368	\$2,090	0.00
1 year before AHC screening	11,407	\$1,395	\$3,447	Ref	26,674	\$1,391	\$2,373	0.91	60,618	\$1,656	\$2,627	0.00
All 3 baseline years	29,649	\$1,209	\$2,656	Ref	70,367	\$1,213	\$2,238	0.83	163,224	\$1,422	\$2,263	0.00
<b>Admissions/1,000 beneficiaries</b>												
3 years before AHC screening	9,732	309	1,007	Ref	23,454	312	1,019	0.80	50,910	371	1,131	0.00
2 years before AHC screening	10,888	347	1,120	Ref	26,289	354	1,127	0.57	56,042	417	1,208	0.00
1 year before AHC screening	12,790	488	1,299	Ref	30,159	492	1,300	0.76	63,230	632	1,502	0.00
All 3 baseline years	33,410	387	1,160	Ref	79,902	390	1,164	0.61	170,182	476	1,298	0.00
<b>ACSC admissions/1,000 beneficiaries</b>												
3 years before AHC screening	9,732	30	303	Ref	23,454	36	361	0.17	50,910	42	385	0.00
2 years before AHC screening	10,888	39	403	Ref	26,289	37	324	0.62	56,042	51	445	0.00
1 year before AHC screening	12,790	56	489	Ref	30,159	55	421	0.91	63,230	75	562	0.00
All 3 baseline years	33,410	42	411	Ref	79,902	43	372	0.84	170,182	56	472	0.00

(continued)

**Exhibit I-1. Baseline Expenditures and Utilization for Navigation-Eligible Medicaid Beneficiaries (continued)**

Measure/Year	Assistance Track Control Group				Assistance Track Intervention Group				Alignment Track Intervention Group			
	N	Mean	Std Dev	P-Value	N	Mean	Std Dev	P-Value	N	Mean	Std Dev	P-Value
<b>Unplanned readmissions/1,000 discharges</b>												
3 years before AHC screening	1,713	212	409	Ref	4,133	198	398	0.20	11,918	198	399	0.18
2 years before AHC screening	2,113	209	406	Ref	5,188	213	410	0.67	14,437	212	409	0.75
1 year before AHC screening	3,229	221	415	Ref	7,626	226	418	0.52	21,056	227	419	0.41
All 3 baseline years	7,055	215	411	Ref	16,947	215	411	0.98	47,411	215	411	0.99
<b>ED visits/1,000 beneficiaries</b>												
3 years before AHC screening	9,732	2,464	4,598	Ref	23,454	2,404	4,734	0.28	50,910	2,969	6,043	0.00
2 years before AHC screening	10,888	2,493	4,796	Ref	26,289	2,508	4,731	0.78	56,042	3,102	6,057	0.00
1 year before AHC screening	12,790	3,530	5,234	Ref	30,159	3,591	5,001	0.27	63,230	4,266	6,696	0.00
All 3 baseline years	33,410	2,860	4,928	Ref	79,902	2,861	4,860	0.97	170,182	3,456	6,304	0.00
<b>PCP visits/1,000 beneficiaries</b>												
3 years before AHC screening	9,732	4,440	5,742	Ref	23,454	4,416	5,608	0.72	50,910	4,929	6,265	0.00
2 years before AHC screening	10,888	4,519	5,785	Ref	26,289	4,510	5,585	0.89	56,042	5,271	6,565	0.00
1 year before AHC screening	12,790	4,991	6,164	Ref	30,159	5,068	5,937	0.23	63,230	6,338	7,199	0.00
All 3 baseline years	33,410	4,666	5,917	Ref	79,902	4,679	5,727	0.73	170,182	5,526	6,724	0.00

P-values were calculated using the Assistance Track control group as the reference comparator.

Source: RTI analysis of Chronic Conditions Data Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files, May 2015–December 2020.

Definitions: ACSC = ambulatory care sensitive condition; AHC = Accountable Health Communities; ED = emergency department; PBPM = per beneficiary per month; PCP = primary care provider.

Other Notes: Except for unplanned readmissions, all averages were weighted, using each beneficiary’s eligibility fraction as a weight variable.

**Exhibit I-2. Baseline Expenditures and Utilization by AHC Eligibility Criteria for Medicaid Beneficiaries**

Measure	Self-reported < 2 ED Visits and No HRSNs				Self-reported ≥ 2 ED Visits and No HRSNs				Self-reported < 2 ED Visits and ≥ 1 HRSN				Navigation-Eligible Beneficiaries			
													(Self-reported ≥ 2 ED Visits, and ≥ 1 HRSN)			
	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years
<b>Unique beneficiaries</b>	147,379	162,906	190,966	196,828	64,590	72,843	84,884	87,092	80,194	88,232	103,407	106,170	84,682	93,886	106,903	110,073
<b>Total expenditures (PBPM)</b>	\$640	\$682	\$772	\$700	\$917	\$1,001	\$1,206	\$1,049	\$729	\$787	\$872	\$799	\$1,173	\$1,300	\$1,563	\$1,352
Std dev	\$1,330	\$1,397	\$1,445	\$1,395	\$1,837	\$1,967	\$2,454	\$2,122	\$1,288	\$1,419	\$1,516	\$1,416	\$2,042	\$2,134	\$2,690	\$2,322
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Ref	Ref	Ref	Ref
<b>Admissions/1,000 beneficiaries</b>	121	125	182	143	248	281	416	319	133	133	178	149	352	396	578	445
Std dev	530	555	717	610	872	972	1,151	1,015	536	543	666	587	1,097	1,188	1,431	1,256
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Ref	Ref	Ref	Ref
<b>ACSC admissions/1,000 beneficiaries</b>	5	5	6	6	21	23	35	26	7	7	8	7	39	46	68	52
Std dev	98	100	129	111	257	274	333	292	116	126	129	124	372	413	519	442
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Ref	Ref	Ref	Ref
<b>Unplanned readmissions/1,000 discharges</b>	9,460	10,242	13,542	33,244	8,860	10,659	17,400	36,919	6,108	6,483	7,594	20,185	18,062	22,122	32,289	72,473
Mean	81	80	80	81	162	182	179	176	74	73	76	75	201	213	227	216
Std dev	273	272	272	272	369	386	383	381	262	260	265	263	401	410	419	412
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Ref	Ref	Ref	Ref

(continued)

**Exhibit I-2. Baseline Expenditures and Utilization by AHC Eligibility Criteria for Medicaid Beneficiaries (continued)**

Measure	Self-reported < 2 ED Visits and No HRSNs				Self-reported ≥ 2 ED Visits and No HRSNs				Self-reported < 2 ED Visits and ≥ 1 HRSNs				Navigation-Eligible Beneficiaries			
													(Self-reported ≥ 2 ED Visits, and ≥ 1 HRSNs)			
	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years
<b>ED visits/1,000 beneficiaries</b>	793	731	840	788	1,940	1,992	3,009	2,339	935	839	849	872	2,764	2,875	3,993	3,228
Std dev	1,862	1,705	1,936	1,837	3,882	4,004	4,387	4,139	2,020	1,869	1,847	1,910	5,571	5,593	6,113	5,799
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Ref	Ref	Ref	Ref
<b>PCP visits/1,000 beneficiaries</b>	3,492	3,537	4,130	3,728	4,524	4,684	5,469	4,915	3,778	3,855	4,408	4,025	4,732	4,972	5,807	5,187
Std dev	4,720	4,792	5,201	4,925	5,625	5,802	6,341	5,963	4,973	5,075	5,329	5,142	6,034	6,223	6,762	6,376
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Ref	Ref	Ref	Ref

P-values were calculated using the navigation-eligible group as the reference comparator.

Source: RTI analysis of Chronic Conditions Data Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files, May 2015–December 2020.

Definitions: ACSC = ambulatory care sensitive condition; AHC = Accountable Health Communities; ED = emergency department; HRSN = health-related social need; PBPM = per beneficiary per month; PCP = primary care provider.

Other Notes: Except for unplanned readmissions, all averages were weighted, using each beneficiary's eligibility fraction as a weight variable.

**Exhibit I-3. Baseline Expenditures and Utilization by Number of Core HRSNs for Navigation-Eligible Medicaid Beneficiaries**

Measure	1 Core HRSN Reported				2 Core HRSNs Reported				3 or More Core HRSNs Reported			
	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years
<b>Unique beneficiaries</b>	33,185	37,126	42,424	43,759	25,875	28,671	32,556	33,563	25,608	28,075	31,907	32,735
<b>Total expenditures (PBPM)</b>	\$1,112	\$1,231	\$1,475	\$1,279	\$1,182	\$1,308	\$1,581	\$1,363	\$1,239	\$1,378	\$1,652	\$1,430
Std dev	\$2,158	\$2,327	\$2,611	\$2,386	\$2,004	\$2,013	\$2,802	\$2,319	\$1,928	\$1,989	\$2,671	\$2,239
P-value	N/A	N/A	N/A	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Admissions/1,000 beneficiaries</b>	315	356	524	402	348	390	556	434	402	454	668	512
Std dev	1,033	1,115	1,328	1,174	1,063	1,134	1,385	1,210	1,202	1,324	1,590	1,393
P-value	N/A	N/A	N/A	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>ACSC admissions/1,000 beneficiaries</b>	34	39	59	44	40	45	62	49	46	57	84	63
Std dev	340	368	464	396	361	335	460	390	420	525	629	535
P-value	N/A	N/A	N/A	N/A	0.03	0.05	0.46	0.10	0.07	0.00	0.00	0.00
<b>Unplanned readmissions/ 1,000 discharges</b>	6,229	7,649	11,585	25,463	5,518	6,788	9,448	21,754	6,315	7,685	11,256	25,256
Mean	196	209	214	208	199	200	222	209	207	230	244	230
Std dev	397	407	410	406	400	400	415	407	405	421	430	421
P-value	N/A	N/A	N/A	N/A	0.62	0.16	0.21	0.81	0.30	0.00	0.00	0.00
<b>ED visits/1,000 beneficiaries</b>	2,490	2,575	3,630	2,915	2,748	2,832	3,899	3,174	3,131	3,312	4,552	3,687
Std dev	5,070	4,954	5,450	5,193	5,504	5,406	5,875	5,627	6,196	6,473	7,039	6,623
P-value	N/A	N/A	N/A	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(continued)

**Exhibit I-3. Baseline Expenditures and Utilization by Number of Core HRSNs for Navigation-Eligible Medicaid Beneficiaries (continued)**

Measure	1 Core HRSN Reported				2 Core HRSNs Reported				3 or More Core HRSNs Reported			
	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years
<b>PCP visits/1,000 beneficiaries</b>	4,763	4,985	5,974	5,259	4,824	5,063	5,836	5,255	4,597	4,860	5,563	5,023
Std dev	6,005	6,156	6,909	6,405	6,135	6,116	6,688	6,340	5,966	6,411	6,635	6,369
P-value	N/A	N/A	N/A	N/A	0.23	0.10	0.01	0.93	0.00	0.00	0.00	0.00

P-values were calculated by comparing beneficiaries with two reported core HRSNs to beneficiaries with one reported core HRSN and by comparing beneficiaries with three or more reported core HRSNs to beneficiaries with two reported core HRSNs. No P-value was calculated for one reported core HRSN.

Source: RTI analysis of Chronic Conditions Data Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files, May 2015–December 2020.

Definitions: ACSC = ambulatory care sensitive condition; AHC = Accountable Health Communities; ED = emergency department; HRSN = health-related social need; N/A = not available; PBPM = per beneficiary per month; PCP = primary care provider.

Other Notes: Except for unplanned readmissions, all averages were weighted, using each beneficiary’s eligibility fraction as a weight variable.

**Exhibit I-4. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible Medicaid Beneficiaries, Quarterly Outcomes**

Outcome	1–3 Months After AHC Screening	4–6 Months After AHC Screening	7–9 Months After AHC Screening	10–12 Months After AHC Screening	13–15 Months After AHC Screening	16–18 Months After AHC Screening	19–21 Months After AHC Screening	22–24 Months After AHC Screening	Overall
<b>Number of beneficiaries</b>									
Unique intervention group beneficiaries	19,699	18,437	15,867	13,564	10,991	8,440	6,175	4,122	20,063
Unique control group beneficiaries	8,851	8,321	7,333	6,408	5,332	4,164	3,055	2,069	9,029
<b>Total expenditures (PBPM)</b>									
Intervention group adjusted mean	\$1,583	\$1,543	\$1,505	\$1,496	\$1,589	\$1,603	\$1,554	\$1,581	\$1,552
Control group adjusted mean	\$1,617	\$1,593	\$1,514	\$1,654	\$1,616	\$1,601	\$1,592	\$1,557	\$1,596
Difference	-34.13	-49.98	-9.76	-158.42	-27.46	2.68	-38.61	23.69	-44.18
% difference	-2.1	-3.1	-0.6	-9.6	-1.7	0.2	-2.4	1.5	-2.8
P-value	0.40	0.24	0.83	0.00	0.61	0.97	0.60	0.80	0.38
<b>Admissions/1,000 beneficiaries</b>									
Intervention group adjusted mean	122	109	109	94	80	88	90	92	103
Control group adjusted mean	124	120	107	109	80	94	99	110	109
Difference	-3	-10	2	-15	0	-6	-8	-16	-6
% difference	-2.2	-8.6	1.8	-13.3	-0.1	-6.6	-8.3	-14.6	-5.4
P-value	0.54	0.02	0.66	0.00	0.98	0.30	0.23	0.07	0.24
<b>ACSC admissions/1,000 beneficiaries</b>									
Intervention group adjusted mean	17	12	12	12	13	13	11	11	13
Control group adjusted mean	16	13	12	14	14	13	13	13	14
Difference	1	-1	0	-2	-1	0	-2	-2	-1
% difference	8.3	-9.6	1.4	-14.7	-4.4	-2.9	-15.6	-14.6	-3.7
P-value	0.40	0.38	0.92	0.26	0.75	0.86	0.39	0.51	0.77

(continued)

**Exhibit I-4. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible Medicaid Beneficiaries, Quarterly Outcomes (continued)**

Outcome	1–3 Months After AHC Screening	4–6 Months After AHC Screening	7–9 Months After AHC Screening	10–12 Months After AHC Screening	13–15 Months After AHC Screening	16–18 Months After AHC Screening	19–21 Months After AHC Screening	22–24 Months After AHC Screening	Overall
<b>Unplanned readmissions/1,000 discharges</b>									
Intervention group discharges	1,590	1,258	1,045	740	657	457	292	149	6,188
Control group discharges	774	621	468	448	332	243	164	85	3,135
Intervention group adjusted mean	226	225	212	236	240	255	202	246	227
Control group adjusted mean	243	202	260	280	272	212	218	195	240
Difference	-16	22	-49	-46	-31	42	-17	56	-13
% difference	-6.7	11.1	-18.7	-16.5	-11.3	19.9	-7.8	28.6	-5.4
P-value	0.37	0.25	0.04	0.08	0.29	0.20	0.67	0.33	0.60
<b>Follow-up visits within 14 days of discharge/1,000 discharges</b>									
Intervention group adjusted mean	482	475	471	504	453	467	431	493	475
Control group adjusted mean	497	471	480	502	481	464	467	477	484
Difference	-15	3	-9	2	-28	3	-37	16	-9
% difference	-3.1	0.7	-1.9	0.3	-5.9	0.6	-7.9	3.5	-1.8
P-value	0.46	0.88	0.73	0.96	0.39	0.94	0.44	0.80	0.76
<b>ED visits within 30 days of discharge/1,000 discharges</b>									
Intervention group adjusted mean	371	366	361	376	414	414	364	424	377
Control group adjusted mean	379	354	348	384	433	383	460	341	378
Difference	-8	13	13	-8	-19	30	-97	84	0
% difference	-2.1	3.5	3.6	-2.1	-4.3	7.9	-21.2	24.6	-0.1
P-value	0.69	0.57	0.61	0.77	0.56	0.42	0.04	0.19	0.99

(continued)

**Exhibit I-4. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible Medicaid Beneficiaries, Quarterly Outcomes (continued)**

Outcome	1–3 Months After AHC Screening	4–6 Months After AHC Screening	7–9 Months After AHC Screening	10–12 Months After AHC Screening	13–15 Months After AHC Screening	16–18 Months After AHC Screening	19–21 Months After AHC Screening	22–24 Months After AHC Screening	Overall
<b>ED visits/1,000 beneficiaries</b>									
Intervention group adjusted mean	824	738	669	621	668	629	588	568	696
Control group adjusted mean	862	743	695	639	691	660	616	590	720
Difference	-35	-5	-24	-17	-21	-28	-25	-20	-22
% difference	-4.1	-0.7	-3.5	-2.7	-3.0	-4.2	-4.0	-3.4	-3.0
P-value	0.002	0.66	0.03	0.15	0.12	0.06	0.14	0.36	0.08
<b>Avoidable ED visits/1,000 beneficiaries</b>									
Intervention group adjusted mean	395	347	304	287	339	294	253	256	327
Control group adjusted mean	406	347	327	294	343	296	279	258	336
Difference	-10	0	-22	-7	-2	-2	-22	-2	-8
% difference	-2.4	0.0	-6.6	-2.3	-0.7	-0.6	-7.9	-0.7	-2.5
P-value	0.19	0.99	0.00	0.41	0.78	0.85	0.04	0.90	0.32
<b>PCP visits/1,000 beneficiaries</b>									
Intervention group adjusted mean	1,393	1,243	1,183	1,159	1,222	1,177	1,151	1,098	1,235
Control group adjusted mean	1,364	1,262	1,188	1,161	1,235	1,181	1,122	1,135	1,234
Difference	28	-18	-5	-2	-13	-3	29	-39	0
% difference	2.1	-1.4	-0.4	-0.2	-1.0	-0.3	2.6	-3.4	0.0
P-value	0.05	0.21	0.73	0.91	0.50	0.88	0.23	0.23	0.99

P-values compare the intervention group means with the control group mean.

Source: RTI analysis of Chronic Conditions Data Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files, May 2015–December 2020.

Definitions: ACSC = ambulatory care sensitive condition; AHC = Accountable Health Communities; ED = emergency department; PBPM = per beneficiary per month; PCP = primary care provider.

Other Notes: Except for unplanned readmissions and follow-up visits within 14 days of discharge, all averages were weighted, using each beneficiary’s eligibility fraction as a weight variable. The total expenditure PBPM (\$) impact was estimated using a generalized linear model with a Gaussian error distribution and log link. The inpatient admission, ACSC admission, ED visit, avoidable ED visit, and PCP visit outcomes were estimated using a Poisson specification. The unplanned readmission and follow-up visit within 14 days of discharge outcomes were estimated using a logistic specification.

**Exhibit I-5. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible Medicaid Beneficiaries, Yearly Outcomes**

<b>Outcome</b>	<b>1–12 Months After AHC Screening</b>	<b>13–24 Months After AHC Screening</b>	<b>Overall</b>
<b>Follow-up visits within 30 days after an MH discharge/1,000 discharges</b>			
Intervention group discharges	735	524	1259
Control group discharges	318	235	553
Intervention group adjusted mean	0.43	0.46	0.44
Control group adjusted mean	0.43	0.49	0.45
Difference	0.00	-0.02	-0.01
% difference	0.0	-4.9	-2.2
P-value	0.999	0.54	0.78
<b>Asthma Medication Ratio &gt; %50</b>			
Unique intervention group beneficiaries	1,256	318	1,369
Unique control group beneficiaries	639	168	701
Intervention group adjusted mean	44	47	45
Control group adjusted mean	43	39	42
Difference	1	8	3
% difference	2.1	19.6	7.7
P-value	0.71	0.11	0.32
<b>Treatment for respiratory illnesses</b>			
Unique intervention group beneficiaries	19,976	11,219	20,063
Unique control group beneficiaries	8,994	5,412	9,029
Intervention group adjusted mean	48	46	47
Control group adjusted mean	49	47	48
Difference	-1.1	-1.3	-1.2
% difference	-2.2	-2.8	-2.4
P-value	0.07	0.06	0.07
<b>Antidepressant medication management, 12 weeks</b>			
Unique intervention group beneficiaries	537	109	628
Unique control group beneficiaries	244	50	286
Intervention group adjusted mean	53	51	52
Control group adjusted mean	54	54	54
Difference	-1	-3	-2
% difference	-2.4	-5.9	-3.6
P-value	0.73	0.70	0.72
<b>Antidepressant medication management, 6 months</b>			
Unique intervention group beneficiaries	537	109	628
Unique control group beneficiaries	244	50	286
Intervention group adjusted mean	35	33	34
Control group adjusted mean	34	36	35
Difference	1	-4	-1
% difference	2.2	-9.9	-2.1
P-value	0.83	0.65	0.89

(continued)

**Exhibit I-5. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible Medicaid Beneficiaries, Yearly Outcomes (continued)**

Outcome	1–12 Months After AHC Screening	13–24 Months After AHC Screening	Overall
<b>Initiation of AOD treatment</b>			
Unique intervention group beneficiaries	1,158	455	1,472
Unique control group beneficiaries	545	230	710
Intervention group adjusted mean	61	61	61
Control group adjusted mean	58	56	57
Difference	3	5	4
% difference	5.6	8.1	6.4
P-value	0.20	0.25	0.22

P-values compare the intervention group means with the control group mean.

Source: RTI analysis of Chronic Conditions Data Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files, May 2015–December 2020.

Definitions: AOD = alcohol or other drug; MH = mental health.

Other Notes: Except for follow-up visits within 30 days of a mental health discharge, all averages were weighted, using each beneficiary’s eligibility fraction as a weight variable. All outcomes were estimated using a logistic specification.

**Exhibit I-6. Difference-in-Differences Results for Alignment Track Navigation-Eligible Medicaid Beneficiaries and Assistance Track Control Group Medicaid Beneficiaries, Quarterly Outcomes**

Outcome	1–36 Months Before AHC Screening	1–3 Months After AHC Screening	4–6 Months After AHC Screening	7–9 Months After AHC Screening	10–12 Months After AHC Screening	13–15 Months After AHC Screening	16–18 Months After AHC Screening	19–21 Months After AHC Screening	22–24 Months After AHC Screening	Overall
<b>Number of beneficiaries</b>										
Unique Alignment Track beneficiaries	37,709	36,709	34,041	28,873	24,912	19,641	14,598	10,266	6,287	37,128
Unique Assistance Track control group beneficiaries	9,072	8,817	8,265	7,276	6,346	5,266	4,112	3,017	2,040	8,926
<b>Total expenditures (PBPM)</b>										
Alignment Track adjusted mean	\$1,436	\$1,811	\$1,707	\$1,691	\$1,677	\$1,678	\$1,680	\$1,703	\$1,817	\$1,720
Assistance Track control group adjusted mean	\$1,367	\$1,772	\$1,790	\$1,679	\$1,850	\$1,697	\$1,740	\$1,740	\$1,755	\$1,757
Difference-in-differences		-\$30	-\$152	-\$57	-\$242	-\$88	-\$129	-\$107	-\$7	-\$107
Percentage change		-2.1	-10.6	-4.0	-16.9	-6.1	-9.0	-7.4	-0.5	-7.4
P-value		0.75	0.11	0.48	0.11	0.45	0.39	0.53	0.97	0.36
<b>Admissions/1,000 beneficiaries</b>										
Alignment Track adjusted mean	121	160	140	133	121	86	98	102	118	128
Assistance Track control group adjusted mean	126	163	154	144	152	114	128	128	149	146
Difference-in-differences		3	-7	-4	-23	-26	-24	-17	-21	-11
Percentage change		2.8	-6.1	-3.7	-19.2	-21.3	-19.7	-14.4	-17.7	-9.5
P-value		0.74	0.47	0.68	0.15	0.14	0.04	0.23	0.23	0.37

(continued)

**Exhibit I-6. Difference-in-Differences Results for Alignment Track Navigation-Eligible Medicaid Beneficiaries and Assistance Track Control Group Medicaid Beneficiaries, Quarterly Outcomes (continued)**

Outcome	1–36 Months Before AHC Screening	1–3 Months After AHC Screening	4–6 Months After AHC Screening	7–9 Months After AHC Screening	10–12 Months After AHC Screening	13–15 Months After AHC Screening	16–18 Months After AHC Screening	19–21 Months After AHC Screening	22–24 Months After AHC Screening	Overall
<b>ACSC admissions/1,000 beneficiaries</b>										
Alignment Track adjusted mean	14	20	16	17	15	18	16	17	15	17
Assistance Track control group adjusted mean	16	23	20	19	21	21	19	18	18	21
Difference-in-differences		0.02	-1	0.3	-2	-0.4	-0.1	1	-0.5	-0.5
Percentage change		0.1	-9.4	2.5	-17.6	-2.9	-0.7	9.4	-3.4	-3.8
P-value		0.99	0.53	0.92	0.49	0.91	0.97	0.68	0.91	0.85
<b>Unplanned readmissions/1,000 discharges</b>										
Alignment Track discharges	30,915	4,270	3,107	2,392	1,679	1,195	793	489	305	14,230
Assistance Track control group discharges	6,110	824	656	489	466	339	246	166	85	3,271
Alignment Track adjusted mean	233	304	302	292	301	297	324	237	271	299
Assistance Track control group adjusted mean	251	314	280	347	344	320	308	310	334	316
Difference-in-differences		11	43	-35	-22	-3	36	-50	-40	3
Percentage change		4.5	18.2	-15.0	-9.4	-1.1	15.3	-21.6	-17.2	1.4
P-value		0.54	0.20	0.36	0.65	0.97	0.46	0.54	0.65	0.93
<b>Follow-up visits within 14 days of discharge/1,000 discharges</b>										
Alignment Track adjusted mean	504	493	487	480	506	458	442	449	555	485
Assistance Track control group adjusted mean	487	496	491	477	475	483	451	475	498	485
Difference-in-differences		-20	-21	-14	14	-43	-27	-44	40	-17
Percentage change		-4.0	-4.1	-2.8	2.8	-8.5	-5.3	-8.7	8.0	-3.4
P-value		0.32	0.48	0.69	0.53	0.38	0.47	0.31	0.56	0.57

(continued)

**Exhibit I-6. Difference-in-Differences Results for Alignment Track Navigation-Eligible Medicaid Beneficiaries and Assistance Track Control Group Medicaid Beneficiaries, Quarterly Outcomes (continued)**

Outcome	1–36 Months Before AHC Screening	1–3 Months After AHC Screening	4–6 Months After AHC Screening	7–9 Months After AHC Screening	10–12 Months After AHC Screening	13–15 Months After AHC Screening	16–18 Months After AHC Screening	19–21 Months After AHC Screening	22–24 Months After AHC Screening	Overall
<b>ED visits within 30 days of discharge/1,000 discharges</b>										
Alignment Track adjusted mean	398	409	384	403	421	404	425	353	420	402
Assistance Track control group adjusted mean	380	386	388	420	427	428	385	492	384	404
Difference-in-differences		5	-23	-36	-26	-44	22	-161	18	-20
Percentage change		1.2	-5.8	-9.1	-6.4	-11.1	5.5	-40.5	4.6	-5.1
P-value		0.78	0.37	0.09	0.28	0.31	0.72	0.00	0.79	0.46
<b>ED visits/1,000 beneficiaries</b>										
Alignment Track adjusted mean	903	1016	867	799	725	712	669	636	630	810
Assistance Track control group adjusted mean	817	951	829	781	728	737	730	683	701	800
Difference-in-differences		-33	-46	-61	-76	-95	-126	-108	-135	-69
Percentage change		-3.6	-5.1	-6.8	-8.4	-10.5	-14.0	-12.0	-15.0	-7.7
P-value		0.54	0.23	0.14	0.09	0.02	0.002	0.02	0.10	0.13
<b>Avoidable ED visits/1,000 beneficiaries</b>										
Alignment Track adjusted mean	392	438	381	344	310	337	300	269	245	353
Assistance Track control group adjusted mean	376	430	375	355	320	362	325	299	313	363
Difference-in-differences		-9	-9	-24	-23	-33	-32	-36	-71	-22
Percentage change		-2.4	-2.3	-6.2	-5.8	-8.4	-8.1	-9.1	-18.3	-5.6
P-value		0.71	0.57	0.12	0.25	0.13	0.16	0.11	0.13	0.30

(continued)

**Exhibit I-6. Difference-in-Differences Results for Alignment Track Navigation-Eligible Medicaid Beneficiaries and Assistance Track Control Group Medicaid Beneficiaries, Quarterly Outcomes (continued)**

Outcome	1–36 Months Before AHC Screening	1–3 Months After AHC Screening	4–6 Months After AHC Screening	7–9 Months After AHC Screening	10–12 Months After AHC Screening	13–15 Months After AHC Screening	16–18 Months After AHC Screening	19–21 Months After AHC Screening	22–24 Months After AHC Screening	Overall
<b>PCP visits/1,000 beneficiaries</b>										
Alignment Track adjusted mean	1,393	1,720	1,547	1,424	1,404	1,441	1,396	1,408	1,462	1,507
Assistance Track adjusted mean	1,266	1,477	1,388	1,323	1,284	1,385	1,352	1,278	1,321	1,369
Difference-in-differences		93	20	-31	-8	-79	-89	2	9	1
Percentage change		6.7	1.4	-2.2	-0.6	-5.7	-6.4	0.2	0.7	0.1
P-value		0.27	0.82	0.76	0.94	0.44	0.52	0.99	0.96	0.99

P-values compare the intervention group means with the control group mean.

Source: RTI analysis of Chronic Conditions Data Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files, May 2015–December 2020.

Definitions: ACSC = ambulatory care sensitive condition; AHC = Accountable Health Communities; ED = emergency department; PBPM = per beneficiary per month; PCP = primary care provider.

Other Notes: Except for unplanned readmissions and follow-up visits within 14 days of discharge, all averages were weighted, using each beneficiary’s eligibility fraction as a weight variable times a propensity score weight. The total expenditure PBPM (\$) impact was estimated using a generalized linear model with a Gaussian error distribution and log link. The inpatient admission, ACSC admission, ED visit, avoidable ED visit, and PCP visit outcomes were estimated using a Poisson specification. The unplanned readmission and follow-up visit within 14 days of discharge outcomes were estimated using a logistic specification.

**Exhibit I-7. Difference-in-Differences Results for Alignment Track Navigation-Eligible Medicaid Beneficiaries and Assistance Track Control Group Medicaid Beneficiaries, Yearly Outcomes**

Outcome	Baseline	1–12 Months After AHC Screening	13–24 Months After AHC Screening	Overall
<b>Follow-up visits within 30 days after an MH discharge/1,000 discharges</b>				
Unique Alignment Track beneficiaries	1,286	640	212	852
Unique Assistance Track control group beneficiaries	203	105	59	145
Alignment Track adjusted mean	362	420	471	438
Assistance Track control group adjusted mean	426	342	638	446
Difference-in-differences		130	-100	49
Percentage change		36.0	-27.7	13.6
P-value		0.07	0.61	0.67
<b>Asthma Medication Ratio &gt; %50</b>				
Unique Alignment Track beneficiaries	4,934	2,377	534	2,598
Unique Assistance Track control group beneficiaries	1,197	636	165	696
Alignment Track adjusted mean	38	39	36	38
Assistance Track control group adjusted mean	41	42	36	40
Difference-in-differences		0	3	1
Percentage change		-0.9	8.0	2.2
P-value		0.89	0.59	0.81
<b>Treatment for respiratory illnesses</b>				
Unique Alignment Track beneficiaries	37,709	37,071	19,922	37,128
Unique Assistance Track control group beneficiaries	9,072	8,909	5,340	8,926
Alignment Track adjusted mean	45	46	42	45
Assistance Track control group adjusted mean	47	47	45	47
Difference-in-differences		1.0	-0.4	0.5
Percentage change		2.3	-1.0	1.2
P-value		0.29	0.77	0.65
<b>Antidepressant medication management, 12 weeks</b>				
Unique Alignment Track beneficiaries	4,582	1,242	226	1,415
Unique Assistance Track control group beneficiaries	819	243	50	285
Alignment Track adjusted mean	57	47	54	50
Assistance Track control group adjusted mean	56	54	43	50
Difference-in-differences		-7	10	-1
Percentage change		-12.1	18.5	-1.4
P-value		0.23	0.11	0.90

(continued)

**Exhibit I-7. Difference-in-Differences Results for Alignment Track Navigation-Eligible Medicaid Beneficiaries and Assistance Track Control Group Medicaid Beneficiaries, Yearly Outcomes (continued)**

Outcome	Baseline	1–12 Months After AHC Screening	13–24 Months After AHC Screening	Overall
<b>Antidepressant medication management, 6 months</b>				
Unique Alignment Track beneficiaries	4,582	1,242	226	1,415
Unique Assistance Track control group beneficiaries	819	243	50	285
Alignment Track adjusted mean	41	32	40	35
Assistance Track control group adjusted mean	43	33	36	34
Difference-in-differences		-1	6	1
Percentage change		-1.9	13.8	3.6
P-value		0.83	0.39	0.75
<b>Initiation of AOD treatment</b>				
Unique Alignment Track beneficiaries	6,716	2,900	988	3,558
Unique Assistance Track control group beneficiaries	1,081	544	227	707
Alignment Track adjusted mean	64	63	64	64
Assistance Track control group adjusted mean	64	62	62	62
Difference-in-differences		2	2	2
Percentage change		3.1	3.7	3.3
P-value		0.57	0.54	0.56

P-values compare the intervention group means with the control group mean.

Source: RTI analysis of Chronic Conditions Data Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files, May 2015–December 2020.

Definitions: AOD = alcohol or other drug; MH = mental health.

Other Notes: Except for follow-up visits within 30 days of a mental health discharge, all averages were weighted, using each beneficiary's eligibility fraction as a weight variable times a propensity score weight. All outcomes were estimated using a logistic specification.

**Exhibit I-8. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible Medicaid Beneficiaries by Subpopulation**

<b>Outcome</b>	<b>Non-Hispanic White</b>	<b>Hispanic and/or Nonwhite</b>	<b>Nondisabled</b>	<b>Disabled</b>	<b>1 HRSN</b>	<b>More than 1 HRSN</b>	<b>Urban</b>	<b>Rural</b>
<b>Beneficiary-Level Outcomes</b>								
Unique intervention group beneficiaries	9,429	8,156	16,480	3,583	8,265	11,798	16,657	3,406
Unique control group beneficiaries	4,841	3,823	7,411	1,618	3,252	5,777	7,368	1,661
<b>Total Expenditures (PBPM)</b>								
Intervention group adjusted mean	\$1,422	\$1,559	\$1,042	\$3,473	\$1,516	\$1,480	\$1,586	\$1,201
Control group adjusted mean	\$1,420	\$1,526	\$1,065	\$3,616	\$1,554	\$1,678	\$1,636	\$1,279
Difference in means	\$1	\$33	-\$22	-\$138	-\$38	-\$199	-\$50	-\$78
P-value (for difference)	0.98	0.25	0.28	0.00	0.05	0.01	0.01	0.06
Interaction		-\$32		-\$116		-\$161		-\$27
P-value (for interaction)		0.43		0.01		0.03		0.56
<b>ED Visits per 1,000 Beneficiaries</b>								
Intervention group adjusted mean	649	649	577	892	604	675	653	621
Control group adjusted mean	689	656	624	821	589	711	674	650
Difference in means	-42	-7	-46	80	14	-36	-21	-31
P-value (for difference)	0.00	0.29	0.00	0.00	0.04	0.00	0.00	0.00
Interaction		35		-126		-51		-10
P-value (for interaction)		0.00		0.00		0.00		0.40
<b>Inpatient Admissions per 1,000 Beneficiaries</b>								
Intervention group adjusted mean	101	101	83	159	96	104	106	79
Control group adjusted mean	108	106	88	168	90	116	113	86
Difference in means	-8	-5	-4	-12	6	-12	-6	-7
P-value (for difference)	0.01	0.07	0.02	0.04	0.05	0.00	0.00	0.08
Interaction		3		-8		-17		-1
P-value (for interaction)		0.46		0.22		0.00		0.88

(continued)

**Exhibit I-8. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible Medicaid Beneficiaries by Subpopulation (continued)**

Outcome	Non-Hispanic White	Hispanic and/or Nonwhite	Nondisabled	Disabled	1 HRSN	More than 1 HRSN	Urban	Rural
<b>Discharge-Level Outcomes</b>								
<b>Unplanned Readmissions per 1,000 Discharges</b>								
Intervention group number of discharges	3,217	2,970	3,989	2,199	2,349	3,839	5,393	795
Control group number of discharges	1,316	1,504	1,960	1,175	932	2,203	2,614	521
Intervention group adjusted mean	222	225	198	273	231	224	232	186
Control group adjusted mean	215	239	210	284	251	233	244	211
Difference in means	9	-14	-13	-12	-19	-9	-12	-25
P-value (for difference)	0.51	0.33	0.22	0.48	0.24	0.40	0.23	0.27
Interaction		-23		2		10		-13
P-value (for interaction)		0.25		0.93		0.61		0.60

P-values (for difference) compare the intervention group means with the control group mean within each subpopulation; P-values (for interaction) compare the difference in means across each subpopulation pair.

Sample sizes represent the total number of unique beneficiaries observed during the post-screening period or total number of discharges during the post-screening period.

Source: RTI analysis of Chronic Conditions Data Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files, May 2015–December 2020.

Definitions: ED = emergency department; PBPM = per beneficiary per month; PCP = primary care provider.

Other Notes: Except for unplanned readmissions, all averages were weighted, using each beneficiary’s eligibility fraction as a weight variable. The total expenditure PBPM (\$) impact was estimated using a generalized linear model with a Gaussian error distribution and log link. The inpatient admission and ED visit outcomes were estimated using a Poisson specification. The unplanned readmission outcome was estimated using a logistic specification.

**Exhibit I-9. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible Medicaid Beneficiaries by Type of HRSN**

Outcome	No Housing Need	Housing Need	No Food Need	Food Need	No Transportation Need	Transportation Need	No Utility Need	Utility Need	No Safety Need	Safety Need
<b>Beneficiary-Level Outcomes</b>										
Unique intervention group beneficiaries	10,344	9,718	6,394	13,668	11,889	8,173	12,521	7,541	19,052	1,010
Unique control group beneficiaries	4,337	4,692	2,745	6,284	5,063	3,966	5,297	3,732	8,482	547
<b>Total Expenditures (PBPM)</b>										
Intervention group adjusted mean	\$1,432	\$1,602	\$1,528	\$1,508	\$1,464	\$1,583	\$1,486	\$1,563	\$1,516	\$1,480
Control group adjusted mean	\$1,514	\$1,606	\$1,496	\$1,589	\$1,491	\$1,648	\$1,550	\$1,581	\$1,554	\$1,678
Difference in means	-\$82	-\$5	\$30	-\$80	-\$26	-\$65	-\$63	-\$17	-\$38	-\$199
P-value (for D-in-D)	0.00	0.85	0.38	0.00	0.29	0.02	0.01	0.57	0.05	0.01
Interaction		\$77		-\$110		-\$39		\$47		-\$161
P-value (for interaction)		0.04		0.01		0.30		0.22		0.03
<b>ED Visits per 1,000 Beneficiaries</b>										
Intervention group adjusted mean	598	698	657	643	575	741	679	589	637	823
Control group adjusted mean	613	720	666	671	573	777	688	642	646	986
Difference in means	-14	-22	-10	-28	2	-38	-9	-52	-10	-178
P-value (for difference)	0.03	0.00	0.23	0.00	0.79	0.00	0.14	0.00	0.04	0.00
Interaction		-8		-18		-39		-43		-168
P-value (for interaction)		0.37		0.08		0.00		0.00		0.00

(continued)

**Exhibit I-9. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible Medicaid Beneficiaries by Type of HRSN (continued)**

Outcome	No Housing Need	Housing Need	No Food Need	Food Need	No Transportation Need	Transportation Need	No Utility Need	Utility Need	No Safety Need	Safety Need
<b>Inpatient Admissions per 1,000 Beneficiaries</b>										
Intervention group adjusted mean	93	109	103	100	87	119	107	90	100	119
Control group adjusted mean	103	111	106	108	85	131	113	99	102	177
Difference in means	-9	-2	-3	-7	2	-13	-6	-9	-2	-64
P-value (for difference)	0.00	0.48	0.40	0.00	0.34	0.00	0.03	0.00	0.30	0.00
Interaction		7		-5		-15		-3		-62
P-value (for interaction)		0.05		0.25		0.00		0.39		0.00
<b>Discharge-Level Outcomes</b>										
<b>Unplanned Readmissions per 1,000 Discharges</b>										
Intervention group number of discharges	2,996	3,192	1,957	4,231	2,966	3,222	4,258	1,930	DNC	DNC
Control group number of discharges	1,454	1,681	922	2,213	1,310	1,825	1,977	1,158	DNC	DNC
Intervention group adjusted mean	216	235	233	223	222	230	236	202	DNC	DNC
Control group adjusted mean	248	231	268	227	229	247	252	213	DNC	DNC
Difference in means	-30	3	-34	-4	-6	-17	-16	-10	DNC	DNC
P-value (for difference)	0.02	0.79	0.05	0.71	0.68	0.17	0.17	0.49	DNC	DNC
Interaction		34		30		-12		6	DNC	DNC
P-value (for interaction)		0.07		0.14		0.53		0.76	DNC	DNC

P-values (for difference) compare the intervention group means with the control group mean within each subpopulation; P-values (for interaction) compare the difference in means across each subpopulation pair.

Sample sizes represent the total number of unique beneficiaries observed during the post-screening period or total number of discharges during the post-screening period.

Source: RTI analysis of Chronic Conditions Data Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files, May 2015–December 2020.

Definitions: DNC = did not converge; ED = emergency department; PBPM = per beneficiary per month; PCP = primary care provider.

Other Notes: Except for unplanned readmissions, all averages were weighted, using each beneficiary's eligibility fraction as a weight variable. The total expenditure PBPM (\$) impact was estimated using a generalized linear model with a Gaussian error distribution and log link. The inpatient admission and ED visit outcomes were estimated using a Poisson specification. The unplanned readmission outcome was estimated using a logistic specification.

**Exhibit I-10. Difference-in-Differences Results for Alignment Track Navigation-Eligible Medicaid Beneficiaries and Assistance Track Control Group Medicaid Beneficiaries by Subpopulation**

Outcome	Non-Hispanic White	Hispanic and/or Non-White	Non-disabled	Disabled	1 HRSN	More Than 1 HRSN	Urban	Rural
<b>Beneficiary-Level Outcomes</b>								
Unique Alignment Track beneficiaries	19,656	12,336	30,756	7,371	14,211	23,916	33,843	4,284
Unique Assistance Track control group beneficiaries	3,884	4,277	7,735	1,779	3,478	6,036	7,821	1,693
<b>Total Expenditures (PBPM)</b>								
Difference-in-differences	-\$108	-\$78	-\$82	-\$218	-\$78	-\$126	-\$116	-\$48
P-value (for D-in-D)	0.23	0.53	0.17	0.41	0.29	0.24	0.23	0.71
Interaction		\$29		-\$137		-\$48		\$68
P-value (for Interaction)		0.78		0.60		0.56		0.63
<b>ED Visits per 1,000 Beneficiaries</b>								
Difference-in-differences	-140	-26	-89	7	-48	-82	-57	-161
P-value (for D-in-D)	0.00	0.58	0.02	0.92	0.27	0.04	0.15	0.00
Interaction		114		96		-35		-104
P-value (for interaction)		0.06		0.14		0.26		0.04
<b>Inpatient Admissions per 1,000 Beneficiaries</b>								
Difference-in-differences	-23	-9	-11	-10	-1	-17	-8	-40
P-value (for D-in-D)	0.11	0.49	0.24	0.61	0.91	0.10	0.44	0.01
Interaction		14		1		-16		-32
P-value (for interaction)		0.48		0.96		0.02		0.04
<b>Discharge-Level Outcomes</b>								
<b>Unplanned Readmissions per 1,000 Discharges</b>								
Alignment Track number of discharges	3,053	3,307	4,702	3,667	2,662	5,707	7,677	692
Assistance Track control group number of discharges	1,316	1,504	1,960	1,175	932	2,203	2,614	521
Difference-in-differences	53	-23	-2	4	-43	22	DNC	DNC
P-value (for D-in-D)	0.13	0.45	0.93	0.89	0.36	0.24	DNC	DNC
Interaction		-76		6		65		DNC
P-value (for interaction)		0.12		0.87		0.20		DNC

P-values (for D-in-D) test for differences in changes in outcomes between the intervention and comparison groups within each subpopulation; P-values (for interaction) compare the difference in the D-in-D estimates between each subpopulation pair.

Sample sizes represent the total number of unique beneficiaries observed during the post-screening period or total number of discharges during the post-screening period.

Source: RTI analysis of Chronic Conditions Data Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files, May 2015–December 2020.

Definitions: D-in-D = difference-in-differences; ED = emergency department; PBPM = per beneficiary per month.

Other Notes: Except for unplanned readmissions, all averages were weighted, using each beneficiary's eligibility fraction as a weight variable times a propensity score weight. The total expenditure PBPM (\$) impact was estimated using a generalized linear model with a Gaussian error distribution and log link. The inpatient admission and ED visit outcomes were estimated using a Poisson specification. The unplanned readmission outcome was estimated using a logistic specification.

**Exhibit I-11. Difference-in-Differences Results for Alignment Track Navigation-Eligible Medicaid Beneficiaries and Assistance Track Control Group Medicaid Beneficiaries by Type of HRSN**

<b>Outcome</b>	<b>No Housing Need</b>	<b>Housing Need</b>	<b>No Food Need</b>	<b>Food Need</b>	<b>No Transportation Need</b>	<b>Transportation Need</b>	<b>No Utility Need</b>	<b>Utility Need</b>	<b>No Safety Need</b>	<b>Safety Need</b>
<b>Beneficiary-Level Outcomes</b>										
Unique Alignment Track beneficiaries	18,033	20,094	10,516	27,611	21,277	16,850	26,448	11,679	35,524	2,603
Unique Assistance Track control group beneficiaries	4,822	4,692	3,230	6,284	5,548	3,966	5,782	3,732	8,967	547
<b>Total Expenditures (PBPM)</b>										
Difference-in-differences	-\$92	-\$129	-\$62	-\$130	-\$98	-\$121	-\$69	-\$196	-\$95	-\$290
P-value (for D-in-D)	0.26	0.22	0.48	0.19	0.19	0.27	0.46	0.06	0.28	0.18
Interaction		-\$37		-\$68		-\$23		-\$126		-\$195
P-value (for interaction)		0.56		0.40		0.72		0.16		0.33
<b>ED Visits per 1,000 Beneficiaries</b>										
Difference-in-differences	-98	-42	-71	-71	-13	-140	-60	-92	-67	-105
P-value (for D-in-D)	0.01	0.35	0.18	0.07	0.69	0.00	0.19	0.01	0.06	0.43
Interaction		57		0		-127		-32		-38
P-value (for interaction)		0.13		0.99		0.00		0.38		0.76
<b>Inpatient Admissions per 1,000 Beneficiaries</b>										
Difference-in-differences	-16	-7	-9	-13	-5	-18	-9	-16	-9	-33
P-value (for D-in-D)	0.12	0.60	0.55	0.17	0.66	0.09	0.42	0.12	0.34	0.10
Interaction		9		-4		-14		-7		-23
P-value (for interaction)		0.44		0.74		0.04		0.41		0.17

(continued)

**Exhibit I-11. Difference-in-Differences Results for Alignment Track Navigation-Eligible Medicaid Beneficiaries and Assistance Track Control Group Medicaid Beneficiaries by Type of HRSN (continued)**

Outcome	No Housing Need	Housing Need	No Food Need	Food Need	No Transportation Need	Transportation Need	No Utility Need	Utility Need	No Safety Need	Safety Need
<b>Discharge-Level Outcomes</b>										
Alignment Track discharges	3,463	4,879	2,250	6,092	3,512	4,830	6,282	2,060	7,753	589
Assistance Track control group discharges	1,454	1,681	922	2,213	1,310	1,825	1,977	1,158	1,454	1,681
<b>Unplanned Readmissions per 1,000 Discharges</b>										
Difference-in-differences	2	-19	-37	14	-61	29	-16	11	1	-82
P-value (for D-in-D)	0.94	0.36	0.37	0.48	0.10	0.05	0.47	0.53	0.97	0.05
Interaction		-22		51		90		27		-83
P-value (for interaction)		0.53		0.28		0.02		0.26		0.05

P-values (for D-in-D) test for differences in changes in outcomes between the intervention and comparison groups within each subpopulation; P-values (for interaction) compare the difference in the D-in-D estimates between each subpopulation pair.

Sample sizes represent the total number of unique beneficiaries observed during the post-screening period or total number of discharges during the post-screening period.

Source: RTI analysis of Chronic Conditions Data Warehouse Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files, May 2015–December 2020.

Definitions: D-in-D = difference-in-differences; ED = emergency department; PBPM = per beneficiary per month.

Other Notes: Except for unplanned readmissions, all averages were weighted, using each beneficiary’s eligibility fraction as a weight variable times a propensity score weight. The total expenditure PBPM (\$) impact was estimated using a generalized linear model with a Gaussian error distribution and log link. The inpatient admission and ED visit outcomes were estimated using a Poisson specification. The unplanned readmission outcome was estimated using a logistic specification.

# FFS Medicare

**Exhibit I-12. Baseline Expenditures and Utilization for Navigation-Eligible FFS Medicare Beneficiaries**

Measure/Year	Assistance Track Control Group				Assistance Track Intervention Group				Alignment Track Intervention Group			
	N	Mean	Std Dev	P-Value	N	Mean	Std Dev	P-Value	N	Mean	Std Dev	P-Value
<b>Total expenditures (PBPM)</b>												
3 years before AHC screening	3,843	\$1,558	\$2,823	Ref	9,531	\$1,528	\$2,630	0.58	15,405	\$1,737	\$2,968	0.00
2 years before AHC screening	3,930	\$1,796	\$3,079	Ref	9,603	\$1,808	\$3,037	0.83	16,114	\$2,066	\$4,031	0.00
1 year before AHC screening	4,007	\$2,947	\$4,384	Ref	9,568	\$2,985	\$4,326	0.64	16,635	\$3,224	\$4,775	0.00
All 3 baseline years	11,780	\$2,101	\$3,549	Ref	28,702	\$2,099	\$3,456	0.96	48,154	\$2,355	\$4,061	0.00
<b>ED expenditures (PBPM)</b>												
3 years before AHC screening	3,843	\$99	\$242	Ref	9,531	\$96	\$238	0.5	15,405	\$125	\$376	0.00
2 years before AHC screening	3,930	\$106	\$249	Ref	9,603	\$107	\$264	0.88	16,114	\$139	\$347	0.00
1 year before AHC screening	4,007	\$163	\$337	Ref	9,568	\$162	\$330	0.87	16,635	\$204	\$426	0.00
All 3 baseline years	11,780	\$123	\$281	Ref	28,702	\$121	\$281	0.62	48,154	\$156	\$386	0.00
<b>Inpatient expenditures (PBPM)</b>												
3 years before AHC screening	3,843	\$624	\$1,914	Ref	9,531	\$592	\$1,637	0.37	15,405	\$712	\$1,878	0.01
2 years before AHC screening	3,930	\$705	\$1,933	Ref	9,603	\$721	\$1,937	0.67	16,114	\$896	\$2,742	0.00
1 year before AHC screening	4,007	\$1,399	\$2,897	Ref	9,568	\$1,409	\$2,945	0.86	16,635	\$1,618	\$3,308	0.00
All 3 baseline years	11,780	\$910	\$2,321	Ref	28,702	\$903	\$2,265	0.78	48,154	\$1,083	\$2,748	0.00
<b>PAC expenditures (PBPM)</b>												
3 years before AHC screening	3,843	\$189	\$692	Ref	9,531	\$205	\$739	0.23	15,405	\$194	\$762	0.68
2 years before AHC screening	3,930	\$240	\$780	Ref	9,603	\$249	\$808	0.54	16,114	\$228	\$839	0.40
1 year before AHC screening	4,007	\$426	\$1,201	Ref	9,568	\$445	\$1,148	0.4	16,635	\$387	\$1,132	0.06
All 3 baseline years	11,780	\$285	\$924	Ref	28,702	\$298	\$919	0.19	48,154	\$271	\$932	0.15

(continued)

**Exhibit I-12. Baseline Expenditures and Utilization for Navigation-Eligible FFS Medicare Beneficiaries (continued)**

Measure/Year	Assistance Track Control Group				Assistance Track Intervention Group				Alignment Track Intervention Group			
	N	Mean	Std Dev	P-Value	N	Mean	Std Dev	P-Value	N	Mean	Std Dev	P-Value
<b>Admissions/1,000 beneficiaries</b>												
3 years before AHC screening	3,843	618	1,571	Ref	9,531	577	1,342	0.15	15,405	617	1,445	0.97
2 years before AHC screening	3,930	659	1,492	Ref	9,603	666	1,444	0.8	16,114	720	1,585	0.02
1 year before AHC screening	4,007	1,124	1,918	Ref	9,568	1,165	1,967	0.26	16,635	1,164	1,903	0.24
All 3 baseline years	11,780	801	1,686	Ref	28,702	800	1,624	0.95	48,154	839	1,677	0.03
<b>ACSC admissions/1,000 beneficiaries</b>												
3 years before AHC screening	3,843	137	629	Ref	9,531	128	603	0.43	15,405	133	621	0.74
2 years before AHC screening	3,930	132	533	Ref	9,603	160	614	0.01	16,114	164	655	0.00
1 year before AHC screening	4,007	261	843	Ref	9,568	270	891	0.58	16,635	258	818	0.85
All 3 baseline years	11,780	176	683	Ref	28,702	185	716	0.27	48,154	186	707	0.17
<b>Unplanned readmissions/1,000 discharges</b>												
3 years before AHC screening	1,926	231	422	Ref	4,500	211	408	0.08	7,674	219	414	0.28
2 years before AHC screening	2,103	227	419	Ref	5,127	217	412	0.34	9,217	237	425	0.33
1 year before AHC screening	3,533	279	448	Ref	8,691	267	442	0.19	15,058	263	440	0.05
All 3 baseline years	7,562	252	434	Ref	18,318	239	427	0.03	31,949	245	430	0.18
<b>ED visits/1,000 beneficiaries</b>												
3 years before AHC screening	3,843	1,985	4,408	Ref	9,531	1,933	4,253	0.54	15,405	2,390	5,588	0.00
2 years before AHC screening	3,930	2,047	4,426	Ref	9,603	2,047	4,770	1	16,114	2,516	5,780	0.00
1 year before AHC screening	4,007	2,913	5,732	Ref	9,568	2,822	5,722	0.4	16,635	3,474	6,424	0.00
All 3 baseline years	11,780	2,315	4,913	Ref	28,702	2,262	4,960	0.33	48,154	2,803	5,969	0.00

(continued)

**Exhibit I-12. Baseline Expenditures and Utilization for Navigation-Eligible FFS Medicare Beneficiaries (continued)**

Measure/Year	Assistance Track Control Group				Assistance Track Intervention Group				Alignment Track Intervention Group			
	N	Mean	Std Dev	P-Value	N	Mean	Std Dev	P-Value	N	Mean	Std Dev	P-Value
<b>PCP visits/1,000 beneficiaries</b>												
3 years before AHC screening	3,843	6,100	6,490	Ref	9,531	6,102	6,680	0.99	15,405	5,795	6,286	0.01
2 years before AHC screening	3,930	6,426	6,700	Ref	9,603	6,416	7,082	0.94	16,114	6,041	6,681	0.00
1 year before AHC screening	4,007	7,396	7,536	Ref	9,568	7,566	7,943	0.24	16,635	7,056	7,458	0.01
All 3 baseline years	11,780	6,642	6,945	Ref	28,702	6,686	7,274	0.56	48,154	6,309	6,858	0.00

P-values were calculated using the Assistance Track control group as the reference comparator.

Source: RTI analysis of Chronic Conditions Data Warehouse Medicare claims data, May 2015–December 2021.

Definitions: ACSC = ambulatory care sensitive condition; AHC = Accountable Health Communities; ED = emergency department; PAC = post-acute care; PBPM = per beneficiary per month; PCP = primary care provider.

Other Notes: Except for unplanned readmissions, all averages were weighted, using each beneficiary's eligibility fraction as a weight variable.

**Exhibit I-13. Baseline Expenditures and Utilization by AHC Eligibility Criteria for FFS Medicare Beneficiaries**

Measure	Self-reported < 2 ED Visits and No HRSNs				Self-reported ≥ 2 ED Visits and No HRSNs				Self-reported < 2 ED Visits and ≥ 1 HRSNs				Navigation-Eligible Beneficiaries			
													(Self-reported ≥ 2 ED Visits, and ≥ 1 HRSNs)			
	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years
<b>Unique beneficiaries</b>	113,655	121,252	130,518	142,339	50,034	51,335	52,715	57,932	24,633	25,860	26,903	31,316	29,011	29,888	30,458	35,927
<b>Total expenditures (PBPM)</b>	\$683	\$734	\$95	\$796	\$1,212	\$1,439	\$2,572	\$1,749	\$789	\$831	\$976	\$867	\$1,658	\$1,965	\$3,142	\$2,260
Std dev	\$1,474	\$1,623	\$1,963	\$1,713	\$2,226	\$2,571	\$3,620	\$2,937	\$1,831	\$1,978	\$2,188	\$2,009	\$2,868	\$3,645	\$4,655	\$3,853
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Ref	Ref	Ref	Ref
<b>ED expenditures (PBPM)</b>	\$22	\$22	\$30	\$25	\$53	\$60	\$112	\$75	\$32	\$29	\$34	\$32	\$112	\$125	\$186	\$141
Std dev	\$89	\$88	\$105	\$95	\$164	\$193	\$237	\$202	\$106	\$107	\$139	\$119	\$322	\$312	\$389	\$344
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Ref	Ref	Ref	Ref
<b>Inpatient expenditures (PBPM)</b>	\$206	\$218	\$324	\$252	\$430	\$518	\$1,159	\$707	\$252	\$260	\$322	\$279	\$668	\$824	\$1,543	\$1,014
Std dev	\$848	\$934	\$1,118	\$980	\$1,303	\$1,506	\$2,311	\$1,797	\$982	\$1,100	\$1,219	\$1,107	\$1,827	\$2,429	\$3,213	\$2,586
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Ref	Ref	Ref	Ref
<b>PAC expenditures (PBPM)</b>	\$73	\$82	\$106	\$88	\$161	\$203	\$388	\$252	\$84	\$95	\$106	\$95	\$200	\$239	\$414	\$285
Std dev	\$412	\$467	\$533	\$476	\$626	\$738	\$1,056	\$835	\$439	\$527	\$519	\$497	\$752	\$827	\$1,152	\$933
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Ref	Ref	Ref	Ref
<b>Admissions/1,000 beneficiaries</b>	177	181	259	207	396	455	961	607	214	207	236	219	609	699	1,165	826
Std dev	568	581	696	622	986	1,063	1,444	1,211	669	654	666	663	1,435	1,535	1,933	1,668
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Ref	Ref	Ref	Ref

(continued)

**Exhibit I-13. Baseline Expenditures and Utilization by AHC Eligibility Criteria for FFS Medicare Beneficiaries (continued)**

Measure	Self-reported < 2 ED Visits and No HRSNs				Self-reported ≥ 2 ED Visits and No HRSNs				Self-reported < 2 ED Visits and ≥ 1 HRSNs				Navigation-Eligible Beneficiaries			
													(Self-reported ≥ 2 ED Visits, and ≥ 1 HRSNs)			
	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years
<b>ACSC admissions/1,000 beneficiaries</b>	28	30	44	34	82	101	205	130	37	38	42	39	133	160	264	186
Std dev	212	222	274	239	407	461	632	513	255	263	273	264	620	633	848	711
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Ref	Ref	Ref	Ref
<b>Unplanned readmissions/1,000 discharges</b>	17,882	19,208	28,744	65,834	17,799	20,813	44,205	82,817	4,382	4,358	5,024	13,764	14,291	16,690	27,636	58,617
Mean	96	98	121	108	161	169	215	192	117	109	111	112	219	230	267	245
Std dev	295	298	326	310	368	375	411	394	322	311	314	316	414	421	442	430
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Ref	Ref	Ref	Ref
<b>ED visits/1,000 beneficiaries</b>	375	357	444	394	958	1,028	1,761	1,254	628	558	575	587	2,197	2,313	3,207	2,575
Std dev	1,122	1,043	1,121	1,097	2,521	2,642	2,950	2,737	1,556	1,452	1,720	1,582	5,093	5,325	6,154	5,565
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Ref	Ref	Ref	Ref
<b>PCP visits/1,000 beneficiaries</b>	4,134	4,158	4,552	4,290	5,443	5,703	6,994	6,056	4,439	4,460	4,756	4,554	5,938	6,215	7,267	6,477
Std dev	4,230	4,340	4,670	4,430	5,471	5,770	6,702	6,050	4,841	4,898	5,094	4,950	6,447	6,812	7,635	7,009
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Ref	Ref	Ref	Ref

P-values were calculated using the navigation-eligible group as the reference comparator.

Source: RTI analysis of Chronic Conditions Data Warehouse Medicare claims data, May 2015–December 2021.

Definitions: ACSC = ambulatory care sensitive condition; AHC = Accountable Health Communities; ED = emergency department; HRSN = health-related social need; PAC = post-acute care; PBPM = per beneficiary per month; PCP = primary care provider.

Other Notes: Except for unplanned readmissions, all averages were weighted, using each beneficiary's eligibility fraction as a weight variable.

**Exhibit I-14. Baseline Expenditures and Utilization by Number of Core HRSNs for Navigation-Eligible FFS Medicare Beneficiaries**

Measure	1 Core HRSN Reported				2 Core HRSNs Reported				3 or More Core HRSNs Reported			
	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years
<b>Unique beneficiaries</b>	14,076	14,351	14,563	17,058	8,277	8,602	8,758	10,398	6,658	6,935	7,137	8,471
<b>Total expenditures (PBPM)</b>	\$1,564	\$1,867	\$3,097	\$2,178	\$1,735	\$2,055	\$3,167	\$2,324	\$1,767	\$2,063	\$3,208	\$2,355
Std dev	\$2,690	\$3,163	\$4,343	\$3,534	\$2,988	\$4,492	\$5,047	\$4,317	\$3,077	\$3,417	\$4,788	\$3,893
P-value	N/A	N/A	N/A	N/A	0.00	0.00	0.28	0.00	0.52	0.89	0.60	0.61
<b>ED expenditures (PBPM)</b>	\$93	\$106	\$161	\$120	\$125	\$134	\$194	\$151	\$138	\$154	\$230	\$175
Std dev	\$259	\$279	\$325	\$291	\$412	\$338	\$413	\$390	\$317	\$342	\$468	\$385
P-value	N/A	N/A	N/A	N/A	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
<b>Inpatient expenditures (PBPM)</b>	\$609	\$749	\$1,496	\$953	\$704	\$889	\$1,564	\$1,056	\$750	\$904	\$1,617	\$1,095
Std dev	\$1,672	\$1,989	\$2,989	\$2,321	\$1,893	\$3,137	\$3,434	\$2,929	\$2,047	\$2,261	\$3,383	\$2,665
P-value	N/A	N/A	N/A	N/A	0.00	0.00	0.12	0.00	0.16	0.74	0.33	0.33
<b>PAC expenditures (PBPM)</b>	\$202	\$251	\$454	\$303	\$205	\$237	\$390	\$278	\$188	\$218	\$359	\$256
Std dev	\$767	\$882	\$1,221	\$982	\$741	\$798	\$1,090	\$894	\$731	\$735	\$1,072	\$866
P-value	N/A	N/A	N/A	N/A	0.79	0.20	0.00	0.03	0.17	0.14	0.07	0.09
<b>Admissions/1,000 beneficiaries</b>	553	640	1,148	781	649	724	1,148	842	677	796	1,224	902
Std dev	1,277	1,398	1,832	1,544	1,501	1,550	1,878	1,667	1,656	1,774	2,191	1,906
P-value	N/A	N/A	N/A	N/A	0.00	0.00	0.98	0.00	0.28	0.01	0.02	0.02
<b>ACSC admissions/1,000 beneficiaries</b>	118	143	263	175	146	176	263	196	151	176	266	198
Std dev	516	584	816	655	705	651	883	755	706	707	867	766
P-value	N/A	N/A	N/A	N/A	0.00	0.00	0.96	0.02	0.69	0.93	0.84	0.82
<b>Unplanned readmissions/1,000 discharges</b>	6,498	7,648	13,586	27,732	4,310	4,872	7,669	16,851	3,483	4,169	6,380	14,032
Mean	199	204	251	226	223	241	262	246	253	266	305	281
Std dev	399	403	434	418	416	427	440	431	435	442	461	449
P-value	N/A	N/A	N/A	N/A	0.00	0.00	0.09	0.00	0.00	0.01	0.00	0.00

(continued)

**Exhibit I-14. Baseline Expenditures and Utilization by Number of Core HRSNs for Navigation-Eligible FFS Medicare Beneficiaries (continued)**

Measure	1 Core HRSN Reported				2 Core HRSNs Reported				3 or More Core HRSNs Reported			
	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years	3 Years Before AHC Screening	2 Years Before AHC Screening	1 Year Before AHC Screening	All Baseline Years
<b>ED visits/1,000 beneficiaries</b>	1,796	1,941	2,717	2,153	2,359	2,438	3,307	2,704	2,866	2,958	4,122	3,323
Std dev	4,540	4,865	5,064	4,846	5,271	5,385	5,901	5,544	5,866	6,079	8,141	6,811
P-value	N/A	N/A	N/A	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>PCP visits/1,000 beneficiaries</b>	5,969	6,309	7,478	6,588	5,877	6,168	7,230	6,430	5,948	6,072	6,862	6,300
Std dev	6,262	6,675	7,498	6,864	6,381	6,823	7,726	7,028	6,908	7,083	7,792	7,287
P-value	N/A	N/A	N/A	N/A	0.29	0.13	0.02	0.07	0.51	0.39	0.00	0.22

P-values were calculated by comparing beneficiaries with two reported core HRSNs to beneficiaries with one reported core HRSN and by comparing beneficiaries with three or more reported core HRSNs to beneficiaries with two reported core HRSNs. No P-value was calculated for one reported core HRSN.

Source: RTI analysis of Chronic Conditions Data Warehouse Medicare claims data, May 2015–December 2021.

Definitions: ACSC = ambulatory care sensitive condition; AHC = Accountable Health Communities; ED = emergency department; HRSN = health-related social need; N/A = not available; PAC = post-acute care; PBPM = per beneficiary per month; PCP = primary care provider.

Other Notes: Except for unplanned readmissions, all averages were weighted, using each beneficiary’s eligibility fraction as a weight variable.

**Exhibit I-15. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible FFS Medicare Beneficiaries, Quarterly Outcomes**

Outcome	1-3 Months After AHC Screening	4-6 Months After AHC Screening	7-9 Months After AHC Screening	10-12 Months After AHC Screening	13-15 Months After AHC Screening	16-18 Months After AHC Screening	19-21 Months After AHC Screening	22-24 Months After AHC Screening	25-27 Months After AHC Screening	28-30 Months After AHC Screening	31-33 Months After AHC Screening	34-36 Months After AHC Screening	Overall
<b>Number of beneficiaries</b>													
Unique intervention group beneficiaries	8,093	7,314	6,588	5,936	5,231	4,544	3,894	3,359	2,732	2,030	1,474	989	8,980
Unique control group beneficiaries	3,425	3,107	2,857	2,636	2,424	2,107	1,852	1,639	1,343	1,022	789	526	3,839
<b>Total expenditures (PBPM)</b>													
Intervention group adjusted mean	\$4,053	\$3,163	\$3,040	\$2,898	\$2,693	\$2,588	\$2,638	\$2,542	\$2,479	\$2,423	\$2,714	\$2,510	\$2,989
Control group adjusted mean	\$4,087	\$3,252	\$3,114	\$2,989	\$2,678	\$2,593	\$2,682	\$2,771	\$3,082	\$2,720	\$2,678	\$2,316	\$3,082
Difference	-\$34	-\$89	-\$73	-\$92	\$15	-\$6	-\$44	-\$229	-\$604	-\$297	\$36	\$194	-\$93
% difference	-0.8	-2.7	-2.4	-3.1	0.6	-0.2	-1.6	-8.3	-19.6	-10.9	1.3	8.4	-3.0
P-value	0.77	0.46	0.56	0.48	0.91	0.97	0.78	0.18	0.00	0.18	0.89	0.56	0.53
<b>ED expenditures (PBPM)</b>													
Intervention group adjusted mean	\$155	\$137	\$126	\$130	\$120	\$132	\$124	\$123	\$125	\$124	\$144	\$123	\$132
Control group adjusted mean	\$172	\$147	\$142	\$129	\$116	\$117	\$132	\$132	\$152	\$135	\$125	\$145	\$140
Difference	-17	-10	-15	\$1	\$4	\$15	-9	-9	-26	-11	\$19	-22	-7
% difference	-9.9	-7.0	-10.8	0.5	3.3	12.9	-6.6	-7.0	-17.4	-8.3	15.3	-15.1	-5.1
P-value	0.03	0.22	0.08	0.94	0.7	0.15	0.43	0.44	0.05	0.47	0.29	0.35	0.49

(continued)

**Exhibit I-15. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible FFS Medicare Beneficiaries, Quarterly Outcomes (continued)**

Outcome	1–3 Months After AHC Screening	4–6 Months After AHC Screening	7–9 Months After AHC Screening	10–12 Months After AHC Screening	13–15 Months After AHC Screening	16–18 Months After AHC Screening	19–21 Months After AHC Screening	22–24 Months After AHC Screening	25–27 Months After AHC Screening	28–30 Months After AHC Screening	31–33 Months After AHC Screening	34–36 Months After AHC Screening	Overall
<b>Inpatient expenditures (PBPM)</b>													
Intervention group adjusted mean	\$1,903	\$1,371	\$1,346	\$1,234	\$1,113	\$1,016	\$1,069	\$993	\$922	\$886	\$1,080	\$996	\$1,273
Control group adjusted mean	\$1,996	\$1,454	\$1,396	\$1,285	\$1,074	\$944	\$1,030	\$1,122	\$1,391	\$1,084	\$1,042	\$792	\$1,334
Difference	-93	-83	-50	-50	\$39	\$72	\$38	-130	-469	-198	\$38	\$203	-61
% difference	-4.7	-5.7	-3.6	-3.9	3.6	7.6	3.7	-11.5	-33.7	-18.2	3.7	25.6	-4.6
P-value	0.28	0.36	0.60	0.61	0.71	0.52	0.75	0.32	0.00	0.24	0.84	0.42	0.58
<b>PAC expenditures (PBPM)</b>													
Intervention group adjusted mean	\$851	\$563	\$513	\$504	\$471	\$418	\$379	\$400	\$394	\$372	\$456	\$321	\$525
Control group adjusted mean	\$848	\$497	\$560	\$467	\$425	\$388	\$357	\$340	\$395	\$399	\$427	\$321	\$504
Difference	\$3	\$65	-47	\$37	\$46	\$31	\$22	\$59	\$0	-27	\$29	\$0	\$20
% difference	0.3	13.2	-8.4	7.9	10.8	7.9	6.1	17.4	-0.1	-6.8	6.8	0.0	4
P-value	0.93	0.08	0.22	0.36	0.28	0.5	0.65	0.26	>0.99	0.69	0.71	>0.99	0.65
<b>Admissions/1,000 beneficiaries</b>													
Intervention group adjusted mean	335	255	251	234	216	201	205	204	197	193	196	197	241
Control group adjusted mean	332	275	249	229	240	216	221	211	226	191	232	229	251
Difference	2	-20	2	5	-24	-16	-17	-8	-30	2	-39	-34	-10
% difference	0.7	-7.4	0.9	2.3	-10.2	-7.3	-7.8	-3.6	-13.5	1.2	-16.7	-14.9	-4.2
P-value	0.84	0.07	0.84	0.64	0.04	0.21	0.21	0.60	0.06	0.90	0.08	0.24	0.43

(continued)

**Exhibit I-15. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible FFS Medicare Beneficiaries, Quarterly Outcomes (continued)**

Outcome	1-3 Months After AHC Screening	4-6 Months After AHC Screening	7-9 Months After AHC Screening	10-12 Months After AHC Screening	13-15 Months After AHC Screening	16-18 Months After AHC Screening	19-21 Months After AHC Screening	22-24 Months After AHC Screening	25-27 Months After AHC Screening	28-30 Months After AHC Screening	31-33 Months After AHC Screening	34-36 Months After AHC Screening	Overall
<b>ACSC admissions/1,000 beneficiaries</b>													
Intervention group adjusted mean	79	59	55	51	53	42	47	43	41	40	48	43	54
Control group adjusted mean	76	67	53	48	63	54	57	36	34	46	60	68	57
Difference	3	-8	1	3	-10	-12	-10	7	7	-6	-12	-26	-3
% difference	3.9	-11.7	2.7	6.6	-15.4	-22.2	-18.1	20.6	20.1	-12.9	-19.8	-37.7	-5.4
P-value	0.59	0.15	0.78	0.54	0.11	0.04	0.12	0.23	0.3	0.48	0.28	0.08	0.61
<b>Unplanned readmissions/1,000 discharges</b>													
Intervention group discharges	2,241	1,566	1,416	1,161	967	799	698	580	447	320	239	137	10,571
Control group discharges	967	728	623	519	514	404	363	291	246	166	150	87	5,058
Intervention group adjusted mean	287	279	265	259	246	244	251	252	226	221	224	231	261
Control group adjusted mean	293	282	264	289	266	272	281	279	261	234	248	257	276
Difference	-6	-3	1	-30	-20	-29	-31	-28	-37	-13	-25	-28	-16
% difference	-1.9	-1.0	0.4	-10.4	-7.7	-10.8	-11.1	-10.1	-14.2	-5.6	-10.0	-10.7	-5.6
P-value	0.74	0.89	0.96	0.20	0.40	0.28	0.28	0.38	0.28	0.75	0.58	0.65	0.53
<b>Follow-up visits within 14 days of discharge/1,000 discharges</b>													
Intervention group adjusted mean	605	579	602	592	582	616	562	583	583	595	544	592	591
Control group adjusted mean	615	634	609	604	559	643	627	607	609	612	653	526	612
Difference	-9	-55	-7	-12	23	-27	-64	-24	-25	-17	-105	65	-21
% difference	-1.5	-8.6	-1.2	-2.0	4.1	-4.2	-10.2	-3.9	-4.1	-2.7	-16.1	12.4	-3.4
P-value	0.61	0.01	0.75	0.64	0.39	0.35	0.04	0.49	0.51	0.72	0.03	0.33	0.43

(continued)

**Exhibit I-15. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible FFS Medicare Beneficiaries, Quarterly Outcomes (continued)**

Outcome	1-3 Months After AHC Screening	4-6 Months After AHC Screening	7-9 Months After AHC Screening	10-12 Months After AHC Screening	13-15 Months After AHC Screening	16-18 Months After AHC Screening	19-21 Months After AHC Screening	22-24 Months After AHC Screening	25-27 Months After AHC Screening	28-30 Months After AHC Screening	31-33 Months After AHC Screening	34-36 Months After AHC Screening	Overall
<b>ED visits within 30 days of discharge/1,000 discharges</b>													
Intervention group adjusted mean	244	259	250	249	241	255	250	221	252	257	257	265	248
Control group adjusted mean	258	289	243	307	247	244	266	251	288	246	257	377	267
Difference	-14	-30	7	-57	-6	11	-15	-29	-34	11	0	-112	-18
% difference	-5.6	-10.5	2.8	-18.5	-2.4	4.5	-5.7	-11.5	-11.9	4.4	0.0	-29.7	-6.7
P-value	0.38	0.13	0.74	0.01	0.79	0.67	0.58	0.33	0.32	0.79	>0.99	0.08	0.45
<b>ED visits/1,000 beneficiaries</b>													
Intervention group adjusted mean	669	611	531	527	512	521	470	463	475	483	506	525	546
Control group adjusted mean	715	654	605	568	550	522	528	588	572	508	519	602	597
Difference	-43	-42	-72	-40	-36	-1	-56	-122	-94	-25	-13	-79	-50
% difference	-6	-6.4	-11.9	-7.1	-6.5	-0.2	-10.6	-20.8	-16.4	-4.9	-2.4	-13.1	-8.3
P-value	0.01	0.01	0.00	0.02	0.04	0.96	0.00	0.00	0.00	0.38	0.71	0.09	0.01
<b>Avoidable ED visits/1,000 beneficiaries</b>													
Intervention group adjusted mean	328	293	255	252	250	247	223	207	212	225	227	239	260
Control group adjusted mean	335	318	293	287	268	249	262	279	265	275	249	247	289
Difference	-7	-24	-36	-33	-16	-2	-36	-67	-49	-47	-21	-8	-27
% difference	-2	-7.5	-12.3	-11.6	-6	-0.8	-13.8	-24.2	-18.6	-17.2	-8.4	-3.3	-9.2
P-value	0.55	0.04	0.00	0.01	0.17	0.88	0.01	0.00	0.00	0.02	0.36	0.79	0.04

(continued)

**Exhibit I-15. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible FFS Medicare Beneficiaries, Quarterly Outcomes (continued)**

Outcome	1–3 Months After AHC Screening	4–6 Months After AHC Screening	7–9 Months After AHC Screening	10–12 Months After AHC Screening	13–15 Months After AHC Screening	16–18 Months After AHC Screening	19–21 Months After AHC Screening	22–24 Months After AHC Screening	25–27 Months After AHC Screening	28–30 Months After AHC Screening	31–33 Months After AHC Screening	34–36 Months After AHC Screening	Overall
<b>PCP visits/1,000 beneficiaries</b>													
Intervention group adjusted mean	2,274	2,024	2,036	2,045	2,004	1,950	1,945	1,985	1,963	1,960	2,002	1,904	2,041
Control group adjusted mean	2,258	2,064	2,025	2,025	1,976	2,057	2,039	1,993	2,070	2,152	2,099	2,118	2,075
Difference	16	-40	12	21	29	-112	-99	-9	-114	-206	-105	-234	-36
% difference	0.7	-1.9	0.6	1	1.5	-5.4	-4.8	-0.4	-5.5	-9.5	-5	-11	-1.7
P-value	0.61	0.19	0.72	0.54	0.42	0.00	0.02	0.84	0.02	0.00	0.13	0.01	0.35

P-values compare the intervention group means with the control group mean.

The total expenditure and expenditure category outcomes were estimated using a generalized linear model with a Gaussian error distribution and log link. The inpatient admission, ACSC admission, ED visit, avoidable ED visit, and PCP visit outcomes were estimated using a Poisson specification. The unplanned readmission and follow-up visit within 14 days of discharge outcomes were estimated using a logistic specification.

Source: RTI analysis of Chronic Conditions Data Warehouse Medicare claims data, May 2015–December 2021.

Definitions: ACSC = ambulatory care sensitive condition; AHC = Accountable Health Communities; ED = emergency department; PAC = post-acute care; PBPM = per beneficiary per month; PCP = primary care provider.

Other Notes: Except for unplanned readmissions and follow-up visits within 14 days of discharge, all averages were weighted, using each beneficiary’s eligibility fraction as a weight variable.

**Exhibit I-16. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible FFS Medicare Beneficiaries, Yearly Outcomes**

<b>Outcome</b>	<b>12 Months After AHC Screening</b>	<b>24 Months After AHC Screening</b>	<b>36 Months After AHC Screening</b>	<b>Overall</b>
<b>Follow-up visits within 30 days after an MH discharge/1,000 discharges</b>				
Intervention group discharges	398	171	56	625
Control group discharge	160	77	37	274
Intervention group adjusted mean	435	400	315	413
Control group adjusted mean	407	352	351	386
Difference	28	50	-39	27
% difference	7	14.1	-11.2	7.1
P-value	0.54	0.45	0.7	0.63
<b>Asthma Medication Ratio &gt; 50%</b>				
Unique intervention group beneficiaries	471	278	80	566
Unique control group beneficiaries	233	139	35	281
Intervention group adjusted mean	67	66	65	67
Control group adjusted mean	62	58	66	62
Difference	5	7	-1	5
% difference	7.8	12.3	-1.6	7.5
P-value	0.19	0.13	0.91	0.35
<b>Treatment for respiratory illnesses</b>				
Unique intervention group beneficiaries	8,567	5,502	2,816	8,980
Unique control group beneficiaries	3,617	2,552	1,388	3,839
Intervention group adjusted mean	70	65	58	66
Control group adjusted mean	70	65	63	67
Difference	0	0	-5	-1
% difference	-0.2	-0.7	-7.7	-1.5
P-value	0.85	0.72	0.01	0.38
<b>Antidepressant medication management, 12 weeks</b>				
Unique intervention group beneficiaries	512	273	119	815
Unique control group beneficiaries	246	148	60	411
Intervention group adjusted mean	58	62	54	59
Control group adjusted mean	57	62	73	62
Difference	1	-1	-17	-3
% difference	1.3	-0.8	-22.8	-4.2
P-value	0.84	0.91	0.02	0.59
<b>Antidepressant medication management, 6 months</b>				
Unique intervention group beneficiaries	512	273	119	815
Unique control group beneficiaries	246	148	60	411
Intervention group adjusted mean	37	32	23	33
Control group adjusted mean	35	39	25	35
Difference	1	-7	-3	-2
% difference	4.2	-19	-12.4	-6.3
P-value	0.69	0.15	0.7	0.66

(continued)

**Exhibit I-16. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible FFS Medicare Beneficiaries, Yearly Outcomes (continued)**

Outcome	12 Months After AHC Screening	24 Months After AHC Screening	36 Months After AHC Screening	Overall
<b>Initiation of AOD treatment</b>				
Unique intervention group beneficiaries	556	346	155	825
Unique control group beneficiaries	223	153	49	340
Intervention group adjusted mean	59	57	52	57
Control group adjusted mean	59	61	52	58
Difference	1	-4	0	-1
% difference	1.1	-7.3	-0.3	-2
P-value	0.88	0.37	0.99	0.82

P-values compare the intervention group means with the control group mean.

All outcomes were estimated using a logistic specification.

Source: RTI analysis of Chronic Conditions Data Warehouse Medicare claims data, May 2015–December 2021.

Definitions: AOD = alcohol or other drug; MH = mental health.

Other Notes: Except for follow-up visits within 30 days of a mental health discharge, all averages were weighted, using each beneficiary's eligibility fraction as a weight variable.

**Exhibit I-17. Difference-in-Differences Results for Alignment Track Navigation-Eligible FFS Medicare Beneficiaries and Assistance Track Control Group FFS Medicare Beneficiaries, Quarterly Outcomes**

Outcome	1-36 Months Before AHC Screening	1-3 Months After AHC Screening	4-6 Months After AHC Screening	7-9 Months After AHC Screening	10-12 Months After AHC Screening	13-15 Months After AHC Screening	16-18 Months After AHC Screening	19-21 Months After AHC Screening	22-24 Months After AHC Screening	25-27 Months After AHC Screening	28-30 Months After AHC Screening	31-33 Months After AHC Screening	34-36 Months After AHC Screening	Overall
<b>Number of beneficiaries</b>														
Unique Alignment Track beneficiaries	19,387	14,317	12,754	11,237	9,767	8,405	7,098	5,982	5,149	4,036	2,929	1,971	1,236	16,022
Unique Assistance Track control group beneficiaries	4,681	3,425	3,107	2,857	2,636	2,424	2,107	1,852	1,639	1,343	1,022	789	526	3,839
<b>Total expenditures (PBPM)</b>														
Alignment Track adjusted mean	\$2,557	\$3,490	\$2,934	\$2,875	\$2,856	\$2,249	\$2,389	\$2,480	\$2,593	\$1,900	\$1,950	\$2,194	\$2,262	\$2,735
Assistance Track control group adjusted mean	\$2,475	\$4,075	\$3,304	\$3,248	\$3,029	\$2,403	\$2,423	\$2,655	\$2,926	\$2,638	\$2,394	\$2,532	\$2,338	\$3,068
Difference-in-differences		-\$666	-\$452	-\$455	-\$255	-\$236	-\$115	-\$256	-\$414	-\$820	-\$525	-\$420	-\$157	-\$415
Percentage change		-26.0	-17.7	-17.8	-10.0	-9.2	-4.5	-10.0	-16.2	-32.1	-20.5	-16.4	-6.2	-16.2
P-value		0.20	0.12	0.07	0.16	0.24	0.56	0.14	0.09	0.03	0.12	0.17	0.51	0.15
<b>ED expenditures (PBPM)</b>														
Alignment Track adjusted mean	\$159	\$196	\$164	\$158	\$153	\$138	\$140	\$135	\$133	\$119	\$133	\$131	\$125	\$154
Assistance Track control group adjusted mean	\$128	\$177	\$145	\$149	\$132	\$102	\$105	\$128	\$132	\$129	\$126	\$122	\$151	\$138
Difference-in-differences		-12	-12	-21	-10	\$6	\$4	-24	-30	-41	-24	-22	-57	-15
Percentage change		-7.3	-7.9	-13.3	-6.3	3.5	2.8	-15.3	-19.1	-26.0	-14.9	-14.0	-35.7	-9.1
P-value		0.50	0.03	0.10	0.36	0.51	0.70	0.04	0.06	0.07	0.29	0.26	0.04	0.26

(continued)

**Exhibit I-17. Difference-in-Differences Results for Alignment Track Navigation-Eligible FFS Medicare Beneficiaries and Assistance Track Control Group FFS Medicare Beneficiaries, Quarterly Outcomes (continued)**

Outcome	1-36 Months Before AHC Screening	1-3 Months After AHC Screening	4-6 Months After AHC Screening	7-9 Months After AHC Screening	10-12 Months After AHC Screening	13-15 Months After AHC Screening	16-18 Months After AHC Screening	19-21 Months After AHC Screening	22-24 Months After AHC Screening	25-27 Months After AHC Screening	28-30 Months After AHC Screening	31-33 Months After AHC Screening	34-36 Months After AHC Screening	Overall
<b>Inpatient expenditures (PBPM)</b>														
Alignment Track adjusted mean	\$1,221	\$1,673	\$1,337	\$1,299	\$1,283	\$854	\$944	\$1,020	\$1,052	\$567	\$622	\$763	\$872	\$1,181
Assistance Track control group adjusted mean	\$1,158	\$1,963	\$1,476	\$1,500	\$1,305	\$852	\$792	\$984	\$1,197	\$1,061	\$779	\$915	\$733	\$1,304
Difference-in-differences		-354	-202	-264	-86	-61	\$89	-28	-209	-558	-221	-215	\$76	-186
Percentage change		-29.0	-16.5	-21.7	-7.1	-5.0	7.3	-2.3	-17.1	-45.7	-18.1	-17.6	6.2	-15.3
P-value		0.30	0.41	0.15	0.52	0.61	0.40	0.79	0.11	0.08	0.35	0.24	0.64	0.35
<b>PAC expenditures (PBPM)</b>														
Alignment Track adjusted mean	\$318	\$522	\$404	\$374	\$370	\$240	\$340	\$318	\$372	\$240	\$247	\$283	\$230	\$368
Assistance Track control group adjusted mean	\$350	\$851	\$517	\$579	\$455	\$378	\$346	\$339	\$361	\$331	\$334	\$377	\$345	\$504
Difference-in-differences		-296	-82	-173	-52	-107	\$25	\$12	\$43	-58	-55	-62	-83	-104
Percentage change		-93.4	-25.7	-54.4	-16.5	-33.6	8.0	3.6	13.4	-18.3	-17.4	-19.4	-26.1	-32.6
P-value		0.13	0.20	0.04	0.26	0.19	0.70	0.82	0.56	0.54	0.62	0.53	0.30	0.26
<b>Admissions/1,000 beneficiaries</b>														
Alignment Track adjusted mean	219	269	243	237	234	179	188	206	206	154	185	186	192	221
Assistance Track control group adjusted mean	216	307	272	257	237	209	204	224	221	161	158	213	226	242
Difference-in-differences		-49	-35	-24	-6	-42	-22	-22	-18	-13	30	-34	-41	-27
Percentage change		-22.2	-16.0	-11.1	-2.8	-19.1	-9.8	-10.2	-8.1	-6.1	13.9	-15.5	-18.6	-12.3
P-value		0.04	0.04	0.17	0.73	0.08	0.28	0.17	0.47	0.62	0.42	0.48	0.42	0.22

(continued)

**Exhibit I-17. Difference-in-Differences Results for Alignment Track Navigation-Eligible FFS Medicare Beneficiaries and Assistance Track Control Group FFS Medicare Beneficiaries, Quarterly Outcomes (continued)**

Outcome	1-36 Months Before AHC Screening	1-3 Months After AHC Screening	4-6 Months After AHC Screening	7-9 Months After AHC Screening	10-12 Months After AHC Screening	13-15 Months After AHC Screening	16-18 Months After AHC Screening	19-21 Months After AHC Screening	22-24 Months After AHC Screening	25-27 Months After AHC Screening	28-30 Months After AHC Screening	31-33 Months After AHC Screening	34-36 Months After AHC Screening	Overall
<b>ACSC admissions/1,000 beneficiaries</b>														
Alignment Track adjusted mean	49	58	58	52	49	36	41	46	45	31	47	46	48	49
Assistance Track control group adjusted mean	48	70	62	54	49	52	51	53	35	24	31	48	70	54
Difference-in-differences		-14	-5	-3	-1	-21	-12	-9	11	11	21	-4	-25	-6
Percentage change		-29.6	-11.0	-6.4	-2.2	-42.7	-24.6	-18.2	22.2	22.0	43.1	-7.5	-50.6	-12.3
P-value		0.02	0.40	0.65	0.89	0.01	0.13	0.22	0.29	0.13	0.05	0.78	0.27	0.44
<b>Unplanned readmissions/1,000 discharges</b>														
Alignment Track discharges	31,947	3,728	2,753	2,239	1,850	1,568	1,255	1,087	891	693	504	325	186	17,079
Assistance Track control group discharges	7,562	967	728	623	519	514	404	363	291	246	166	150	87	5,058
Alignment Track adjusted mean	238	277	269	285	274	250	257	212	256	227	245	211	189	262
Assistance Track control group adjusted mean	243	313	278	279	313	244	280	265	302	232	246	247	290	283
Difference-in-differences		-31	-4	11	-34	12	-19	-50	-42	-1	3	-33	-100	-17
Percentage change		-12.9	-1.6	4.5	-14.2	4.9	-8.2	-21.0	-17.5	-0.4	1.3	-13.9	-41.8	-7.2
P-value		0.24	0.87	0.52	0.14	0.68	0.54	0.02	0.23	0.98	0.96	0.65	0.12	0.55

(continued)

**Exhibit I-17. Difference-in-Differences Results for Alignment Track Navigation-Eligible FFS Medicare Beneficiaries and Assistance Track Control Group FFS Medicare Beneficiaries, Quarterly Outcomes (continued)**

Outcome	1-36 Months Before AHC Screening	1-3 Months After AHC Screening	4-6 Months After AHC Screening	7-9 Months After AHC Screening	10-12 Months After AHC Screening	13-15 Months After AHC Screening	16-18 Months After AHC Screening	19-21 Months After AHC Screening	22-24 Months After AHC Screening	25-27 Months After AHC Screening	28-30 Months After AHC Screening	31-33 Months After AHC Screening	34-36 Months After AHC Screening	Overall
<b>Follow-up visits within 14 days of discharge/1,000 discharges</b>														
Alignment Track adjusted mean	619	650	619	625	610	635	620	613	618	650	613	630	545	627
Assistance Track control group adjusted mean	581	617	646	582	604	602	674	655	636	652	638	655	508	624
Difference-in-differences		-5	-63	4	-32	-4	-89	-77	-53	-39	-61	-58	-3	-34
Percentage change		-0.8	-10.2	0.7	-5.1	-0.6	-14.3	-12.5	-8.6	-6.3	-9.9	-9.4	-0.4	-5.4
P-value		0.83	0.03	0.84	0.30	0.93	0.00	0.00	0.17	0.40	0.18	0.03	0.95	0.25
<b>ED visits within 30 days of discharge/1,000 discharges</b>														
Alignment Track adjusted mean	273	296	271	263	273	282	259	241	239	249	300	261	218	271
Assistance Track control group adjusted mean	259	277	288	261	290	227	250	269	261	263	239	279	337	269
Difference-in-differences		5	-32	-13	-32	42	-5	-43	-36	-28	46	-32	-133	-13
Percentage change		1.8	-11.8	-4.8	-11.8	15.2	-1.8	-15.8	-13.2	-10.1	16.9	-11.6	-48.6	-4.6
P-value		0.80	0.05	0.58	0.17	0.12	0.77	0.23	0.36	0.43	0.44	0.73	0.12	0.64
<b>ED visits/1,000 beneficiaries</b>														
Alignment Track adjusted mean	708	806	732	688	671	596	596	594	579	487	544	545	607	664
Assistance Track control group adjusted mean	583	726	660	648	592	520	517	539	596	491	487	528	608	606
Difference-in-differences		-77	-68	-95	-46	-37	-32	-59	-139	-120	-49	-94	-127	-71
Percentage change		-10.9	-9.6	-13.4	-6.5	-5.3	-4.6	-8.3	-19.6	-17.0	-6.9	-13.2	-17.9	-10.1
P-value		0.09	0.04	0.07	0.37	0.38	0.42	0.15	0.03	0.11	0.48	0.26	0.21	0.15

(continued)

**Exhibit I-17. Difference-in-Differences Results for Alignment Track Navigation-Eligible FFS Medicare Beneficiaries and Assistance Track Control Group FFS Medicare Beneficiaries, Quarterly Outcomes (continued)**

Outcome	1-36 Months Before AHC Screening	1-3 Months After AHC Screening	4-6 Months After AHC Screening	7-9 Months After AHC Screening	10-12 Months After AHC Screening	13-15 Months After AHC Screening	16-18 Months After AHC Screening	19-21 Months After AHC Screening	22-24 Months After AHC Screening	25-27 Months After AHC Screening	28-30 Months After AHC Screening	31-33 Months After AHC Screening	34-36 Months After AHC Screening	Overall
<b>Avoidable ED visits/1,000 beneficiaries</b>														
Alignment Track adjusted mean	332	368	339	322	313	294	289	282	272	228	255	254	298	311
Assistance Track control group adjusted mean	281	343	323	320	303	259	258	273	289	236	267	259	263	298
Difference-in-differences		-36	-40	-52	-42	-11	-15	-37	-62	-51	-57	-47	-11	-38
Percentage change		-10.9	-12.0	-15.5	-12.7	-3.2	-4.4	-11.0	-18.8	-15.5	-17.0	-14.0	-3.4	-11.5
P-value		0.13	0.02	0.08	0.05	0.64	0.54	0.17	0.03	0.12	0.07	0.19	0.78	0.12
<b>PCP visits/1,000 beneficiaries</b>														
Alignment Track adjusted mean	1,636	1,972	1,861	1,838	1,808	1,716	1,759	1,824	1,867	1,708	1,704	1,804	1,688	1,829
Assistance Track control group adjusted mean	1,635	2,116	1,981	1,929	1,932	1,791	1,937	1,900	1,893	1,766	1,883	1,876	2,041	1,942
Difference-in-differences		-152	-125	-93	-126	-84	-195	-82	-29	-70	-205	-82	-399	-121
Percentage change		-9.3	-7.6	-5.7	-7.7	-5.2	-11.9	-5.0	-1.8	-4.3	-12.5	-5.0	-24.4	-7.4
P-value		0.27	0.16	0.22	0.21	0.56	0.11	0.47	0.80	0.56	0.13	0.53	0.11	0.29

P-values compare the intervention group means with the control group mean.

The total expenditure and other expenditure category outcomes were estimated using a generalized linear model with a Gaussian error distribution and log link. The inpatient admission, ACSC admission, ED visit, avoidable ED visit, and PCP visit outcomes were estimated using a Poisson specification. The unplanned readmission and follow-up visit within 14 days of discharge outcomes were estimated using a logistic specification.

Source: RTI analysis of Chronic Conditions Data Warehouse Medicare claims data, May 2015–December 2021.

Definitions: ACSC = ambulatory care sensitive condition; AHC = Accountable Health Communities; ED = emergency department; PAC = post-acute care; PBPM = per beneficiary per month; PCP = primary care provider.

Other Notes: Except for unplanned readmissions and follow-up visits within 14 days of discharge, all averages were weighted, using each beneficiary's eligibility fraction as a weight variable times a propensity score weight.

**Exhibit I-18. Difference-in-Differences Results for Alignment Track Navigation-Eligible FFS Medicare Beneficiaries and Assistance Track Control Group FFS Medicare Beneficiaries, Yearly Outcomes**

Outcome	Baseline	12 Months After AHC Screening	24 Months After AHC Screening	36 Months After AHC Screening	Overall
<b>Follow-up visits within 30 days after an MH discharge/1,000 discharges</b>					
Alignment Track discharges	2,348	701	303	87	1,091
Assistance Track control group discharges	528	160	77	37	274
Alignment Track adjusted mean	361	326	358	380	340
Assistance Track control group adjusted mean	437	409	393	382	402
Difference		-10	36	66	10
% difference		-2.8	10.1	18.2	2.9
P-value		0.84	0.47	0.47	0.85
<b>Asthma Medication Ratio &gt; 50%</b>					
Unique Alignment Track beneficiaries	2,116	829	415	104	987
Unique Assistance Track control group beneficiaries	525	233	139	35	281
Alignment Track adjusted mean	61	59	63	58	60
Assistance Track control group adjusted mean	62	63	64	69	64
Difference		-3	0	-11	-3
% difference		-5.0	0.2	-17.8	-5.3
P-value		0.23	0.99	0.11	0.52
<b>Treatment for respiratory illnesses</b>					
Unique Alignment Track beneficiaries	19,387	15,204	8,934	4,165	16,022
Unique Assistance Track control group beneficiaries	4,681	3,617	2,552	1,388	3,839
Alignment Track adjusted mean	67	68	64	65	66
Assistance Track control group adjusted mean	65	69	65	67	68
Difference		-3	-2	-4	-2
% difference		-3.8	-2.6	-5.9	-3.7
P-value		0.04	0.13	0.03	0.05
<b>Antidepressant medication management, 12 weeks</b>					
Unique Alignment Track beneficiaries	3,818	988	482	171	1,512
Unique Assistance Track control group beneficiaries	969	246	148	60	411
Alignment Track adjusted mean	61	63	60	65	62
Assistance Track control group adjusted mean	61	60	72	81	67
Difference		2	-12	-16	-5
% difference		3.9	-20.0	-26.5	-8.1
P-value		0.38	0.03	0.00	0.21

(continued)

**Exhibit I-18. Difference-in-Differences Results for Alignment Track Navigation-Eligible FFS Medicare Beneficiaries and Assistance Track Control Group FFS Medicare Beneficiaries, Yearly Outcomes (continued)**

Outcome	Baseline	12 Months After AHC Screening	24 Months After AHC Screening	36 Months After AHC Screening	Overall
<b>Antidepressant medication management, 6 months</b>					
Unique Alignment Track beneficiaries	3,818	988	482	171	1,512
Unique Assistance Track control group beneficiaries	969	246	148	60	411
Alignment Track adjusted mean	42	39	39	34	38
Assistance Track control group adjusted mean	41	37	48	30	40
Difference		1	-10	3	-2
% difference		1.9	-24.4	6.4	-5.7
P-value		0.75	0.29	0.73	0.67
<b>Initiation of AOD treatment</b>					
Unique Alignment Track beneficiaries	2,870	1,283	719	295	1,805
Unique Assistance Track control group beneficiaries	508	223	153	49	340
Alignment Track adjusted mean	48	53	51	54	53
Assistance Track control group adjusted mean	46	58	63	51	58
Difference		-6	-13	1	-7
% difference		-13.0	-27.0	3.0	-15.0
P-value		0.13	0.02	0.90	0.21

P-values compare the intervention group means with the control group mean.

All outcomes were estimated using a logistic specification.

Source: RTI analysis of Chronic Conditions Data Warehouse Medicare claims data, May 2015–December 2021.

Definitions: ACSC = ambulatory care sensitive condition; AHC = Accountable Health Communities; ED = emergency department; PAC = post-acute care; PBPM = per beneficiary per month; PCP = primary care provider.

Other Notes: Except for follow-up visits within 30 days of a mental health discharge, all averages were weighted, using each beneficiary's eligibility fraction as a weight variable times a propensity score weight.

**Exhibit I-19. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible FFS Medicare Beneficiaries by Subpopulation**

Outcome	Non-Hispanic White	Hispanic and/or Nonwhite	Non-Dually Eligible	Dually Eligible	Nondisabled	Disabled	1 HRSN	More than 1 HRSN	Urban	Rural
<b>Beneficiary-Level Outcomes</b>										
Unique intervention group beneficiaries	6,401	2,579	3,418	5,562	3,569	5,411	4,626	4,354	6,985	1,995
Unique control group beneficiaries	2,742	1,097	1,361	2,478	1,489	2,350	1,767	2,072	2,928	911
<b>Total Expenditures (PBPM)</b>										
Intervention group adjusted mean	\$2,947	\$3,821	\$2,851	\$3,387	\$3,882	\$2,727	\$3,086	\$3,285	\$3,417	\$2,363
Control group adjusted mean	\$2,958	\$4,142	\$2,962	\$3,465	\$4,087	\$2,747	\$3,267	\$3,282	\$3,591	\$2,272
Difference in means	-\$10	-\$321	-\$110	-\$78	-\$203	-\$20	-\$178	\$3	-\$174	\$95
P-value (for difference)	0.85	0.00	0.13	0.17	0.00	0.72	0.01	0.96	0.00	0.30
Interaction		-\$311		\$32		\$182		\$181		\$270
P-value (for interaction)		0.00		0.72		0.04		0.04		0.01
<b>ED Visits per 1,000 Beneficiaries</b>										
Intervention group adjusted mean	532	519	398	590	527	530	485	567	523	548
Control group adjusted mean	547	655	401	662	534	597	533	611	597	521
Difference in means	-13	-152	-2	-78	-7	-78	-44	-48	-74	28
P-value (for difference)	0.04	0.00	0.76	0.00	0.37	0.00	0.00	0.00	0.00	0.02
Interaction		-139		-76		-70		-4		102
P-value (for interaction)		0.00		0.00		0.00		0.72		0.00
<b>Inpatient Admissions per 1,000 Beneficiaries</b>										
Intervention group adjusted mean	240	264	202	275	291	222	243	250	263	187
Control group adjusted mean	236	310	211	286	314	225	259	255	277	192
Difference in means	3	-48	-9	-11	-20	-4	-15	-5	-14	-5
P-value (for difference)	0.45	0.00	0.12	0.05	0.00	0.45	0.01	0.36	0.00	0.47
Interaction		-51		-1		16		10		9
P-value (for interaction)		0.00		0.87		0.05		0.20		0.31

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**Exhibit I-19. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible FFS Medicare Beneficiaries by Subpopulation (continued)**

Outcome	Non-Hispanic White	Hispanic and/or Nonwhite	Non-Dually Eligible	Dually Eligible	Nondisabled	Disabled	1 HRSN	More than 1 HRSN	Urban	Rural
<b><i>Unplanned Readmissions per 1,000 Discharges</i></b>										
Intervention group discharges	7,309	3,262	3,639	6,932	4,653	5,918	5,365	5,206	8,933	1,638
Control group discharges	3,383	1,675	1,654	3,404	2,276	2,782	2,385	2,673	4,162	896
Intervention group adjusted mean	271	263	235	285	281	261	264	273	276	230
Control group adjusted mean	268	316	260	294	317	259	288	277	293	237
Difference in means	4	-52	-25	-9	-34	2	-24	-4	-18	-6
P-value (for difference)	0.70	0.00	0.05	0.32	0.00	0.84	0.03	0.72	0.04	0.73
Interaction		-56		16		36		20		12
P-value (for interaction)		0.00		0.31		0.02		0.18		0.55

P-values (for difference) compare the intervention group means with the control group mean within each subpopulation; P-values (for interaction) compare the difference in means across each subpopulation pair.

The total expenditure PBPM (\$) impact was estimated using a generalized linear model with a Gaussian error distribution and log link. The inpatient admission and ED visit outcomes were estimated using a Poisson specification. The unplanned readmission outcome was estimated using a logistic specification.

Sample sizes represent the total number of unique beneficiaries observed during the post-screening period or total number of discharges during the post-screening period.

Source: RTI analysis of Chronic Conditions Data Warehouse Medicare claims data, May 2015–December 2021.

Definitions: ED = emergency department; PAC = post-acute care; PBPM = per beneficiary per month; PCP = primary care provider.

Other Notes: Except for unplanned readmissions, all averages were weighted, using each beneficiary’s eligibility fraction as a weight variable.

**Exhibit I-20. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible FFS Medicare Beneficiaries by Type of HRSN**

Outcome	No Housing Need	Housing Need	No Food Need	Food Need	No Transportation Need	Transportation Need	No Utility Need	Utility Need	No Safety Need	Safety Need
<b>Beneficiary-Level Outcomes</b>										
Unique intervention group beneficiaries	5,065	3,915	4,032	4,948	4,777	4,203	6,463	2,517	8,563	417
Unique control group beneficiaries	2,082	1,757	1,582	2,257	1,895	1,944	2,651	1,188	3,657	182
<b>Total Expenditures (PBPM)</b>										
Intervention group adjusted mean	\$3,344	\$2,978	\$3,333	\$3,057	\$2,792	\$3,635	\$3,146	\$3,278	\$3,207	\$2,688
Control group adjusted mean	\$3,493	\$3,023	\$3,475	\$3,133	\$2,954	\$3,613	\$3,217	\$3,420	\$3,314	\$2,554
Difference in means	-\$145	-\$45	-\$141	-\$76	-\$161	\$23	-\$71	-\$142	-\$106	\$132
P-value (for difference)	0.02	0.49	0.04	0.19	0.01	0.72	0.18	0.09	0.02	0.50
Interaction		\$100		\$64		\$184		-\$71		\$237
P-value (for interaction)		0.26		0.47		0.04		0.47		0.24
<b>ED Visits per 1,000 Beneficiaries</b>										
Intervention group adjusted mean	485	579	519	534	476	588	534	514	511	780
Control group adjusted mean	556	604	625	555	517	642	572	594	559	885
Difference in means	-69	-26	-90	-23	-41	-53	-37	-85	-47	-151
P-value (for difference)	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Interaction		43		68		-12		-48		-104
P-value (for interaction)		0.00		0.00		0.31		0.00		0.01
<b>Inpatient Admissions per 1,000 Beneficiaries</b>										
Intervention group adjusted mean	260	230	260	236	216	282	246	248	248	221
Control group adjusted mean	270	242	273	246	233	282	256	260	260	206
Difference in means	-10	-12	-12	-11	-18	1	-10	-11	-12	12
P-value (for difference)	0.08	0.03	0.05	0.04	0.00	0.89	0.03	0.14	0.00	0.46
Interaction		-3		1		18		-1		24
P-value (for interaction)		0.73		0.87		0.02		0.89		0.16

(continued)

**Exhibit I-20. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible FFS Medicare Beneficiaries by Subpopulation (continued)**

Outcome	No Housing Need	Housing Need	No Food Need	Food Need	No Transportation Need	Transportation Need	No Utility Need	Utility Need	No Safety Need	Safety Need
<b>Unplanned Readmissions per 1,000 Discharges</b>										
Intervention group discharges	6,263	4,308	4,816	5,755	5,023	5,548	7,621	2,950	DNC	DNC
Control group discharges	2,849	2,209	2,189	2,869	2,321	2,737	3,527	1,531	DNC	DNC
Intervention group adjusted mean	269	268	265	271	251	285	271	262	DNC	DNC
Control group adjusted mean	301	262	290	277	272	295	284	284	DNC	DNC
Difference in means	-30	6	-24	-6	-21	-10	-13	-21	DNC	DNC
P-value (for difference)	0.00	0.63	0.04	0.53	0.06	0.36	0.15	0.14	DNC	DNC
Interaction		36		17		11		-8		DNC
P-Value (for interaction)		0.02		0.26		0.46		0.63		DNC

P-values (for difference) compare the intervention group means with the control group mean within each subpopulation; P-values (for interaction) compare the difference in means across each subpopulation pair.

The total expenditure PBPM (\$) impact was estimated using a generalized linear model with a Gaussian error distribution and log link. The inpatient admission and ED visit outcomes were estimated using a Poisson specification. The unplanned readmission outcome was estimated using a logistic specification.

Sample sizes represent the total number of unique beneficiaries observed during the post-screening period or total number of discharges during the post-screening period.

Source: RTI analysis of Chronic Conditions Data Warehouse Medicare claims data, May 2015–December 2021.

Definitions: DNC = did not converge; ED = emergency department; PAC = post-acute care; PBPM = per beneficiary per month; PCP = primary care provider.

Other Notes: Except for unplanned readmissions, all averages were weighted, using each beneficiary’s eligibility fraction as a weight variable.

**Exhibit I-21. Difference-in-Differences Results for Alignment Track Navigation-Eligible FFS Medicare Beneficiaries and Assistance Track Control Group FFS Medicare Beneficiaries by Subpopulation**

Outcome	Non-Hispanic White	Hispanic and/or Nonwhite	Non-Dually Eligible	Dually Eligible	Nondisabled	Disabled	1 HRSN	More than 1 HRSN	Urban	Rural
<b>Beneficiary-Level Outcomes</b>										
Unique Alignment Track beneficiaries	9,307	6,715	4,724	11,298	5,936	10,086	7,265	8,757	13,370	2,652
Unique Assistance Track control group beneficiaries	2,742	1,097	1,361	2,478	1,489	2,350	1,767	2,072	2,928	911
<b>Total Expenditures (PBPM)</b>										
Difference-in-differences	-\$430	-\$393	-\$752	-\$271	-\$701	-\$240	-\$466	-\$370	-\$443	-\$235
P-value (for D-in-D)	0.08	0.18	0.02	0.21	0.00	0.27	0.06	0.14	0.09	0.13
Interaction		\$36		\$481		\$461		\$96		\$207
P-value (for interaction)		0.89		0.01		0.00		0.44		0.47
<b>ED Visits per 1,000 Beneficiaries</b>										
Difference-in-differences	-56	-96	-9	-96	-5	-109	-93	-50	-63	-109
P-value (for D-in-D)	0.06	0.24	0.76	0.02	0.83	0.05	0.11	0.12	0.15	0.01
Interaction		-40		-87		-103		43		-46
P-value (for interaction)		0.63		0.01		0.10		0.47		0.47
<b>Inpatient Admissions per 1,000 Beneficiaries</b>										
Difference-in-differences	-30	-23	-54	-16	-34	-21	-26	-28	-22	-51
P-value (for D-in-D)	0.11	0.21	0.01	0.36	0.08	0.16	0.13	0.20	0.18	0.03
Interaction		7		38		13		-2		-28
P-value (for interaction)		0.72		0.04		0.40		0.92		0.17

(continued)

**Exhibit I-21. Difference-in-Differences Results for Alignment Track Navigation-Eligible FFS Medicare Beneficiaries and Assistance Track Control Group FFS Medicare Beneficiaries by Subpopulation (continued)**

Outcome	Non-Hispanic White	Hispanic and/or Nonwhite	Non-Dually Eligible	Dually Eligible	Nondisabled	Disabled	1 HRSN	More than 1 HRSN	Urban	Rural
<b>Unplanned Readmissions per 1,000 Discharges</b>										
Alignment Track discharges	9,589	7,490	4,640	12,439	6,831	10,248	7,585	9,494	15,028	2,051
Assistance Track control group discharges	3,383	1,675	1,654	3,404	2,276	2,782	2,385	2,673	4,162	896
Difference-in-differences	-4	-32	-9	-19	-18	-11	-3	-24	-14	-21
P-value (for D-in-D)	0.83	0.13	0.72	0.29	0.60	0.34	0.86	0.28	0.34	0.36
Interaction		-28		-10		7		-21		-7
P-value (for interaction)		0.29		0.77		0.85		0.47		0.79

P-values (for D-in-D) test for differences in changes in outcomes between the intervention and comparison groups within each subpopulation; P-values (for interaction) compare the difference in the D-in-D estimates between each subpopulation pair.

The total expenditure PBPM (\$) impact was estimated using a generalized linear model with a Gaussian error distribution and log link. The inpatient admission and ED visit outcomes were estimated using a Poisson specification. The unplanned readmission outcome was estimated using a logistic specification.

Sample sizes represent the total number of unique beneficiaries observed during the post-screening period or total number of discharges during the post-screening period.

Source: RTI analysis of Chronic Conditions Data Warehouse Medicare claims data, May 2015–December 2021.

Definitions: D-in-D = difference-in-differences; ED = emergency department; PBPM = per beneficiary per month.

Other Notes: Except for unplanned readmissions, all averages were weighted, using each beneficiary’s eligibility fraction as a weight variable times a propensity score weight.

**Exhibit I-22. Difference-in-Differences Results for Alignment Track Navigation-Eligible FFS Medicare Beneficiaries and Assistance Track Control Group FFS Medicare Beneficiaries by Type of HRSN**

<b>Outcome</b>	<b>No Housing Need</b>	<b>Housing Need</b>	<b>No Food Need</b>	<b>Food Need</b>	<b>No Transportation Need</b>	<b>Transportation Need</b>	<b>No Utility Need</b>	<b>Utility Need</b>	<b>No Safety Need</b>	<b>Safety Need</b>
<b>Beneficiary-Level Outcomes</b>										
Unique Alignment Track beneficiaries	8,921	7,101	5,711	10,311	8,643	7,379	11,533	4,489	15,319	703
Unique Assistance Track control group beneficiaries	2,082	1,757	1,582	2,257	1,895	1,944	2,651	1,188	3,657	182
<b>Total Expenditures (PBPM)</b>										
Difference-in-differences	-\$574	-\$206	-\$591	-\$297	-\$249	-\$583	-\$380	-\$491	-\$416	-\$392
P-value (for D-in-D)	0.03	0.34	0.02	0.23	0.23	0.05	0.12	0.11	0.10	0.08
Interaction		\$367		\$294		-\$333		-\$111		\$23
P-value (for interaction)		0.02		0.06		0.07		0.67		0.95
<b>ED Visits per 1,000 Beneficiaries</b>										
Difference-in-differences	-111	-18	-155	-17	-39	-110	-59	-98	-72	-49
P-value (for D-in-D)	0.02	0.65	0.01	0.62	0.43	0.01	0.08	0.07	0.04	0.80
Interaction		94		138		1		-39		23
P-value (for interaction)		0.12		0.04		0.25		0.34		0.90
<b>Inpatient Admissions per 1,000 Beneficiaries</b>										
Difference-in-differences	-31	-20	-38	-20	-16	-40	-26	-30	-28	6
P-value (for D-in-D)	0.12	0.22	0.08	0.22	0.26	0.10	0.12	0.30	0.11	0.82
Interaction		12		18		-24		-4		34
P-value (for interaction)		0.52		0.31		0.25		0.88		0.35

(continued)

**Exhibit I-22. Difference-in-Differences Results for Alignment Track Navigation-Eligible FFS Medicare Beneficiaries and Assistance Track Control Group FFS Medicare Beneficiaries by Type of HRSN (continued)**

Outcome	No Housing Need	Housing Need	No Food Need	Food Need	No Transportation Need	Transportation Need	No Utility Need	Utility Need	No Safety Need	Safety Need
<b>Unplanned Readmissions per 1,000 Discharges</b>										
Alignment Track discharges	9,672	7,407	6,201	10,878	8,549	8,530	12,482	4,597	DNC	DNC
Assistance Track control group discharges	2,849	2,209	2,189	2,869	2,321	2,737	3,527	1,531	DNC	DNC
Difference-in-differences	-26	1	-17	-10	4	-34	-12	-27	DNC	DNC
P-value (for D-in-D)	0.17	0.98	0.25	0.62	0.86	0.07	0.50	0.47	DNC	DNC
Interaction		27		7		-37		-15		DNC
P-value (for interaction)		0.25		0.75		0.17		0.73		DNC

P-values (for D-in-D) test for differences in changes in outcomes between the intervention and comparison groups within each subpopulation; P-values (for interaction) compare the difference in the D-in-D estimates between each subpopulation pair.

The total expenditure PBPM (\$) impact was estimated using a generalized linear model with a Gaussian error distribution and log link. The inpatient admission and ED visit outcomes were estimated using a Poisson specification. The unplanned readmission outcome was estimated using a logistic specification.

Sample sizes represent the total number of unique beneficiaries observed during the post-screening period or total number of discharges during the post-screening period.

Source: RTI analysis of Chronic Conditions Data Warehouse Medicare claims data, May 2015–December 2021.

Definitions: D-in-D = difference-in-differences; DNC = did not converge; ED = emergency department; PBPM = per beneficiary per month.

Other Notes: Except for unplanned readmissions, all averages were weighted, using each beneficiary’s eligibility fraction as a weight variable times a propensity score weight.

## Medicare Advantage

**Exhibit I-23. Regression-Adjusted Comparison of Post-enrollment Means for Combined Analysis of Medicare Advantage and FFS Medicare Beneficiaries in the Assistance Track**

Outcome	1–3 Months After AHC Screening	4–6 Months After AHC Screening	7–9 Months After AHC Screening	10–12 Months After AHC Screening	Overall
<b>Number of beneficiaries</b>					
Unique intervention group beneficiaries	7,758	6,968	5,404	3,873	7,899
Unique control group beneficiaries	3,028	2,689	2,023	1,420	3,065
<b>ED visits/1,000 beneficiaries</b>					
Intervention group adjusted mean	731	674	646	731	695
Control group adjusted mean	739	698	629	654	689
Difference	-8	-24	18	79	7
% difference	-1.1	-3.4	2.8	12.1	1.1
P-value	0.67	0.22	0.42	0.01	0.73
<b>Admissions/1,000 beneficiaries</b>					
Intervention group adjusted mean	293	243	225	220	251
Control group adjusted mean	291	253	233	210	254
Difference	2	-11	-8	11	-3
% difference	0.6	-4.2	-3.3	5.1	-1.0
P-value	0.89	0.38	0.56	0.50	0.84
<b>ACSC admissions/1,000 beneficiaries</b>					
Intervention group adjusted mean	25	14	13	14	17
Control group adjusted mean	18	15	15	14	16
Difference	6	-1	-2	-1	1
% difference	35.2	-8.0	-13.3	-4.7	7.4
P-value	0.04	0.68	0.54	0.87	0.71
<b>PCP visits/1,000 beneficiaries</b>					
Intervention group adjusted mean	2,106	1,787	1,757	1,686	1,867
Control group adjusted mean	2,116	1,841	1,748	1,646	1,877
Difference	-9	-52	9	40	-10
% difference	-0.4	-2.8	0.5	2.4	-0.5
P-value	0.76	0.10	0.80	0.36	0.78
<b>All-cause readmissions/1,000 discharges</b>					
Intervention group discharges	2,565	1,616	1,099	655	5,935
Control group discharges	1,007	637	421	218	2,283
Intervention group adjusted mean	313	286	231	227	280
Control group adjusted mean	331	273	248	245	289
Difference	-17	13	-17	-18	-9
% difference	-5.0	4.8	-6.8	-7.4	-3.0
P-value	0.33	0.52	0.49	0.58	0.68

P-values compare the intervention group means with the control group mean.

The inpatient admission, ACSC admission, ED visit, and PCP visit outcomes were estimated using a Poisson specification. The all-cause readmission outcome was estimated using a logistic specification.

Source: RTI analysis of Integrated Data Repository Medicare Advantage encounter data and FFS Medicare claims data, May 2015–December 2019.

Definitions: ACSC = ambulatory care sensitive condition; AHC = Accountable Health Communities; ED = emergency department; PBPM = per beneficiary per month; PCP = primary care provider.

Other Notes: Except for all-cause readmissions, all averages were weighted, using each beneficiary's eligibility fraction as a weight variable.

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# Appendix J: Covariate Balance and Baseline Trends for Chapter 8

This appendix provides additional detail to support the analytic approach used to estimate intervention impacts in the Assistance and Alignment Tracks.

For the Assistance Track, we present baseline covariate balance statistics that show beneficiaries randomized to the intervention group are nearly identical to beneficiaries randomized to the control group in terms of sociodemographic and community-level characteristics. This finding is expected and supports comparing post-screening outcomes across the intervention and control groups to measure AHC Model impacts for the Assistance Track.

Because the Alignment Track does not have a randomized control group, we reused the Assistance Track control group as a comparison group in a difference-in-differences (D-in-D) design for impact analyses. This appendix describes baseline trends for study outcomes for Medicaid and FFS Medicare beneficiaries participating in the Alignment Track intervention and for beneficiaries in the Assistance Track control group. The D-in-D specification requires parallel trends for the intervention and comparison groups during the prescreening baseline period.

This appendix also describes results of propensity score analyses used to balance the Alignment Track control group with the Assistance Track intervention group for the Medicaid and fee-for-service (FFS) Medicare populations. Although reusing the Assistance Track control group ensures that the comparison group meets the same AHC Model eligibility criteria as the Alignment Track intervention group, it does not guarantee that sociodemographic and community characteristics are similar. The propensity score analysis addresses these differences and improves our confidence in the reliability of the impact estimates produced in this report.

## Comparison of Baseline Sociodemographic and Community Characteristics in the Assistance Track

### Baseline Sociodemographic and Community Characteristics Among Medicaid Beneficiaries

**Exhibit J-1** shows that Medicaid beneficiaries in the Assistance Track intervention group were nearly indistinguishable from Medicaid beneficiaries in the Assistance Track control group for all sociodemographic and county- or community-level characteristics observed.

### Baseline Sociodemographic and Community Characteristics Among FFS Medicare Beneficiaries

Similar to the Medicaid population, **Exhibit J-2** shows that FFS Medicare beneficiaries in the Assistance Track intervention group were nearly indistinguishable from FFS Medicare beneficiaries in the Assistance Track control group for all sociodemographic and county- or community-level characteristics observed.

**Exhibit J-1. Baseline Descriptive Statistics for Medicaid Beneficiaries in the Assistance Track Intervention and Control Groups, Year Before Screening**

Variable	Intervention Group (N=20,097)	Control Group (N=9,379)
Sociodemographic characteristics		
Female (%)	64	64
Number of HRSNs	1.96	2.11
Chronic Illness and Disability Payment System risk score	0.95	0.96
Number of chronic conditions	0.63	0.64
Age (mean)	28.8	28.7
Child (<19 years) (%)	32	32
White (%)	39	40
Missing race (%)	15	16
Enrolled because of disability (%)	16	17
Enrolled in managed care (%)	81	82
Enrolled in the Children's Health Insurance Program (%)	3	3
Number of months enrolled in Medicaid		10.43
County- or community-level characteristics		
Percentage of people residing in a rural area	16	17
Percentage of people residing in a mental health professional shortage area	35	35
Hospital beds per 1,000 population	3.35	3.30
Percentage of people (under 65 years) without health insurance	10.8	11.2
Psychiatrists per 1,000 population	0.14	0.14
Certified mental health counselors per 1,000 population	0.00	0.00
Percentage of people 16 years and older who are unemployed	4.5	4.6
Percentage of adults in fair/poor health	17.40	17.46
Primary care physician-to-population ratio	7.50	7.36
Median income (\$)	58,132	57,904
Percentage of people in poverty	15.1	15.2
Social Deprivation Index score	59.36	59.59
Social service provider density	130.42	127.66
Food environment index	7.80	7.80
Severe housing index	16.85	16.84
COVID-19 pandemic vulnerability index	0.04	0.04

Definitions: COVID-19 = coronavirus disease 2019; HRSN = health-related social need.

**Exhibit J-2. Baseline Descriptive Statistics for FFS Medicare Beneficiaries in the Assistance Track Intervention and Control Groups, Year Before Screening**

<b>Variable</b>	<b>Intervention Group (N=9,568)</b>	<b>Control Group (N=4,007)</b>
<b>Sociodemographic characteristics</b>		
Female (%)	61	63
Number of HRSNs	1.77	1.88
Hierarchical condition category (HCC) risk score	1.97	1.97
Number of chronic conditions	7.73	7.73
Age (mean)	62.6	62.0
Age <65 years (%)	50	51
Dually enrolled in Medicaid (%)	57	59
Enrolled because of disability (%)	61	62
Enrolled because of end-stage renal disease (%)	2.8	2.6
Number of months enrolled in Medicare	10.4	10.5
Black (%)	20	21
Other race (other+Asian) (%)	1	3
Hispanic (%)	6	6
<b>County- or community-level characteristics</b>		
Percentage of people residing in a rural area	22	22
Hospital beds per 1,000 population	3.36	3.42
Percentage of people (under 65 years) without health insurance	10.3	10.3
Percentage of people residing in a mental health professional shortage area	36	36
Psychiatrists per 1,000 population	0.12	0.12
Certified mental health counselors per 1,000 population	0.00	0.00
Percentage of people 16 years and older who are unemployed	4.7	4.7
Percentage of adults in fair/poor health	17.1	17.1
Primary care physician-to-population ratio	7.50	7.65
Median income (\$)	60,217	60,465
Percentage of people in poverty	14.9	14.8
Social Deprivation Index score	53.55	53.10
Social service provider density	128.69	130.86
Food environment index	7.99	8.01
Severe housing index	16.61	16.63
COVID-19 pandemic vulnerability index	0.14	0.12

Definitions: COVID-19 = coronavirus disease 2019; HCC = hierarchical condition category; HRSN = health-related social need.

# Assessment of Parallel Baseline Trends for the Alignment Track Impact Analysis

D-in-D models were used to measure impacts for the Alignment Track. D-in-D models assume that the outcomes for the intervention and comparison groups follow a similar growth trend during the baseline period. We investigated whether trends in the baseline period, which is defined at the beneficiary level as the 3 years before screening, satisfy this trend assumption.

To test the assumption that the Alignment Track intervention group and the comparison group had parallel baseline trends, we estimated a model with a linear trend during the baseline period (see equation J.1) and tested whether this trend differed for Alignment Track beneficiaries relative to comparison group beneficiaries.

$$Y_{ijt} = \alpha_0 + \beta_1 I_i + \alpha_1 t + \beta_2 I_i * t + \lambda X_{ij} + \epsilon_{ijt}, \tag{J.1}$$

where

- $Y_{ijt}$  = a performance measure (e.g., total per beneficiary per month [PBPM] cost per quarter) for the  $i$ -th beneficiary in the  $j$ -th group (Alignment Track or comparison), in quarter  $t$
- $I$  = a 0,1 indicator (0 = comparison group, 1 = Alignment Track)
- $X$  = a vector of beneficiary and county characteristics
- $t$  = a linear time trend ranging from 1 to 12
- $\epsilon_{ijt}$  = error term

In equation J.1, the linear time trend in the comparison group is  $\alpha_1 t$ , whereas for Alignment Track beneficiaries ( $I=1$ ), it is  $(\alpha_1 + \beta_2) * t$ . Hence,  $\beta_2$  measures the difference in linear trends, and the  $t$ -statistic for this coefficient can be used to test the null hypothesis of equal baseline trends ( $\beta_2=0$ ). In other words, rejecting the null hypothesis would suggest that the assumption of equal trends underlying our D-in-D outcome models is not met.

## Baseline Trend Results for Medicaid and FFS Medicare

Baseline trends were estimated for the following outcomes: total expenditures (plus emergency department [ED], inpatient, and PAC PBPM expenditures for FFS Medicare beneficiaries), count of inpatient admissions, count of ED visits, count of ambulatory care sensitive condition (ACSC) inpatient admissions, probability of an unplanned readmission within 30 days after an inpatient discharge, count of visits to a PCP, follow-up visits within 14 days of discharge, follow-up visits within 30 days after a MH discharge, ED visits within 30 days of discharge, avoidable ED visits, Asthma Medication Ratio > 50%, treatment for respiratory illnesses, antidepressant medication management (12 weeks and 6 months), and initiation of alcohol or other drug (AOD) treatment.

Among core outcomes (i.e., total expenditures, inpatient admissions, ED visits, and readmissions), we found no statistically significant differences at the P-value < .05 or P-value < .10 level in baseline trends. However, baseline trends for PCP visits among Medicaid beneficiaries and antidepressant medication management among both Medicaid and FFS Medicare beneficiaries were significantly different (**Exhibit J-3**). Because there were relatively few outcomes, we modeled all outcomes assuming parallel trends. Sensitivity analyses, which included a baseline linear time trend interacted with the intervention indicator to account for nonparallel trends, also suggest that despite evidence of nonparallel trends, results are similar regardless of whether we assume parallel trends or estimate a model that does not assume parallel trends.

**Exhibit J-3. Baseline Trend Differences Between the Alignment Track Intervention and Comparison Groups for Medicaid and FFS Medicare Beneficiaries**

Outcome	Medicaid		FFS Medicare	
	Alignment Track—CG Trend Difference (SE)	P-Value of Trend Differences	Alignment Track—CG Trend Difference (SE)	P-Value of Trend Differences
Total expenditures (PBPM)	5.59 (10.30)	0.59	-13.57 (41.69)	0.74
ED expenditures (PBPM)	N/A	N/A	0.63 (2.96)	0.83
Inpatient expenditures (PBPM)	N/A	N/A	0.42 (29.66)	0.99
PAC expenditures (PBPM)	N/A	N/A	-7.42 (6.52)	0.25
Inpatient admissions/1,000 beneficiaries	0.99 (1.41)	0.48	0.31 (3.19)	0.92
ACSC admissions/1,000 beneficiaries	-0.54 (0.42)	0.19	-0.28 (0.88)	0.75
Unplanned readmission within 30 days of discharge/ 1,000 discharges	-2.25 (2.18)	0.30	-3.22 (2.78)	0.25
Follow-up visit within 14 days of discharge/1,000 discharges	4.19 (3.34)	0.45	-0.55 (1.88)	0.77
Follow-up visit within 30 days after a MH discharge/1,000 discharges	-3.22 (59.39)	0.96	17.53 (28.88)	0.54
ED visit within 30 days of discharge/1,000 discharges	0.45 (1.79)	0.80	-2.50 (2.81)	0.37
ED visits/ 1,000 beneficiaries	9.69 (6.36)	0.13	3.11 (6.56)	0.64
Avoidable ED visits/1,000 beneficiaries	5.31 (3.47)	0.13	0.92 (2.89)	0.75
PCP visits/1,000 beneficiaries	34.32 (11.81)	0.03	-1.51 (7.08)	0.83
Asthma Medication Ratio > 50%	1.98 (1.79)	0.27	2.38 (2.18)	0.28
Treatment for respiratory illnesses	0.9 (0.8)	0.24	-0.52 (0.97)	0.59
Antidepressant medication management, 12 weeks	4.15 (1.56)	0.01	1.90 (1.49)	0.20
Antidepressant medication management, 6 months	2.30 (2.01)	0.25	4.31 (1.71)	0.01
Initiation of AOD treatment	-0.02 (0.01)	0.17	4.04 (3.02)	0.18

Definitions: ACSC = ambulatory care sensitive condition; AOD = alcohol or other drug; CG = comparison group; ED = emergency department; N/A = not available; PAC = post-acute care; PBPM = per beneficiary per month; PCP = primary care provider; SE = standard error.

# Propensity Score Analysis for the Alignment Track

There is no randomized control group for the Alignment Track. Instead, we took advantage of the availability of a randomized control group for the Assistance Track and reused it as the comparison group for the Alignment Track. Like the Alignment Track intervention group, the Assistance Track control group had to meet the AHC Model’s ED utilization and HRSN navigation eligibility criteria, meaning that the two groups are already similar on these dimensions. We used propensity score weighting to ensure even more similarity between the two groups. When the intervention and comparison groups are similar on a set of characteristics like sociodemographic and geographic characteristics, health care utilization, and need for social services, we have more confidence that comparisons of evaluation outcomes between the two groups are the result of the AHC intervention and not confounding characteristics.

In a propensity score model, a logistic regression is used to model the probability (or propensity) that an individual is in the intervention group given a set of sociodemographic and other characteristics. The model is refined by removing or adding characteristics to improve model performance in terms of its ability to balance covariates. Models were created at the person-year level and at the inpatient-discharge level for the readmissions, follow-up visits within 14 days of discharge, and ED visits within 30 days of discharge. Discharge-level measures were only defined among beneficiaries with an inpatient discharge, so a separate propensity score model was created for that subsample. We also estimated a separate model for the follow-up visits within 30 days of a mental health discharge, because this population was distinct from the other discharge-level measures, which explicitly excluded psychiatric admissions from the denominator. **Exhibit J-4** shows the covariates considered for inclusion in the propensity score analysis across Medicaid and FFS Medicare beneficiaries.

## Exhibit J-4. Propensity Score Characteristics

Sociodemographic Characteristics Based on the 12 Months Before AHC Model Screening: Medicaid and FFS Medicare Enrollment Data	Area-Level: Area Health Resource File Data	Area-Level: AHC Community Profile Data	Area Level: COVID-19 Vulnerability
Age	Hospital beds per 1,000 population, 2017	Percentage of adults who rate their health “fair” or “poor”	COVID-19 Pandemic Vulnerability Index (PVI)
Age <65 years <sup>1</sup>	Percentage of people (under 65 years) without health insurance, 2017	Primary care physician-to-population ratio	
Child (<19 years) <sup>2</sup>	Percentage of people residing in a county designated as a mental health professional shortage area, 2017	Median income	
Sex	Psychiatrists per 1,000 population, 2017	Poverty rate	

(continued)

### Exhibit J-4. Propensity Score Characteristics (continued)

Sociodemographic Characteristics Based on the 12 Months Before AHC Model Screening: Medicaid and FFS Medicare Enrollment Data	Area-Level: Area Health Resource File Data	Area-Level: AHC Community Profile Data	Area Level: COVID-19 Vulnerability
Number of HRSNs at AHC Model screening	Percentage of people 16 years and older who are unemployed, 2017	Social Deprivation Index (composite measure encompassing poverty, education, single-parent households, rental housing, overcrowded housing, no car, and unemployment)	
Race	Percentage of people residing in a county designated as a predominantly rural area	Social service provider density	
Ethnicity		Food environment index (limited access to health foods and food insecurity)	
Enrolled because of disability for at least 1 month in the year		Severe housing index	
Enrolled in Medicaid managed care <sup>2</sup> for at least 1 month in the year			
Enrolled in the Children's Health Insurance Program <sup>2</sup> for at least 1 month in the year			
Months enrolled in Medicare <sup>1</sup> in the year			
Months enrolled in Medicaid <sup>2</sup> in the year			
Dually enrolled in Medicaid <sup>1</sup> for at least 1 month in the year			
HCC risk score <sup>1</sup>			
Chronic Illness and Disability Payment System risk score <sup>2</sup>			
Number of chronic conditions in the year			

<sup>1</sup> Medicare covariate only.

<sup>2</sup> Medicaid covariate only.

HCC scores were calculated during the calendar year in which each beneficiary was screened.

Definitions: AHC = Accountable Health Communities; COVID-19 = coronavirus disease 2019; FFS = fee for service;

HCC = hierarchical condition category; HRSN = health-related social need; PVI = COVID-19 Pandemic Vulnerability Index.

Using these characteristics, we iterated through several propensity score models and describe the final model below for the full study sample (the final models for the inpatient-discharge-level sample and for the mental health discharge-level sample are not shown). Adequacy of propensity score models was assessed using overlay plots and review of the prevalence of characteristics for the sample before and after weighting the comparison group by the resulting propensity score. Overlay plots show the distribution of the resulting propensity scores across the intervention group and the comparison group. When distributions of scores are very similar between groups, the propensity score model is considered to have created good balance between groups. Covariate balance tables before and after propensity score weighting demonstrate if the samples are similar on the covariates included in the propensity score. The weighted standardized difference is a metric that helps assess how different covariate estimates are; if the standardized difference is  $< 0.10$ , balance is considered good. It is important to note that the standardized difference may be large for area-level covariates even though the group prevalence estimates are similar, so the standardized difference must be considered in conjunction with a qualitative assessment of the similarity of estimates to judge model fit. For example, we applied a criterion that if the difference in prevalence or mean between groups was less than a value of 2, we considered the estimates similar, even if the standardized difference is  $> 0.10$ . Assessments of propensity score fit are shown for the year before screening.

## Medicaid Propensity Score Results

The final model includes sociodemographic characteristics along with rural residence, percentage of the county in poverty, and whether the county was a mental health professional shortage area. Area-level and community characteristics have relatively little variation across the study sample, and this lack of variation often results in propensity scores that do not balance the intervention and comparison group well. Given this, we minimized the number of area-level covariates included in the model. Adding several, but not all, area-level covariates addressed some regional variation while keeping the model parsimonious enough to avoid poor propensity score weighted balance between study groups. Given the disparity between groups in residence in a rural region and a region that is a designated mental health professional shortage area, we chose those covariates for the model. We chose poverty rate as a community characteristic to include in the model given its correlation with other community characteristics like the social deprivation, food environment, and severe housing problem indices. We did include the COVID-19 Pandemic Vulnerability Index (PVI) in the final propensity score model because the overlay plots and covariate balance were nearly identical when including and excluding it from the model.

Prior to propensity score weighting, there were differences between the intervention and comparison groups for several sociodemographic and county-/community-level covariates, and standardized differences were greater than 0.10 for those characteristics (**Exhibit J-5**). After propensity score weighting, standardized differences were below the 0.10 threshold for most covariates, indicating an acceptable level of covariate balance. Even though some characteristics (e.g., food environment index, severe housing index) were still not balanced after propensity score weighting the comparison group, the two groups were more similar on those characteristics than without weighting. Several other county-/community-level covariates were well balanced after propensity score weighting, but the weighted standardized differences remained greater than 0.10 (e.g., hospital beds per 1,000 population and psychiatrists per 1,000 population). The percentage of the population in Medicaid managed care also was not well balanced in the unweighted sample, and the model did not do well at improving that balance. This covariate was included in the outcome regression models, so impact estimates controlled for this imbalance. Moreover, as shown in **Exhibit J-6**, the overlay plot shows that the distribution of propensity scores for the comparison group was similar to the distribution for the intervention group (shown by the close overlay of the red dotted line and the black solid line). The balance and overlay plots for the first 2 years of the baseline period and 1 year after AHC enrollment also looked similar to the balance and plots for the year shown here.

**Exhibit J-5. Covariate Balance Between Alignment Track Intervention and Comparison Groups in the Last Baseline Year, Medicaid Beneficiaries**

Variable	Unweighted Mean or Percentage, Intervention Group (N=37,544)	Unweighted Mean or Percentage, Comparison Group (N=9,379)	Unweighted Standardized Difference	Weighted Mean or Percentage, Comparison Group (N=36,989)	Weighted Standardized Difference
<b>Sociodemographic characteristics</b>					
Female	64%	64%	0.00	65%	0.01
Number of HRSNs	2.07	2.11	0.04	2.08	0.01
Chronic Illness and Disability Payment System risk score	1.06	0.96	0.16	1.06	0.01
Number of chronic conditions	0.80	0.64	0.13	0.82	0.02
Age	33.28	28.74	0.25	33.94	0.04
Child (<19 years)	19%	32%	0.30	17%	0.06
White	32%	40%	0.18	33%	0.03
Enrolled because of disability	17%	17%	0.01	18%	0.01
Enrolled in managed care	76%	82%	0.16	81%	0.12
Enrolled in the Children's Health Insurance Program	3%	3%	0.01	3%	0.02
Number of months enrolled in Medicaid	10.62	10.43	0.07	10.55	0.02
<b>County- or community-level characteristics</b>					
Percentage of people residing in a rural area	10%	17%	0.19	9%	0.03
Percentage of people residing in a mental health professional shortage area	19%	35%	0.38	20%	0.04
Hospital beds per 1,000 population <sup>1</sup>	3.72	3.30	0.16	3.43	0.12
Percentage of people (under 65 years) without health insurance	10.06	11.18	0.21	10.49	0.08
Psychiatrists per 1,000 population <sup>1</sup>	0.17	0.14	0.27	0.15	0.20
Certified mental health counselors per 1,000 population <sup>1</sup>	0.00	0.00	0.13	0.0006	0.14
Percentage of people 16 years and older who are unemployed <sup>1</sup>	4.40	4.59	0.16	4.43	0.05
Percentage of adults in fair/poor health <sup>1</sup>	16.90%	17.46%	0.15	16.75	0.02

(continued)

### Exhibit J-5. Covariate Balance Between Alignment Track Intervention and Comparison Groups in the Last Baseline Year, Medicaid Beneficiaries (continued)

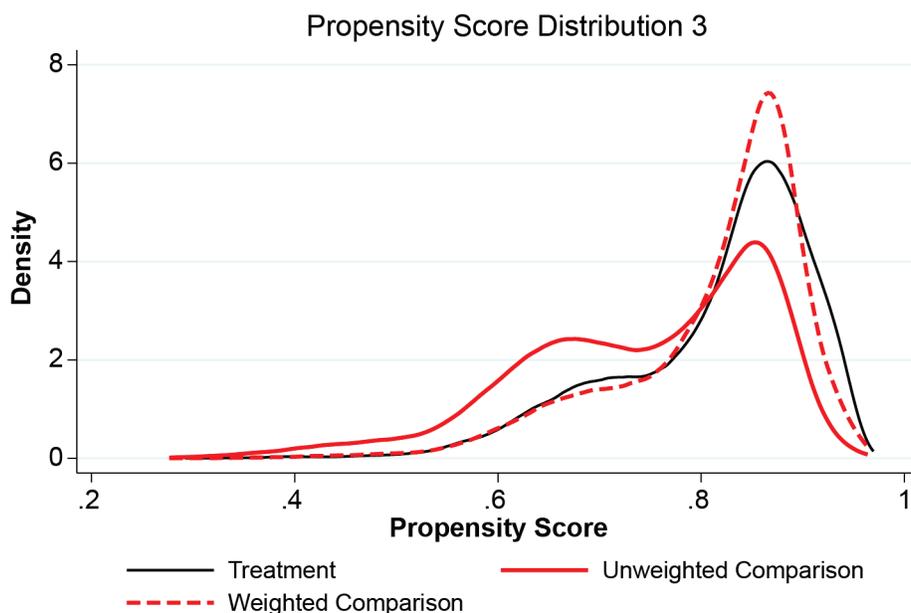
Variable	Unweighted Mean or Percentage, Intervention Group (N=37,544)	Unweighted Mean or Percentage, Comparison Group (N=4,405)	Unweighted Standardized Difference	Weighted Mean or Percentage, Comparison Group (N=18,416)	Weighted Standardized Difference
Primary care physician-to-population ratio <sup>1</sup>	8.82	7.36	0.59	7.94	0.04
Median income <sup>1</sup>	61,696.19	57,903.80	0.26	60,435.01	0.36
Percentage of people in poverty	14.62%	15.18	0.10	14.49	0.09
Social deprivation index score <sup>1</sup>	59.21	59.59	0.02	59.34	0.02
Social service provider density <sup>1</sup>	157.46	127.66	0.45	140.43	0.01
Food environment index <sup>1</sup>	7.62	7.80	0.23	7.79	0.25
Severe housing index <sup>1</sup>	19.49	16.84	0.57	17.18	0.22
COVID-19 PVI <sup>1</sup>	0.05	0.04	0.10	0.04	0.08

<sup>1</sup> Not included in the propensity score model, but covariate balance between groups was examined. Definitions: COVID-19 = coronavirus disease 2019; HRSN = health-related social need; PVI = COVID-19 Pandemic Vulnerability Index.

### FFS Medicare Propensity Score Results

The final FFS Medicare model was very similar to the Medicaid model; it included sociodemographic characteristics along with rural residence, percentage of the county in poverty, and whether the county was a mental health professional shortage area. We tested the FFS Medicare propensity score model including and excluding the PVI. Unlike in our Medicaid analysis, inclusion of the PVI in the FFS Medicare propensity score model worsened the overlay plot (i.e., the distribution of propensity scores differed between the intervention and weighted comparison groups), and the inclusion of the PVI did not greatly improve covariate balance. Therefore, we included the PVI as a covariate in the FFS Medicare outcome models, but not in the FFS Medicare propensity score model. Prior to propensity score weighting, several covariates differed between the intervention and comparison groups, and standardized differences were greater than 0.10 for some individual- and county-level characteristics (**Exhibit J-7**). After propensity score weighting, standardized differences were below the 0.10 threshold for most covariates, indicating an acceptable level of covariate balance. Even though four characteristics (social service provider density, food environment index, severe housing index, COVID-19 PVI) were still not balanced after propensity score weighting the comparison group, the two groups were more similar on those characteristics with weighting than they were without. Moreover, the overlay plot in **Exhibit J-8** shows that the propensity score distribution of the comparison group was similar to the intervention group (i.e., the red dotted line is close to the black solid line). The balance and overlay plots for the first 2 years of the baseline period and the year after AHC enrollment also looked similar to the balance and plots for the year shown here.

**Exhibit J-6. Overlay Plot for the Propensity Score in the Last Baseline Year, Medicaid Beneficiaries**



**Exhibit J-7. Covariate Balance Between Alignment Track Intervention and Comparison Groups in the Last Baseline Year, FFS Medicare Beneficiaries**

Variable	Unweighted Mean or Percentage, Intervention Group (N=10,259)	Unweighted Mean or Percentage, Comparison Group (N=2,643)	Unweighted Standardized Difference	Weighted Mean or Percentage, Comparison Group (N=10,201)	Weighted Standardized Difference
<b>Sociodemographic characteristics</b>					
Number of HRSNs	1.85	1.88	0.03	1.86	0.01
HCC risk score	1.99	1.97	0.01	2.01	0.01
Number of chronic conditions	7.36	7.73	0.08	7.36	0.00
Age	61.27	62.02	0.05	61.33	0.00
Dually enrolled in Medicaid	64%	59%	0.10	65%	0.02
Enrolled because of disability	63%	62%	0.03	63%	0.01
Enrolled because of end-stage renal disease	3.0%	2.6%	0.02	3.0%	0.00
Age <65 years	53%	51%	0.04	53%	0.01
Number of months enrolled in Medicare	10.46	10.45	0.00	10.45	0.00
Female	60%	63%	0.06	61%	0.02

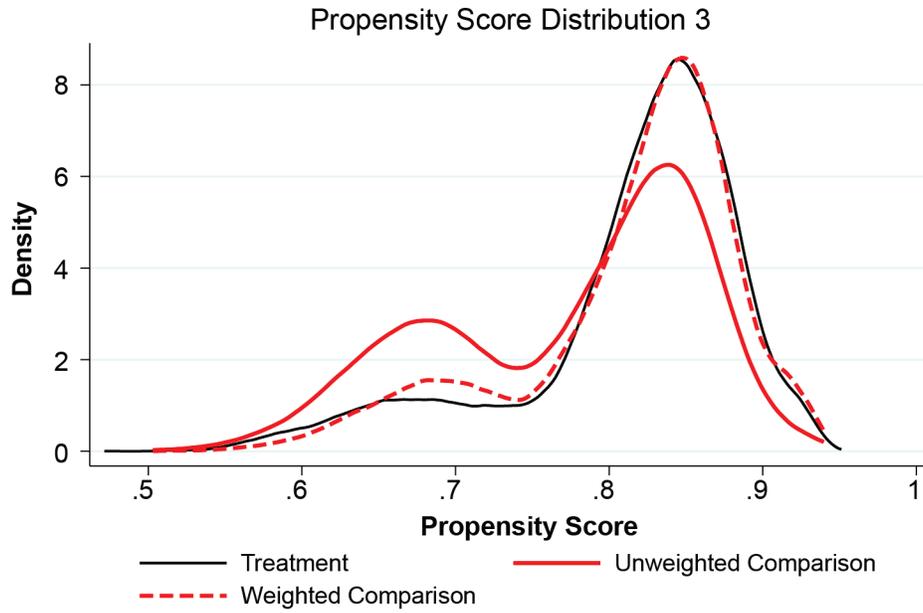
(continued)

**Exhibit J-7. Covariate Balance Between Alignment Track Intervention and Comparison Groups in the Last Baseline Year, FFS Medicare Beneficiaries (continued)**

Variable	Unweighted Mean or Percentage, Intervention Group (N=10,259)	Unweighted Mean or Percentage, Comparison Group (N=2,643)	Unweighted Standardized Difference	Weighted Mean or Percentage, Comparison Group (N=10,201)	Weighted Standardized Difference
Black	29%	21%	0.18	27%	0.04
Other race (other+Asian)	6.23%	2.85%	0.16	7%	0.02
Hispanic	7%	6%	0.05	7%	0.00
<b>County- or community-level characteristics</b>					
Percentage of people residing in a rural area	14%	22%	0.20	13%	0.03
Hospital beds per 1,000 population <sup>1</sup>	3.62	3.42	0.07	3.51	0.04
Percentage of people (under 65 years) without health insurance <sup>1</sup>	10.82	10.29	0.10	10.55	0.05
Percentage of people residing in a mental health professional shortage area	19%	36%	0.40	19%	0.00
Psychiatrists per 1,000 population <sup>1</sup>	0.15	0.12	0.21	0.13	0.17
Percentage of people 16 years and older who are unemployed <sup>1</sup>	4.58	4.68	0.08	4.52	0.05
Percentage of adults in fair/poor health <sup>1</sup>	17.17	17.10	0.02	17.12	0.01
Primary care physician-to-population ratio <sup>1</sup>	8.27	7.65	0.22	8.05	0.08
Median income <sup>1</sup>	62239.42	60465.36	0.10	62679.07	0.03
Percentage of people in poverty	14.58	14.81	0.04	14.34	0.04
Social Deprivation Index score <sup>1</sup>	56.42	53.10	0.12	55.85	0.02
Social service provider density <sup>1</sup>	147.35	130.86	0.29	134.98	0.21
Food environment index <sup>1</sup>	7.58	8.01	0.52	7.96	0.45
Severe housing index <sup>1</sup>	18.60	16.63	0.44	17.37	0.28
COVID-19 PVI <sup>1</sup>	0.19	0.12	0.36	0.13	0.30

<sup>1</sup> Not included in the propensity score model, but covariate balance between groups was examined. Definitions: COVID-19 = coronavirus disease 2019; HCC = hierarchical condition category; HRSN = health-related social need; PVI = COVID-19 Pandemic Vulnerability Index.

**Exhibit J-8. Overlay Plot for the Propensity Score in the Last Baseline Year, FFS Medicare Beneficiaries**



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