Accountable Health Communities (AHC) Model Evaluation

First Evaluation Report

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Attn: Shannon O'Connor
Contracting Officer's Representative
Email: Shannon.OConnor@cms.hhs.gov

Submitted By:
RTI International
P.O. Box 12194
Research Triangle Park, NC
27709-2194
https://www.rti.org

RTI Point of Contact:
Lucia Rojas Smith
Project Director
Telephone: (202) 728-2053
Fax: (202) 728-2095
E-mail: lucia@rti.org

RTI INTERNATIONAL

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ACCOUNTABLE HEALTH COMMUNITIES (AHC) MODEL EVALUATION
FIRST EVALUATION REPORT

Contracting Officer's Representative: Shannon O'Connor

Project Director: Lucia Rojas Smith

Associate Project Director: Susan Haber

Prepared by:

Janelle Armstrong Brown

Olivia Berzin

Megan Clayton

Laurie Cluff

Jim Derzon

Leigh Evans (Abt Associates)

Kathleen Farrell

Taressa Fraze (Social Interventions Research Network [SIREN] at the University of California San Francisco)

Susan Haber

Danielle Hessler (SIREN at the University of California San Francisco)

Caroline Husick

Echo Liu

Will Parish

Jules Payne

Jeanette Renaud

Lucia Rojas Smith

Holly Stockdale

Adam Vincent

RTI International

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Executive Summary

ES.1 Introduction

One Model, Two Interventions

The AHC Model uses two tracks to test two interventions to help Medicare and Medicaid beneficiaries with HRSNs resolve those needs:

- The Assistance Track tests universal screening to identify Medicare and Medicaid beneficiaries with HRSNs and provision of navigation assistance to connect navigation-eligible beneficiaries with the community services they need.
- The Alignment Track tests universal screening, referral, and navigation COMBINED WITH engaging key stakeholders in community-level continuous quality improvement to align community service capacity with the community's service needs.

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 can improve health outcomes and reduce costs by addressing health-related social needs (HRSNs)—adverse social conditions that affect health and health care expenditures.

The AHC Model has a 5-year period of performance beginning in May 2017 and ending in April 2022. Beneficiary screening began in summer 2018 following a pre-implementation period. 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. Bridge organizations are predominantly health systems and hospitals but also include nonprofits, health information technology providers,

academic institutions, payers, and a public health agency. The model had 29 participating bridge organizations as of August 2019—11 in the Assistance Track and 18 in the Alignment Track.[1]

Community-dwelling Medicare and Medicaid beneficiaries who live in a participating bridge organization's Geographic Target Area are eligible for navigation if they have 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 are intended to identify high-need beneficiaries who can benefit from the AHC Model. Navigation-eligible beneficiaries in the Assistance Track are randomly assigned to an intervention group or a control group. Participants in the intervention group receive their usual clinical care and a community referral summary and are offered navigation; participants in the control group receive their usual care and the community referral summary. All navigation-eligible beneficiaries in the Alignment Track are in the intervention group and are offered navigation because the community-level continuous quality improvement component of the intervention is intended to affect all beneficiaries.

The AHC Model focuses on five core HRSNs:

- Housing instability
- Food insecurity
- Transportation problems
- Utility difficulties
- Interpersonal violence

Key Takeaways and Insights

- Early results show high acceptance of navigation and some utilization reductions among the high-need population targeted by the AHC Model, but evidence at this early evaluation stage indicating that HRSNs were resolved is limited.
- Beneficiaries who qualified for the AHC Model intervention were disproportionately likely to be low income; racial and ethnic minorities; and, among Medicare beneficiaries, disabled.
- Food insecurity was the most commonly reported HRSN.
- 74% of eligible beneficiaries accepted navigation, but only 14% of those who completed a full year of navigation had any HRSNs documented as resolved.
- Medicare FFS beneficiaries in the Assistance Track intervention group had 9% fewer ED visits than those in the control group in the first year after screening.

This report describes the Medicare and Medicaid beneficiaries who were eligible for the AHC Model in the Assistance Track and the Alignment Track through December 2019, including their sociodemographic characteristics, HRSNs, participation in navigation, and navigation outcomes. For both tracks, it also documents fee-for-service (FFS) Medicare beneficiaries' health care expenditure and utilization patterns before they were screened. Model impacts for FFS Medicare beneficiaries eligible for navigation in the Assistance Track through September 2019 were assessed using Medicare claims through December 2019. In addition, the report describes bridge organizations and their CDS partners participating in the AHC Model and their experiences with screening, referral, and navigation.

[1] The Innovation Center originally funded 32 bridge organizations; 3 voluntarily terminated their participation in the AHC Model.

ES.2 Key Findings

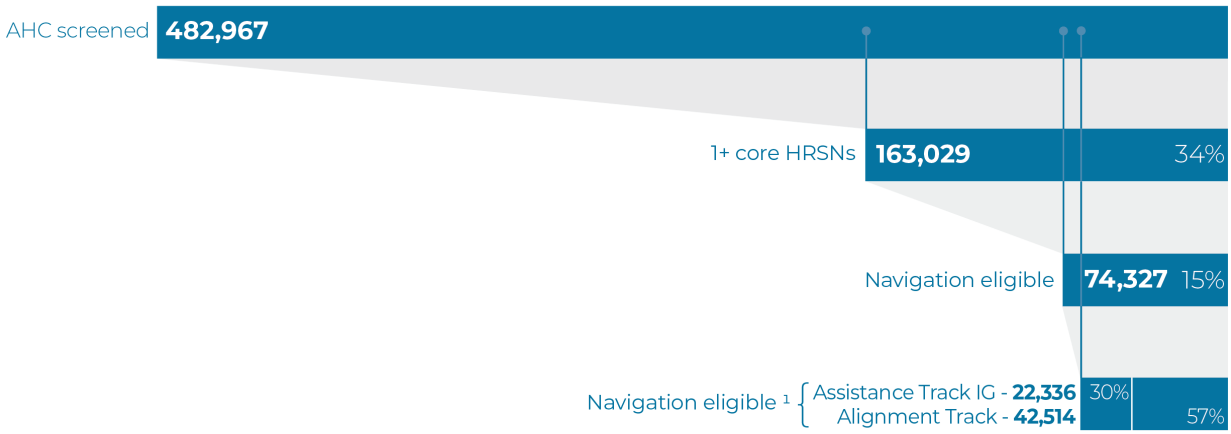
ES.2.1 Implementation of Screening, Referral, and Navigation Varied Across Bridge Organizations and Among a Bridge Organization's CDS Partners

- Many bridge organizations built on existing infrastructure for screening, referral, and navigation. Joining the AHC Model allowed them to formalize and expand the scope of screening and referral and increase their capacity for navigation.
- Bridge organizations used a mix of paid and volunteer staff to implement the AHC Model. Volunteer staff were used more commonly for screening than navigation. Centers for Medicare & Medicaid Services (CMS) funds were used typically to hire navigators.
- Staffing models differed by type of CDS. EDs commonly had staff dedicated to AHC responsibilities, while primary care CDS staff often had both AHC and non-AHC responsibilities. For example, front desk administrative staff in some primary care clinics conducted screenings.
- Screening was typically decentralized and run through CDSs, but navigation was typically managed centrally by bridge organizations.
- Bridge organizations adapted screening implementation to individual CDSs. They considered flexibility regarding the timing, location, staff responsibility, and modality of administration to be critical to gaining CDS leadership and staff buy-in.
- Screening typically was not integrated in existing clinical processes, but instead was implemented as an add-on to CDS workflow managed by new staff. Although adding new staff reduced the burden on existing CDS staff and increased their acceptance of AHC Model participation, clinicians were not always aware of screening results, either because the results were not integrated in the practice's electronic health record system or clinicians did not review the information. Some care management teams did not engage physicians in AHC screening, referrals, or navigation to avoid adding to their workload.
- Bridge organizations used varying approaches to contact beneficiaries to offer navigation services, and for those who accepted, they developed an individualized action plan and initiated navigation services. Approaches for contacting navigation-eligible beneficiaries included in-person conversations, phone, email, and text messages. Meeting the requirement to initiate navigation within 2 business days after screening was challenging after the beneficiary left the CDS. Many bridge organizations believed that embedding navigators at CDSs improved the likelihood of successful follow-up by allowing them to make initial contact with beneficiaries on the same day as screening.
- Establishing trust with beneficiaries during the initial contact was considered key to their acceptance of navigation.
- Bridge organizations viewed bidirectional communication between CSPs and CDSs to be important to AHC stakeholder engagement, integration, and HRSN resolution. Such communication provided CDS staff with details about the outcomes of their referrals and guided follow-up with beneficiaries to achieve HRSN resolution. It also kept CDS and CSP staff informed about the impacts of their efforts and motivated to engage in AHC Model implementation.

ES.2.2 Bridge Organizations Screened Many Beneficiaries to Identify the Navigation-Eligible Population

As shown in **Exhibit ES-1**, 15% of screened beneficiaries met the navigation eligibility requirements of having at least one core HRSN and self-reporting at least two ED visits in the 12 months before screening, which is consistent with CMS's expectation that most beneficiaries would not meet these criteria under universal screening.

Exhibit ES-1. Navigation Eligibility of Screened Beneficiaries



[1] The percentages represent the share of navigation-eligible beneficiaries in each track. Excludes 9,477 Assistance Track beneficiaries with one or more core HRSNs and two or more ED visits who were assigned to the control group (n=9,068) or had no group assignment (n=409). 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.

Source: AHC screening and navigation data, May 2018–December 2019.

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

- About one-third of screened beneficiaries had one or more core HRSNs, but fewer than half of these reported having two or more ED visits in the 12 months before screening.
- More than half of navigation-eligible beneficiaries were in the Alignment Track and 30% were in the Assistance Track intervention group. The remaining 13% were assigned to the Assistance Track control group.
- Less than one-quarter of the bridge organizations accounted for more than half of the total beneficiaries screened, but bridge organizations that screened fewer beneficiaries tended to have higher percentages of navigation-eligible beneficiaries.

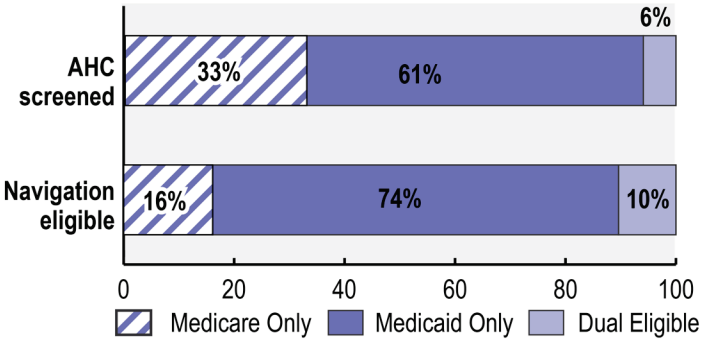
ES.2.3 Most Navigation-Eligible Beneficiaries Were Screened in Hospital Settings

- Although 40% of screenings occurred in hospital inpatient or ED settings, 61% of navigation-eligible beneficiaries were screened in these settings, indicating they were more likely to meet the navigation eligibility criteria than beneficiaries screened in other settings.
- More than half of beneficiaries (54%) were screened in primary care practices, but these screenings identified only 31% of navigation-eligible beneficiaries. Beneficiaries screened in primary care practices were less likely to meet the requirement to have two or more ED visits during the 12 months before screening, perhaps because they were less likely to need to rely on the ED for urgent or preventable care.
- Bridge organizations reported additional advantages of screening in EDs compared to primary care or clinic settings. EDs have a higher volume of nonrepeat patients, ED wait times typically allow more time to complete the screening tool, and screeners have more time to connect with patients, which may increase acceptance of navigation.

ES.2.4 The AHC Model Targeted a Vulnerable Population

- Low-income beneficiaries were more likely to meet the navigation eligibility requirements (**Exhibit ES-2**). Among navigation-eligible beneficiaries, 74% were covered by Medicaid alone, and 10% were dually eligible for Medicare and Medicaid. In comparison, 61% of screened beneficiaries were covered by Medicaid alone, and 6% were dually eligible for Medicare and Medicaid.

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



Notes: Insurance type was missing for 3% of AHC-screened and 2% of navigation-eligible beneficiaries. 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.
Source: AHC screening and navigation data, May 2018–December 2019.
Definitions: AHC = Accountable Health Communities; ED = emergency department; HRSN = health-related social need.

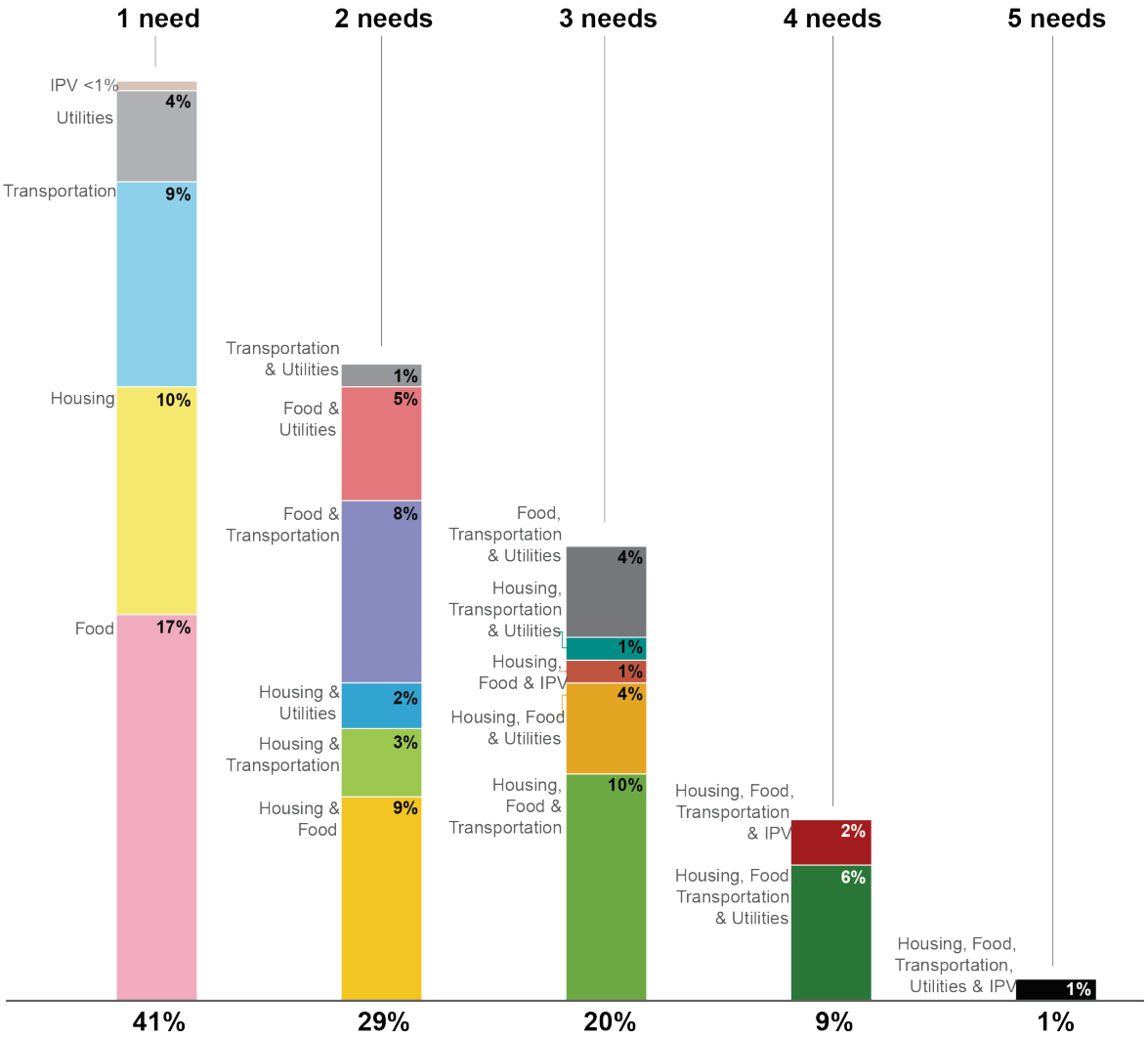
- Minorities were more likely to be eligible for navigation under the AHC Model. Only 21% of screened beneficiaries with Medicare only or dual Medicare and Medicaid coverage were racial and ethnic minorities compared to 45% of these beneficiaries who were eligible for navigation. Similarly, 59% of screened Medicaid beneficiaries were racial and ethnic minorities compared to 64% of navigation-eligible Medicaid beneficiaries.
- Almost half (49%) of navigation-eligible Medicare beneficiaries, including those with dual Medicaid coverage, were disabled individuals under age 65 years compared to 21% of those screened.

ES.2.5 Food Insecurity Was the Most Common HRSN, Reported by More Than Two-Thirds of Navigation-Eligible Beneficiaries

- Food insecurity was the most commonly reported HRSN among navigation-eligible beneficiaries in all bridge organizations except one. The prevalence of food insecurity ranged from 53% to 82% at individual bridge organizations, and the median prevalence across bridge organizations was 69%.
- The median prevalence of housing needs across bridge organizations was 50%, and the median prevalence of transportation needs was 46%.
- **Exhibit ES-3** shows that almost 60% of navigation-eligible beneficiaries reported more than one core need.
- Nearly one-third of beneficiaries reported having three or more needs, including 19% who reported all three of the most frequently reported needs—food, housing, and transportation.
- Bridge organizations reported lack of transportation as a fundamental challenge for HRSN resolution because it constrains patients' ability to access other needed services.

- Many bridge organizations offered navigation for needs beyond the core HRSNs, such as medications or childcare, because addressing these needs freed up beneficiaries' financial resources and facilitated resolution of core needs.

Exhibit ES-3. Overlap Among Core Needs for Navigation-Eligible Beneficiaries



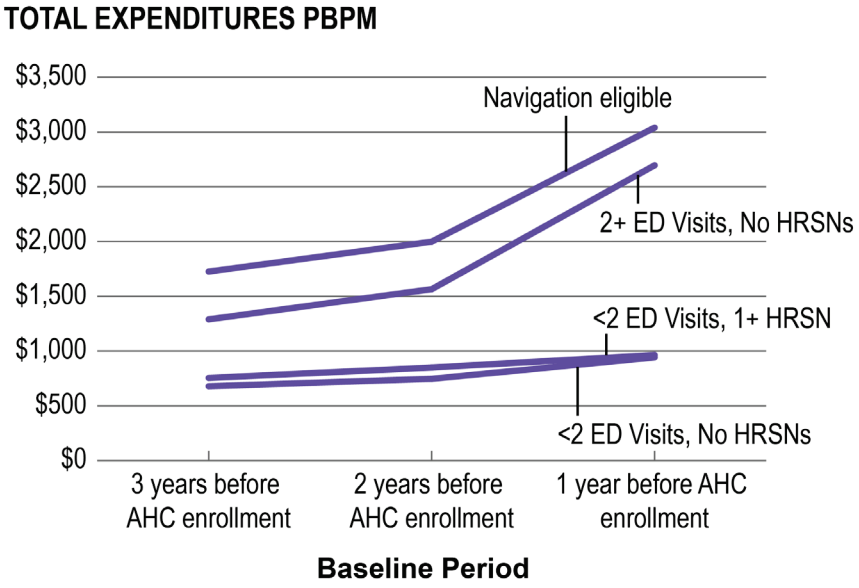
Notes: Need combinations with < 1% of beneficiaries are not shown. The total for a bar may be greater than the sum of the need combinations shown.
Source: AHC screening and navigation data, May 2018–December 2019.
Definitions: IPV = interpersonal violence.

ES.2.6 AHC Model Eligibility Criteria Directed the Intervention to Beneficiaries With the Potential for Reducing Expenditures and Utilization

- Requiring the combination of one or more HRSNs and two or more self-reported ED visits in the 12 months before screening identifies a high-cost, high-use population. Medicare FFS beneficiaries who met these AHC eligibility criteria had consistently higher total expenditures, inpatient admissions, ED visits, and unplanned readmissions than those who met only one criterion in each of the 3 years before AHC screening (**Exhibit ES-4**).

- Navigation-eligible Medicare FFS beneficiaries with more HRSNs visited the ED more often during the 3 years before screening than those with fewer HRSNs, but expenditures did not consistently increase with the number of needs. Baseline ED visits were 28% higher for beneficiaries with two HRSNs compared to those with one HRSN and 18% higher for beneficiaries with three or more HRSNs compared to those with two HRSNs.
- Expenditures and utilization increased among both screened and navigation-eligible Medicare beneficiaries in the 12 months before AHC screening occurred, probably partly because many beneficiaries were screened during inpatient admissions or ED visits.

Exhibit ES-4. Baseline Expenditures by AHC Eligibility Criteria for Medicare FFS Beneficiaries



Notes:
Sample size: The number of beneficiaries is 16,124 for navigation-eligible beneficiaries, 28,913 for beneficiaries with 2+ self-reported ED visits and no HRSNs, 16,478 for beneficiaries with <2 self-reported ED visits and 1+ HRSN, and 75,922 for beneficiaries with <2 self-reported ED visits and no HRSNs.
Averages were weighted, using each beneficiary's eligibility fraction as a weight variable. The eligibility fraction is defined as the number of months during the year the beneficiary was eligible for Medicare FFS.
Total expenditures PBPM: Total annualized Medicare FFS payments/12 months/number of unique beneficiaries.
Source: RTI analysis of Chronic Conditions Data Warehouse Medicare FFS claims, May 2015–December 2019.
Definitions: AHC = Accountable Health Communities; ED = emergency department; FFS = fee for service; HRSN = health-related social need; PBPM = per beneficiary per month.

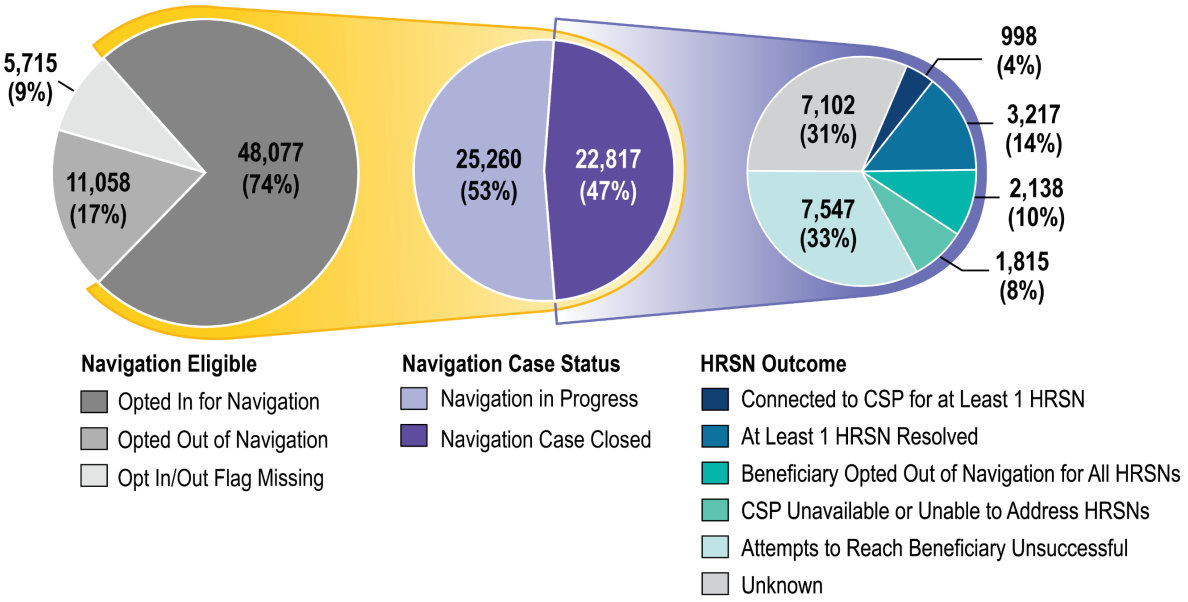
ES.2.7 Acceptance of Navigation Was High, But Early Findings Show Limited Success in Resolving HRSNs

- As displayed in **Exhibit ES-5**, 74% of navigation-eligible beneficiaries were contacted by a navigator and agreed to receive navigation, which is substantially higher than the 40% rate initially anticipated by CMS.
- Among the navigation-eligible beneficiaries who completed 12 months of navigation, 14% had at least one HRSN documented as resolved. An additional 4% had been connected with a CSP but had not resolved any HRSNs. The navigation outcome was unknown for nearly one-third of those with a navigation case closed

because the case was reported as being in progress, even though all cases should be reported as resolved or unresolved after 12 months of navigation.

- More than half of beneficiaries with a navigation case closed were documented as not connected to a CSP for any HRSNs, either because the navigator could not reach them (33%), no CSPs could be identified to meet their needs (8%), or they opted out of navigation for all their HRSNs after having accepted navigation (10%).
- Bridge organizations cited challenges contacting navigation-eligible beneficiaries following screening, both to initiate navigation and to find out if beneficiaries had connected with a CSP and whether their need was resolved.
- Navigators described insufficient community resources for referrals, especially to address housing and transportation needs. Early quality improvement activities by Alignment Track bridge organizations focused on implementing the AHC Model rather than addressing gaps in community services.
- Many bridge organizations found it difficult to keep their inventory of CSPs updated, which made effective navigation more challenging.
- Navigators found high caseloads made it difficult to provide in-depth, high-quality navigation. This challenge was compounded by the complexity of navigating the large proportion of beneficiaries with multiple HRSNs.

Exhibit ES-5. Navigation-Eligible Beneficiaries' Navigation Case Status and HRSN Resolution Among Those With a Navigation Case Closed



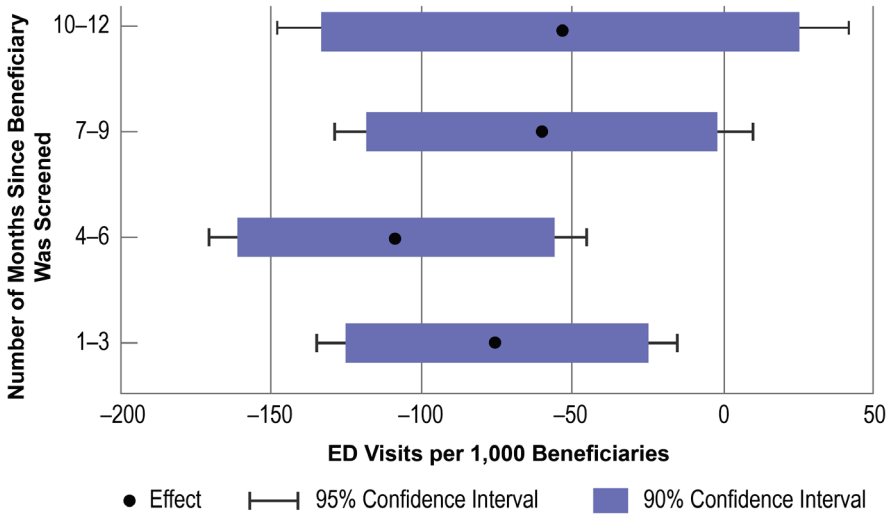
Source: AHC screening and navigation data, May 2018–December 2019.
Definitions: AHC = Accountable Health Communities; CSP = community service provider; HRSN = health-related social need.

ES.2.8 Early Findings Show the AHC Model Holds Promise for Reducing ED Use

- Assistance Track FFS Medicare beneficiaries in the intervention group had 9% fewer ED visits than their control group counterparts during the first year following screening. The Assistance Track intervention group had significantly fewer ED visits than the control group in each of the first three quarters after a beneficiary was screened under the AHC Model, but not in the fourth quarter (**Exhibit ES-6**).

- Total Medicare expenditures, overall inpatient admissions, admissions for conditions like uncontrolled diabetes or hypertension that could be avoided with appropriate ambulatory care, and primary care visits did not differ between the groups during the year following screening.
- The lack of statistical significance is partially attributable to the relatively few Medicare FFS beneficiaries exposed to the Assistance Track intervention in the first year.

Exhibit ES-6. Regression-Adjusted Difference in ED Visits During First Year After Screening for FFS Medicare Beneficiaries in the Assistance Track Intervention and Control Groups



Notes:
Sample size: The total N is 4,625 unique beneficiaries.
A weighted maximum likelihood model was used to obtain estimates of the difference in expenditures or utilization. Each beneficiary's eligibility fraction was used as a weight variable. The eligibility fraction is defined as the number of months during the year the beneficiary was eligible for Medicare FFS. Models were adjusted for person-level variables (age, gender, race/ethnicity, dual Medicare-Medicaid eligibility status, original reason for Medicare entitlement based on disability). The impacts were estimated using a Poisson specification.
Source: RTI analysis of Chronic Conditions Data Warehouse Medicare FFS claims, May 2015–December 2019.
Definitions: ED = emergency department; FFS = fee-for-service.

ES.3 Conclusions

The AHC Model is effectively identifying higher cost and utilization beneficiaries, and these beneficiaries are accepting navigation at much higher rates than anticipated. However, evidence of navigators' effectiveness in resolving HRSNs was low during the early stages of implementation. Less than one-fifth of beneficiaries completing 12 months of navigation reportedly had connected with a CSP or resolved any of their HRSNs. Some navigators and other AHC stakeholders noted that there were insufficient community resources, especially for housing and transportation, but this evidence is anecdotal and merits follow-up as these interventions mature. If there is insufficient community capacity to address beneficiary HRSNs, the model may have little effect on health care costs and utilization. If this is the case, Alignment Track activities to balance community service agencies' capacity with the community's service needs may be essential for the AHC Model to have a positive impact on health care expenditures and utilization. More complete reporting of HRSN resolution is also critical for evaluating the model's impact.

Racial and ethnic minorities are overrepresented in the navigation-eligible population. Future reports will examine the intersection of race, ethnicity, and the number and type of HRSNs and whether the model's effects on resolving HRSNs or reducing health care cost and utilization differ by race or ethnicity. Future reports also will seek to understand why bridge organizations that screened fewer beneficiaries tended to have higher percentages of navigation-eligible beneficiaries. This finding could be attributable to bridge organization characteristics or the external context of CDSs that may have important implications for scaling up the model.

Although early results show a reduction in ED visits among Medicare FFS beneficiaries, the utilization and expenditure impact estimates do not include Medicaid beneficiaries, who comprise almost three-quarters of the navigation-eligible population. As Medicaid data through 2019 become available, we will expand the impact estimates to include Assistance Track Medicaid beneficiaries. Including Medicaid beneficiaries will improve our ability to detect model impacts. Future analyses will also assess impacts on Alignment Track beneficiaries. We will continue analyzing screening, referral, and navigation data to track experience as the model matures and to better understand navigation outcomes. Future reports will also incorporate beneficiary and CSP perspectives on their experiences with the AHC Model.

1. Introduction

1.1 One Model, Two Interventions

The conditions in which people are born, grow, work, live, and age affect their health and well-being (World Health Organization, 2008). Those working in the U.S. health care sector have recognized this reality since the 19th century (Brown and Fee, 2006). More than a century later, efforts to identify these social determinants of health[2] and improve patients' social conditions to promote health and well-being, particularly for America's most impoverished communities, continue. Two factors strengthen these efforts: the national shift to value-based incentives for health care providers to promote health and a compelling body of evidence that links social and economic factors with health and costs of care. Despite the long-standing and widespread interest in health-related social needs (HRSNs), only 25% of hospitals and 16% of private practices screen for HRSNs (Buescher, Whitmire, and Pullen-Smith, 2010; Chambers et al., 2013; Cook et al., 2006; Florence et al., 2013; Gold and Gottlieb, 2019; Karliner, Perez-Stable, and Gregorich, 2017; Kushel et al., 2002; Kushel, Vittinghoff, and Haas, 2001; LaVeist, Gaskin, and Richard, 2011; Marmot, 2005; Moy et al., 2013; National Health Expenditure Accounts, 2018;

[2] The World Health Organization defines **social determinants of health** as "*the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life, including economic policies and systems, development agendas, social norms, social policies, and political systems*" (https://www.who.int/social_determinants/en/).

Rivara et al., 2007; Schoeni et al., 2008; Smedley and Syme, 2000; Williams and Jackson, 2005; Woolf and Braveman, 2011). Clinicians and policy makers alike want to know how the health care sector can best identify and address beneficiaries' HRSNs in health care delivery.[3]

In April 2017, the Center for Medicare and Medicaid Innovation (Innovation Center) launched the Accountable Health Communities (AHC) Model in 32 communities to help fill the knowledge gap. Although previous Innovation Center models indirectly addressed HRSNs, the AHC Model is the first systematic test of whether identifying and addressing core HRSNs of community-dwelling beneficiaries improve health care costs, utilization, and outcomes. The Innovation Center contracted with RTI International to conduct an evaluation of the AHC Model to assess the impact on key outcomes and the factors contributing to that impact (or lack thereof).

The AHC Model has three goals:

- 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, 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.

The AHC Model uses a universal screening tool (Centers for Medicare & Medicaid Services, n.d.) to identify the HRSNs of community-dwelling Medicare, Medicaid, and dually eligible beneficiaries. All model participants must screen all beneficiaries in a defined Geographic Target Area (GTA) for a core set of HRSNs using the standard AHC screening tool. They have the option to screen for supplemental needs such as family and social supports, education, employment and income assistance, and health behaviors. Model awards, however, cannot be used to pay for services and supports (e.g., food cards, transportation vouchers, rental assistance).

T**he AHC Model screens for five core HRSNs:**

1. Housing instability: homelessness, poor housing quality, inability to pay mortgage/rent
2. Food insecurity: difficulty paying for a sufficient quantity of food
3. Transportation problems: transportation needs beyond medical transportation
4. Utility difficulties: difficulty paying utility bills
5. Interpersonal violence/safety: intimate partner violence, elder abuse, child maltreatment

All beneficiaries in a GTA are eligible for screening. To be eligible for navigation services under the model, beneficiaries must have at least one core HRSN and have had two or more self-reported emergency department (ED) visits in the year before screening. It is anticipated that the combination of an HRSN with ED visits will provide navigation intervention to those beneficiaries most at risk for higher utilization and cost.

[3] HRSNs include income, education, employment, housing, neighborhood conditions, transportation systems, social connections, and other social factors (Solar, Irwin, and World Health Organization, 2010).

AHC Model Eligibility Criteria for Navigation

- Noninstitutionalized, community-dwelling child or adult
- Medicare or Medicaid beneficiary, including dually eligible
- One or more core HRSNs
- Two or more self-reported ED visits in the 12 months before screening

The model tests the impact of two separate interventions, each implemented in its own track, on health care utilization and costs. The Assistance Track tests universal screening to identify Medicare and Medicaid beneficiaries with HRSNs and navigation assistance to community services to address those needs. The Alignment Track tests screening, referral, and navigation *combined with* community-level continuous quality improvement (CQI) (see **Exhibit 1-1**). The CQI is a community-level intervention that targets all beneficiaries in the GTA not just those screened or navigated to services.

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

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

Definitions: AHC = Accountable Health Communities; CMS = Centers for Medicare & Medicaid Services; CQI = continuous quality improvement; HRSN = health-related social need.

1.2 Pathways to AHC Model Outcomes

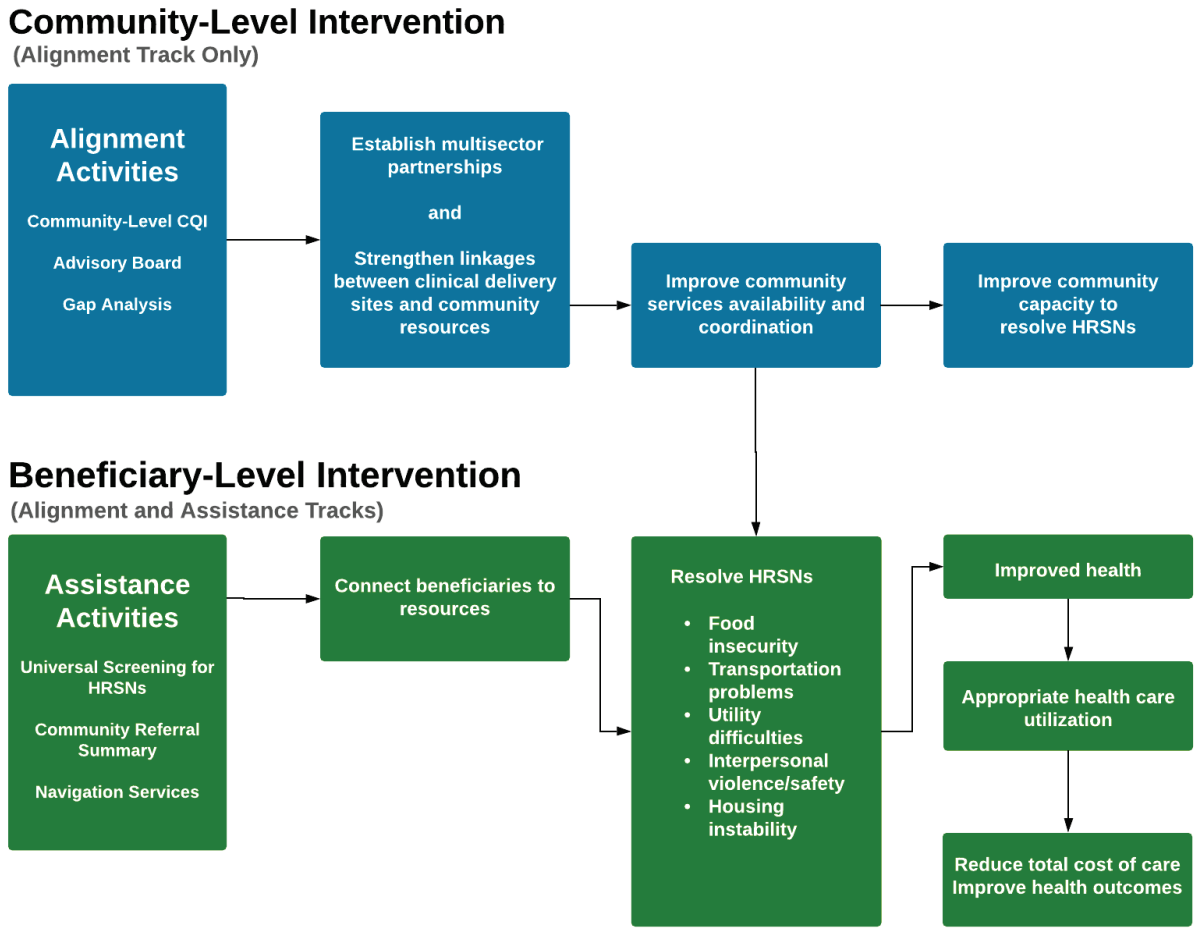
Exhibit 1-2 depicts the potential pathways through which the AHC Model may affect beneficiaries' health, health care utilization, and costs. The model tests the hypothesis that screening, referral, and navigation at the individual

beneficiary level will reduce the unnecessary health care utilization and costs associated with HRSNs. Reducing or resolving HRSNs is also hypothesized to alleviate barriers to good health, thus enabling better health outcomes and quality of life.

Connecting beneficiaries to resources may not be sufficient, however, to resolve HRSNs. Community-level changes may also be necessary to ensure the resources are available, accessible, and responsive to needs. The Alignment Track's community-level CQI is expected to increase coordination and resource planning between clinical and community services. Greater coordination and planning will accordingly improve the community's capacity to address beneficiaries' HRSNs. The model posits that combining screening, referral, and navigation with community-level interventions will yield greater impacts on health care utilization and cost than screening, referral, and navigation alone.

Exhibit 1-2. Pathways to Achieving AHC Model Outcomes

The AHC Model tests whether impacts on health care utilization and costs can be achieved by addressing beneficiary needs through screening, referral, and navigation alone (Assistance Track) or whether community-level interventions are also required (Alignment Track).



Definitions: AHC = Accountable Health Communities; CQI = continuous quality improvement; HRSN = health-related social need.

1.3 Bridge Organizations Implementing the AHC Model

The Innovation Center funded 32 bridge organizations to implement the AHC Model. Many types of organizations serve as bridge organizations, including health systems, hospitals, nonprofits, health information technology providers, academic institutions, payers, and public health agencies. The model had 29 bridge organizations as of August 2019 (see **Exhibit 1-3**), 11 in the Assistance Track and 18 in the Alignment Track. Three bridge organizations (one Assistance Track, two Alignment Track) have voluntarily terminated their participation in the model since 2017 because they were unable to meet screening, referral, and navigation milestones, which are track-specific performance expectations documented in implementation plans and monitored as a condition of receiving AHC funding. Two of these bridge organizations (Care New England and Delta Health Alliance) implemented the model for some period of time before terminating, and this evaluation includes their data.

The Innovation Center assumed each bridge organization would offer at least 281,250 screenings in the Assistance Track and 262,500 screenings in the Alignment Track to beneficiaries living in its GTA over the 5-year period of performance (2017 through 2022). Furthermore, 75% of these beneficiaries would be community dwelling and could be screened more than once. The Innovation Center assumed 13% of screened community-dwelling beneficiaries would be eligible for navigation services and, of these, 40% would consent to receive those services. Bridge organizations aligned with these initial assumptions would provide navigation services to at least 7,680 unique beneficiaries per bridge organization in the Assistance Track and 10,239 unique beneficiaries per bridge organization in the Alignment Track (see **Exhibit 1-3**).

Exhibit 1-3. Bridge Organizations Implementing the AHC Model and Their Beneficiary Population

Bridge Organization (Operating State)	Estimated Number of Beneficiaries in GTA	Organization Type
Assistance Track		
Allina Health (MN)	<100k	Health system/network
Community Health Network Foundation (IN)		
Tift County Hospital Authority (GA)		Single-site hospital
Yale New Haven Hospital (CT)		
Ballad Health (VA)	100k–199k	Health system/network
CHRISTUS Santa Rosa Health System (TX)		
Hackensack University Medical Center (NJ)		Single-site hospital
University of Texas Health Sciences Center (TX)		Academic
AMITA Health (IL)	200k–299k	Health system/network
Partners in Health (WV)		Health system/network
St. Joseph's Hospital Health Center (NY)	>300k	Health system/network

(continued)

Exhibit 1-3. Bridge Organizations Implementing the AHC Model and their Beneficiary Population (continued)

Bridge Organization (Operating State)	Estimated Number of Beneficiaries in GTA	Organization Type
Alignment Track[1]		
Parkland Center for Clinical Innovation (TX)	<100k	Independent nonprofit
Reading Hospital (PA)		Single-site hospital
Baltimore City Health Department (MD)	100k–199k	Public health agency
Health Net of West Michigan (MI)		Independent nonprofit
New York Presbyterian Hospital (NY)		Health system/network
Presbyterian Healthcare Services (NM)		
Rocky Mountain Health Plans (CO)		Payer
Camden Coalition of Healthcare Providers (NJ)	200k–299k	Independent nonprofit
Care New England (RI)[1]		Health system/network
Delta Health Alliance (MS)[1]		Independent nonprofit
Denver Regional Council of Governments (CO)		Independent nonprofit
Dignity Health (AZ)		Single-site hospital
The Health Collaborative (OH)		Health information technology
United Way of Greater Cleveland (OH)		Independent nonprofit
University of Kentucky Research Foundation (KY)		Academic
Health Quality Innovators (VA)		Consulting firm
MyHealth Access Network (OK)	>300k	Health information technology
Oregon Health & Science University (OR)		Academic
United Healthcare (HI)		Payer
Danbury Hospital (CT)	Data unavailable	Single-site hospital

[1] Care New England Health System and Delta Health Alliance voluntarily terminated participation during the initial phase of implementation. Nevada Primary Care Association, an Assistance Track bridge organization that voluntarily terminated participation before implementation, is not shown.

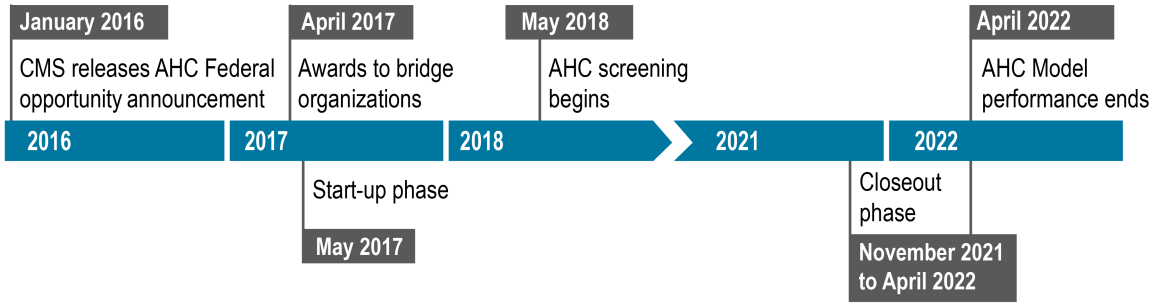
Sources: Bridge organization applications, 2016 (estimated number of beneficiaries). Organizational Survey of Bridge Organizations, 2020 (organizational type).

Definitions: AHC = Accountable Health Communities; GTA = geographic target area.

1.4 AHC Model Timeline

The Innovation Center stipulated a 5-year period of performance (2017 through 2022) for the bridge organizations, including an initial start-up phase in which bridge organizations established formal agreements with partners; developed governance structures; hired and trained staff; and developed and tested screening, referral, and navigation procedures, technologies, and workflows. During the closeout phase, bridge organizations complete navigations for open cases; submit final program data; and prepare final documents, progress reports, and sustainability plans (see **Exhibit 1-4**).

Exhibit 1-4. AHC Model Timeline



Definitions: AHC = Accountable Health Communities; CMS = Centers for Medicare & Medicaid Services.

1.5 A Collaborative, Multisector Structure

The AHC Model design requires bridge organizations to convene and coordinate with clinical delivery sites (CDSs), community service providers (CSPs), the state Medicaid agency, and other community stakeholders as shown in **Exhibit 1-5**. Alignment Track bridge organizations must also convene advisory boards to assess and prioritize community needs. The Innovation Center requires that advisory board members represent the state Medicaid agency, local government(s), all CDSs, CSPs, local health and community service payers and providers, and beneficiaries and their caregivers.

Exhibit 1-5. Organizational Structure of the AHC Model

Bridge organizations lead a consortium of CDSs, CSPs, and the state Medicaid agency to implement the AHC Model.

Definitions: AHC = Accountable Health Communities; IPV = interpersonal violence.

Each participant serves a unique role in implementing the model:

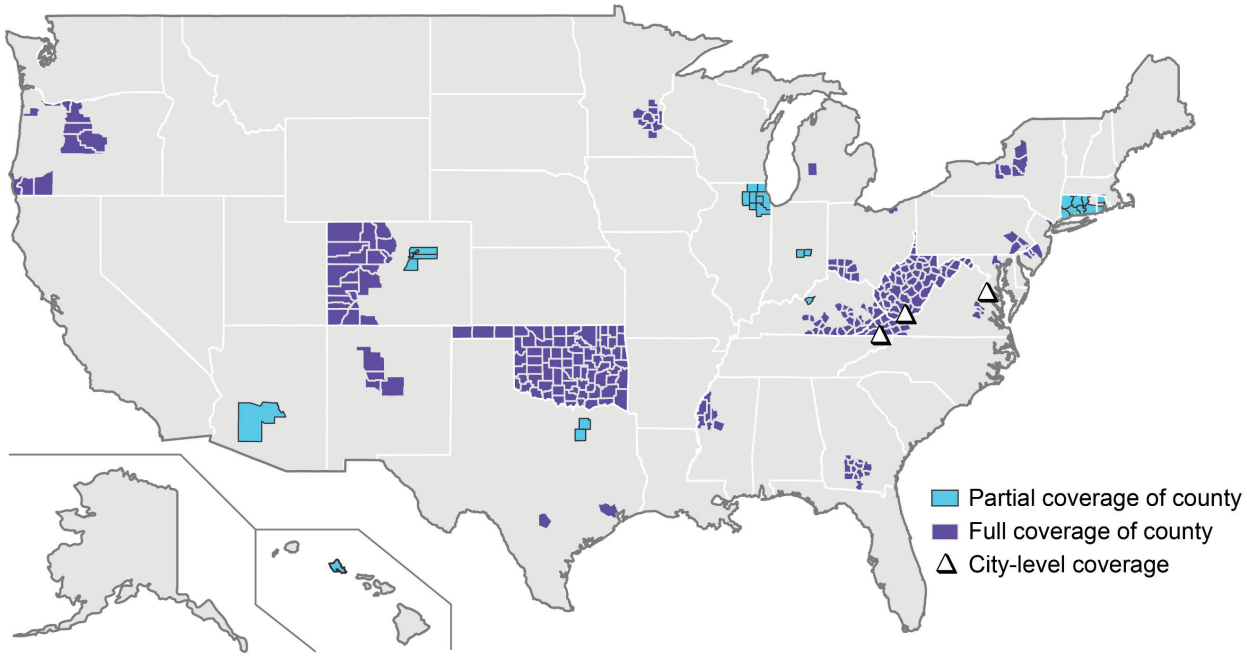
- **Bridge organizations** develop and maintain relationships with key partners (e.g., CDSs, CSPs, state Medicaid agency), facilitate adoption of the AHC screening tool, populate the CRI, establish standard operating procedures, create processes to share beneficiary data, align the AHC Model with other community initiatives, and financially manage the AHC Model award.
- **CDSs** engage beneficiaries in the AHC Model by participating in screening and issuing community referral summaries. They also assist navigation-eligible beneficiaries by connecting them with navigators who facilitate referrals to community services. Per AHC Model requirements, bridge organizations' CDS partners must 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. Bridge organizations may partner with other types of organizations such as schools, home health agencies, and rehabilitation centers.
- **CSPs** are nonprofit, for-profit, or government agencies that provide services to address HRSNs identified during the AHC screening process. CSPs commonly offer food, shelter, and transportation or help beneficiaries apply for benefits (e.g., energy assistance, nutrition assistance, housing vouchers).
- **State Medicaid agencies** provide funding for Medicaid-covered clinical services provided to Medicaid beneficiaries, supply data for monitoring and evaluating the AHC Model, champion data sharing among other partners, align AHC Model activities with state Medicaid policy and other Medicaid initiatives, and participate in the advisory boards of Alignment Track bridge organizations.

1.6 Geographic Target Areas

The AHC Model serves diverse communities across the United States, which vary by location, geography, and urbanicity, often within a single bridge organization (see **Exhibit 1-6**). Of note:

- About half of bridge organizations serve one or more contiguous counties with at least 200,000 beneficiaries in the GTA.
- Two bridge organizations serve an entire state (West Virginia and Oklahoma).
- Over two-thirds of counties in the AHC Model are majority metropolitan or an urban cluster having between 10,000 and 50,000 residents.

Exhibit 1-6. AHC Model GTAs



Source: Bridge organization applications and direct communications from the Innovation Center.
Definitions: AHC = Accountable Health Communities; GTA = Geographic Target Area.

1.7 AHC Model Evaluation

This section summarizes the evaluation goals, research questions, model design, and data sources of the AHC evaluation.

1.7.1 Evaluation Goals

The AHC Model evaluation has the following goals:

AHC Model Evaluation Goals
• To understand the impacts of the AHC Model for the overall population and for key subpopulations.   ○ Key impacts include health status; health care expenditures, utilization, access, and quality; connection to CSPs; resolution of HRSNs; and community capacity to respond to HRSNs. • To understand the community and organizational context within which the AHC Model operates. • To understand how the AHC Model was implemented. • To understand how contextual factors and model implementation are associated with any identified AHC Model impacts.

1.7.2 Research Questions

This First Evaluation Report focuses on those research questions that describe the beneficiaries' need for HRSN support; the organizational capacity of bridge organizations to carry out the model; and the early implementation progress to date, lessons, challenges, and successes. Although it is still too early to attribute changes in outcomes

to the model, this report includes baseline data on expenditures and utilization and preliminary impact estimates for the Medicare fee-for-service (FFS) population. This report does not fully address all the evaluation's research questions but serves as a foundation for future reports. The full set of research questions can be found in **Appendix A**.

The First Evaluation Report begins to address the following research questions:

Research Questions Addressed in First Evaluation Report

- **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?
- **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 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?
- **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?
- **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?
- **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?

1.7.3 AHC Model Evaluation Design

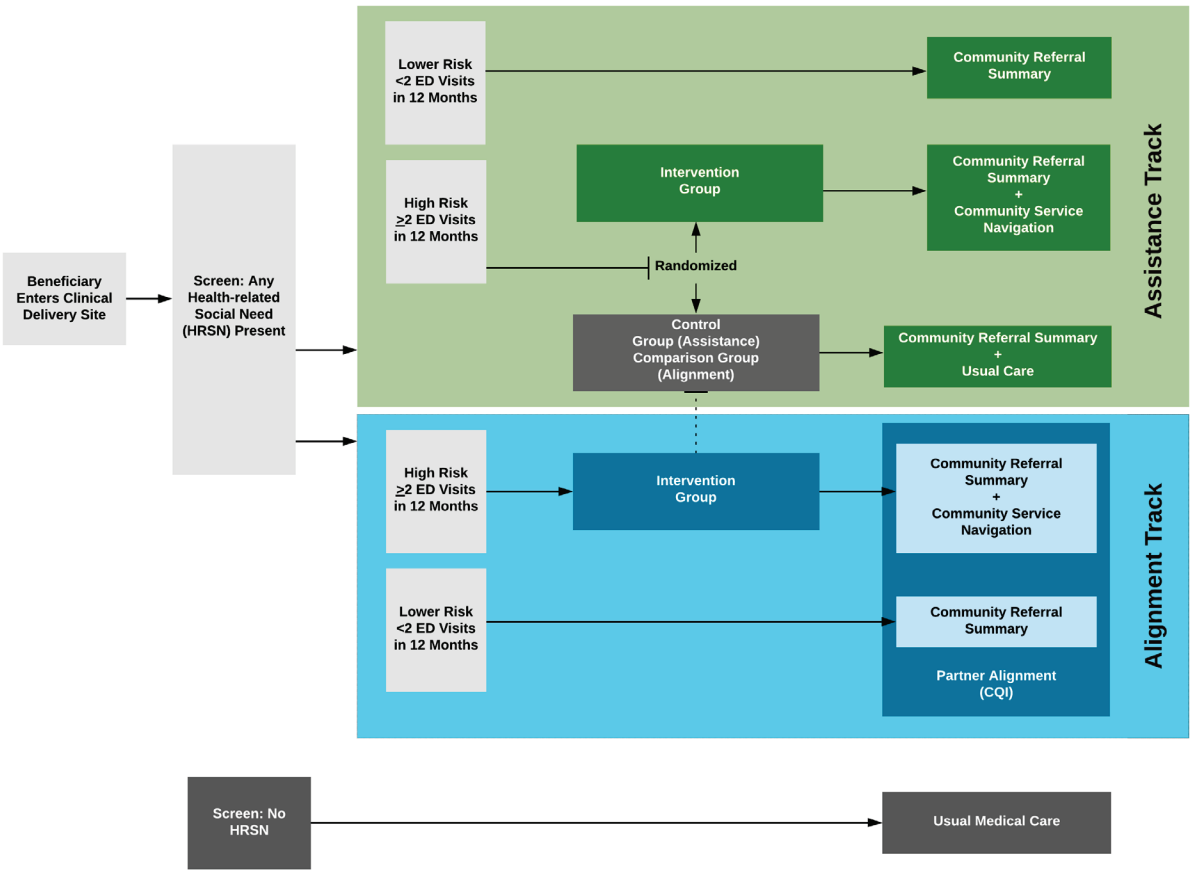
The AHC Model evaluation design (see **Exhibit 1-7**) tests whether screening, referral, and navigation alone or combined with the community-level CQI (advisory boards, gap analysis, quality improvement planning) affect total health care costs, inpatient and outpatient health care utilization, and health status.

The **Assistance Track** intervention tests screening, referral, and navigation alone. Navigation-eligible beneficiaries are randomly assigned to either the navigation intervention group or the control group. The evaluation compares quantitative outcomes between the navigation intervention group and the control group to identify the impacts of the Assistance Track intervention.

The **Alignment Track** intervention tests screening, referral, and navigation combined with community-level CQI. This track does not randomize navigation-eligible beneficiaries to a control group because community-level efforts to improve community service capacity could benefit all navigation-eligible beneficiaries in the GTA. For this reason, the evaluation must establish a comparison group drawn from outside the Alignment Track GTAs to measure the impact of screening, referral, and navigation plus community CQI. The comparison group will be drawn from the Assistance Track *control group*.

Exhibit 1-7. Overview of the AHC Model Evaluation Design

The two-track AHC Model allows the testing of two distinct interventions using both randomized and comparison-group designs.



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

1.7.4 Sources of Evaluation Data

To fully understand the context in which the AHC Model operates and assess any impacts on key outcomes, the evaluation collects data from five major sources: publicly available community data (e.g., American Community Survey, the Area Health Resources File, County Health Rankings); AHC screening, referral, and navigation data; claims data; key informant interviews; and surveys (**Exhibit 1-8**).

The primary sources of quantitative data used for this First Evaluation Report are the AHC screening, referral, and navigation data bridge organizations reported to the Innovation Center and Medicare FFS claims data. Both cover data for beneficiaries screened through December 2019. The report also presents selected survey data collected from all bridge organization leads as part of the Organizational Structure Survey fielded April to June 2020.

Qualitative data for this report come from key informant interviews conducted on-site or by phone between January and March 2020 with AHC leaders, implementing staff, and CDS participants from all 29 active bridge organizations. Key informants are individuals highly knowledgeable about and engaged in AHC implementation.

Exhibit 1-8. Data Sources Used in the First Evaluation Report

Data Source
Publicly available community data provide an early understanding of the social needs and resources to meet HRSNs in the bridge organizations' GTAs.
AHC screening, referral, and navigation data track the implementation of screening, referral, and navigation.
Claims data show baseline utilization and expenditure measures and early Assistance Track impact estimates for Medicare FFS beneficiaries.
Organizational Structure Survey data describe the structural characteristics of the bridge organizations and CDSs; screening, referral, and navigation practices; staffing models; engagement with an advisory board or other governing body; and use of CQI methods.
Interviews with key AHC stakeholders to discuss implementation planning; experiences with screening, referral, and navigation; and lessons learned to date.

Definitions: AHC = Accountable Health Communities; CDS = clinical delivery site; CQI = continuous quality improvement; FFS = fee for service; GTA = Geographic Target Area; HRSN = health-related social need.

1.8 Overview of the Remainder of the First Evaluation Report

The goal of this First Evaluation Report is to provide insights on the implementation of screening, referral, and navigation and the challenges and successes experienced since AHC Model launch. The report provides descriptive analyses of the HRSNs of the beneficiaries served by the model and the progress to date in helping them resolve those needs. An initial impact analysis covering the first year after screening provides an early view of the effect of the model on key outcomes. The remainder of the report includes the following:

- **Chapter 2** presents the social needs of AHC-screened beneficiaries, AHC-eligible beneficiaries, the bridge organizations' client populations, and the general populations of the bridge organizations' GTAs.
- **Chapter 3** describes the processes, workflows, workforce capacity, and other resources involved in screening, referral, and navigation and the successes and challenges encountered during implementation.

- **Chapter 4** presents the progress to date in connecting navigation-eligible beneficiaries to community services and resolving their HRSNs.
- **Chapter 5** presents claims-based *baseline* data for Medicare FFS beneficiaries in both tracks. It also presents initial estimates of impact on health care use and expenditures for Medicare FFS beneficiaries in the Assistance Track.
- **Chapter 6** offers conclusions about the progress to date and impacts identified in the AHC Model's first 18 months of performance.

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2. Social Needs of Beneficiaries in the AHC Model

This chapter uses AHC screening, referral, and navigation data; Medicare enrollment data; and publicly available data on the bridge organizations' AHC Model GTAs to examine characteristics and HRSNs among the beneficiaries and wider communities served by the AHC Model. Understanding the persons and places the AHC bridge organizations serve is important to ensure that the AHC Model eligibility criteria successfully identify a high-risk beneficiary population and the nature of their HRSNs.

Bridge organizations serve communities that vary widely in sociodemographic characteristics, reported health status, insurance, 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 discusses the use of publicly available community data and AHC screening, referral, and navigation data to examine characteristics and the extent of HRSNs among beneficiaries and the communities the AHC Model serves. Interviews with AHC leaders provided additional context describing experiences to date addressing specific needs.

Key Takeaways and Insights

- AHC-screened and navigation-eligible beneficiaries were primarily racial and ethnic minorities and adults younger than 65 years of age, which reflects the large proportion of Medicaid beneficiaries in the populations served by bridge organizations' CDS partners.
- Of the five core HRSNs, food needs were most commonly reported.
- Food and housing needs were higher among AHC-screened beneficiaries relative to community averages, suggesting that universal screening may identify HRSNs that would otherwise remain undetected.
- Nearly three-fifths of navigation-eligible beneficiaries reported multiple needs.

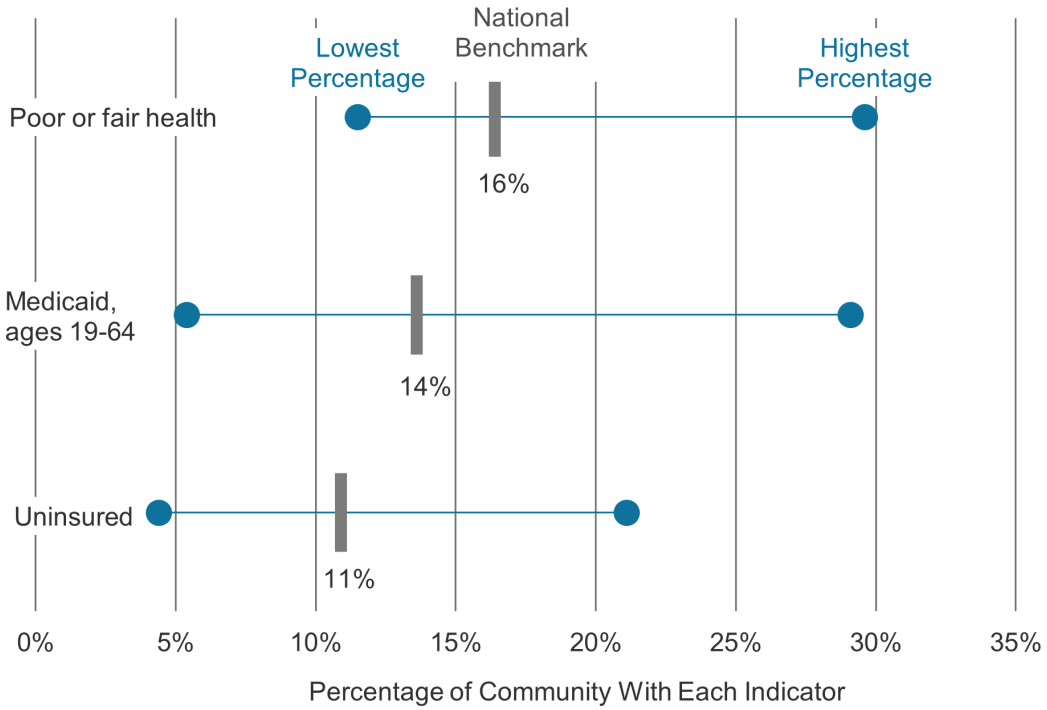
2.1 Health-Related Indicators Revealed Wide Variation in Community Context

To understand the context in which the AHC Model is implemented, we examined the distribution of key health-related indicators across the bridge organization communities and compared them to a national average benchmark. Measures of health status and health insurance coverage showed bridge organizations operated in a broad range of community contexts.

Self-reported fair or poor health ranged from about 11% to 30% in counties that bridge organizations serve (**Exhibit 2-1**). The overall mean percentage of those reporting poor or fair health in these communities was similar to the national mean (16.7% and 16.3%, respectively). Communities that bridge organizations serve also varied greatly in the percentage of the population that was uninsured, as well as the percentage of nonelderly adults (those between 19 and 64 years of age) receiving Medicaid (United States Census Bureau, 2019; United States Census Bureau, n.d.). The Affordable Care Act gave states the option to expand Medicaid coverage by increasing the income limit for program eligibility. This increased coverage would not only expand the number of insured individuals, but also increase those potentially eligible for the AHC Model. Twenty-four bridge organizations (77%) operated in states that offered expanded Medicaid coverage, while seven (22%) were in states that have not. Uninsured populations in bridge organization communities ranged from less than 5% to over 20%, and those covered by Medicaid ranged from 5% to over 30%.

Exhibit 2-1. Range of Health Care Indicators in Communities Served by Bridge Organizations

AHC communities vary widely on key health indicators.



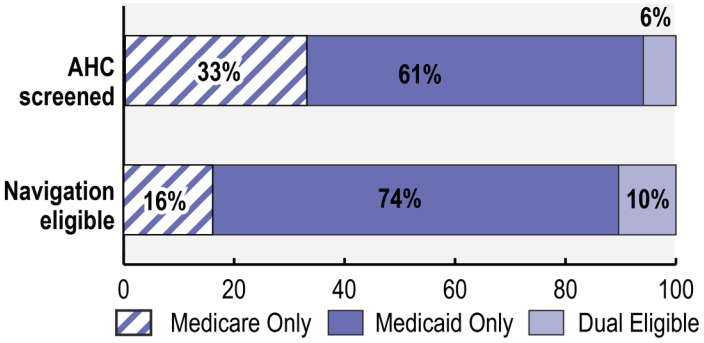
Source: County Health Rankings & Roadmaps. 2019 county health rankings. Key findings report. 2019. Available from https://www.countyhealthrankings.org.
Definitions: AHC = Accountable Health Communities.

2.2 The AHC Model Reached Vulnerable Populations

Bridge organizations serve communities in defined GTAs that vary in the percentage of nonelderly adults (those between 19 and 64 years of age) receiving Medicaid from 5% to more than 30% (Agency for Healthcare Research and Quality, 2014; United States Census Bureau, 2019; United States Census Bureau, n.d.). In contrast, 61% of AHC-screened beneficiaries (both those who were eligible for navigation and those who were not) were eligible for Medicaid only (**Exhibit 2-2**). That 84% of navigation-eligible beneficiaries were covered by Medicaid only or dually eligible for Medicare and Medicaid, compared to 67% of AHC-screened beneficiaries, indicates that low-income beneficiaries were disproportionately likely to meet AHC eligibility criteria.

Exhibit 2-2. AHC-Screened and Navigation-Eligible Beneficiaries by Insurance Type

The majority of AHC beneficiaries are Medicaid-only enrollees.



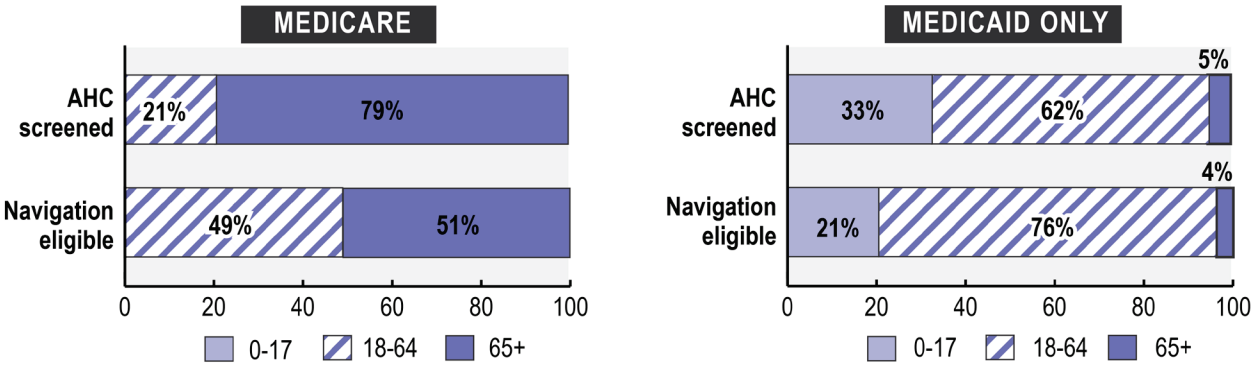
Notes:
Insurance type was missing for 3% of AHC-screened and 2% of navigation-eligible beneficiaries.
Navigation-eligible beneficiaries are community-dwelling beneficiaries with one or more core HRSNs and two or more ED visits in the 12 months before screening.
Source: AHC screening and navigation data, May 2018–December 2019.
Definitions: AHC = Accountable Health Communities.

As the next three exhibits show, differences in characteristics (age, race/ethnicity, and education) between AHC-screened and navigation-eligible beneficiaries indicate that navigation-eligible Medicare beneficiaries (including dually eligible beneficiaries) came from more vulnerable populations than the AHC-screened Medicare population. Differences between screened and navigation-eligible Medicaid populations were more modest because Medicaid specifically targets vulnerable populations.

Fewer than one-quarter of AHC-screened beneficiaries were younger than 65 years of age and qualified for Medicare based on disability, in contrast to almost half of navigation-eligible beneficiaries (**Exhibit 2-3**). Age differences between the AHC-screened and navigation-eligible Medicaid population were less pronounced. Both AHC-screened and navigation-eligible Medicaid beneficiaries were predominantly adults between 18 and 64 years of age: 13% of those navigation-eligible beneficiaries were between 18 and 24 years of age, 47% were between 25 and 44 years of age, and 40% were between 45 and 64 years of age. Relative to all AHC-screened beneficiaries, children younger than 18 years of age were less likely than adults to be eligible for navigation.

Exhibit 2-3. Age at Screening Among AHC-Screened and Navigation-Eligible Beneficiaries by Insurance Type

Among Medicare beneficiaries, those who qualify through disability (i.e., younger than 65 years of age) were more likely than beneficiaries who qualify by age to be eligible for AHC. Among Medicaid beneficiaries, adults were more likely than children to be eligible for navigation.

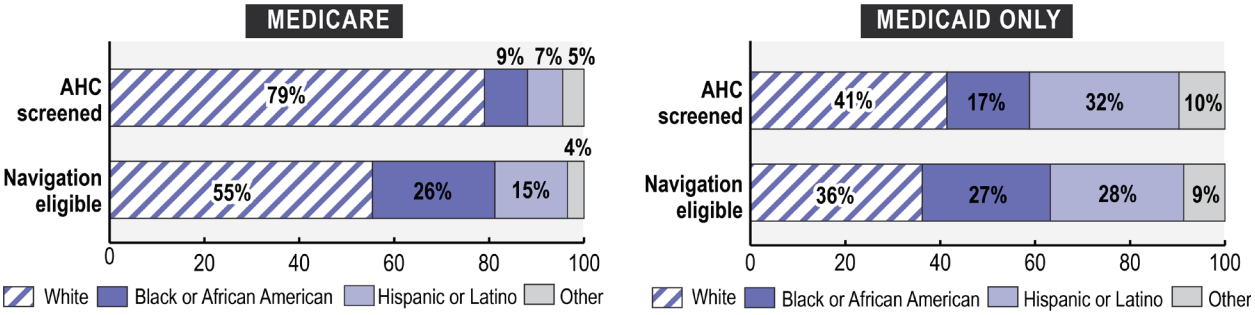


Notes: Medicare includes dually eligible beneficiaries. Medicaid beneficiaries identified as 65 years of age or older may be due to reporting error. Navigation-eligible beneficiaries are community-dwelling beneficiaries with one or more core HRSNs and two or more ED visits in the 12 months before screening.
Source: AHC screening and navigation data, May 2018–December 2019.
Definitions: AHC = Accountable Health Communities; ED = emergency department; HRSN = health-related social need.

The greater vulnerability of navigation-eligible beneficiaries is further confirmed by racial/ethnic differences between AHC-screened and navigation-eligible beneficiaries (**Exhibit 2-4)**. Once again, the difference is more pronounced among Medicare than among Medicaid beneficiaries. For Medicare beneficiaries, less than one-quarter of those screened were racial and ethnic minorities compared to nearly one-half of navigation-eligible beneficiaries. For Medicaid beneficiaries, nearly 60% of those screened were racial and ethnic minorities compared to 64% of those who were eligible for navigation. Among AHC-screened and navigation-eligible beneficiaries, 10% or less were categorized as "other" race/ethnicity, which includes American Indian/Alaska Native, Asian, Hawaiian or Other Pacific Islander, and those who identify as multiple races.

Exhibit 2-4. Race/Ethnicity Among AHC-Screened and Navigation-Eligible Beneficiaries by Insurance

Compared to AHC-screened beneficiaries, both Medicare and Medicaid-only navigation-eligible beneficiaries were more likely to be minorities.



Notes: Medicare includes dually eligible beneficiaries. Race/ethnicity was missing for 1% of AHC-screened and 1% of navigation-eligible beneficiaries with Medicare and for 15% of AHC-screened and 14% of navigation-eligible beneficiaries with Medicaid. "Other" includes American Indian/Alaska Native, Asian, Hawaiian or Other Pacific Islander and those who identify as multiple races. 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.

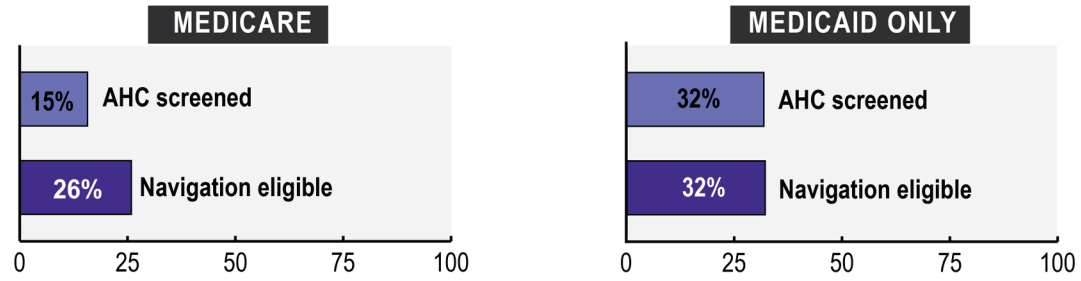
Source: AHC screening and navigation data, May 2018–December 2019.

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

Education is a third characteristic that highlights the greater vulnerability of navigation-eligible beneficiaries compared to AHC-screened beneficiaries (**Exhibit 2-5**), although only for Medicare beneficiaries. For Medicare beneficiaries, about 15% of AHC-screened beneficiaries had less than a high school education compared to one-quarter of navigation-eligible beneficiaries. For Medicaid beneficiaries, the share with less than a high school education (about one-third) was the same for both AHC-screened and navigation-eligible beneficiaries.

Exhibit 2-5. AHC-Screened and Navigation-Eligible Beneficiaries With Less Than a High School Degree or Equivalent by Insurance Type

Navigation-eligible 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.



Notes: Medicare includes dually eligible beneficiaries. Education was missing for 23% of AHC-screened and 25% of navigation-eligible beneficiaries with Medicare and for 22% of AHC-screened and 21% of navigation-eligible beneficiaries with Medicaid. 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.

Source: AHC screening and navigation data, May 2018–December 2019

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

2.3 Beneficiaries Had Multiple Needs But a Few Needs Predominated

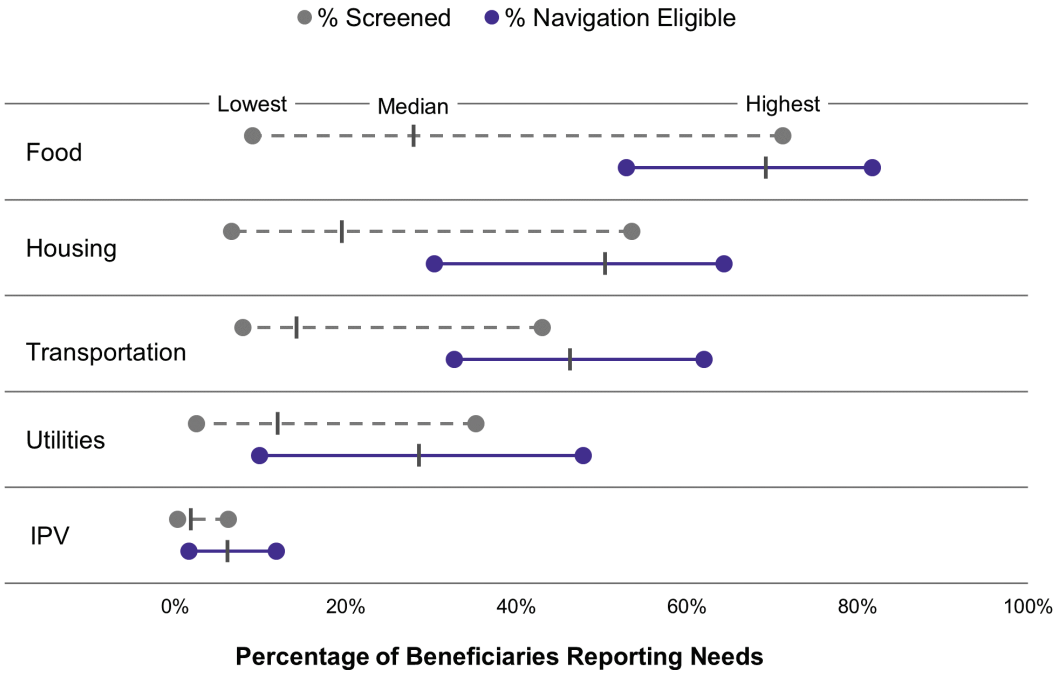
The AHC eligibility criteria are intended to ensure model resources are provided to beneficiaries with HRSNs that may be associated with increased health care utilization. The AHC screening tool is used to screen Medicare and Medicaid beneficiaries to identify their HRSNs and determine eligibility for model navigation.

2.3.1 Food Insecurity and Housing Were the Most Prevalent HRSNs

Exhibit 2-6 shows the prevalence of HRSNs among screened and navigation-eligible beneficiaries across bridge organizations. Comparing the prevalence of the five core HRSNs among AHC-screened beneficiaries to core HRSN prevalence among navigation-eligible beneficiaries enables us to learn more about the subset of high-risk beneficiaries the AHC Model targets for assistance. As the exhibit indicates, the prevalence of each need among AHC-screened beneficiaries varied across bridge organizations, often considerably. The prevalence of each need typically varied less across bridge organizations among navigation-eligible beneficiaries than among screened beneficiaries (the exceptions were utility difficulties and interpersonal violence/safety needs, which varied more across bridge organizations in the navigation-eligible population than in the screened population). As expected, needs were more prevalent among navigation-eligible beneficiaries, who were required to have at least one core HRSN, than among the overall screened population.

Exhibit 2-6. Range of Core Needs Among AHC-Screened and Navigation-Eligible Beneficiaries

Up to 82% of navigation-eligible beneficiaries reported being food insecure across all bridge organizations. At the other end of the range, fewer than 13% reported interpersonal violence.



Notes: Eligible are community-dwelling beneficiaries with one or more core HRSNs and two or more ED visits in the 12 months before screening.
Source: AHC screening and navigation data, May 2018–December 2019.
Definitions: AHC = Accountable Health Communities; ED = emergency department; HRSN = health-related social need; IPV = interpersonal violence.

Food insecurity (defined as sometimes or often worried that food would run out before had money to buy more or food bought did not last and did not have money to get more) was the most common HRSN that both AHC-screened and navigation-eligible beneficiaries reported. Among navigation-eligible beneficiaries, food insecurity was the most commonly reported HRSN for all bridge organizations, except one in which housing was most commonly reported. The median prevalence of food insecurity among navigation-eligible beneficiaries was 69% across all AHC bridge organizations, indicating 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) in order of prevalence. Across bridge organizations, housing and transportation showed similar prevalence for both the AHC-screened and navigation-eligible populations. Although the data indicate fewer utility difficulties, the prevalence of this need was more similar between the AHC-screened and navigation-eligible populations than for other core HRSNs.

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 was only 6% across all bridge organizations. The low reported prevalence may be because beneficiaries were uncomfortable reporting such events, so they chose to skip those questions. Among navigation-eligible beneficiaries, approximately 11% did not complete the interpersonal violence items—more than the 6% to 8% who did not complete the items related to any of the other four HRSNs. We also learned during the site visits a number of other possible reasons for the low response to interpersonal violence questions. Screeners may themselves feel uncomfortable asking the interpersonal violence questions, either because they realize the questions are sensitive or they hesitate to ask these questions when other people are with the beneficiary at the time of screening. For instance, one bridge organization representative noted, "… we've had situations where the abuser was there with them while they were trying to fill out the survey." Another possibility is that the interpersonal violence items are the last core HRSN items in the screening tool (most bridge organizations do not screen for supplemental needs) before the demographic items, which are also missing for many screened beneficiaries. More specifically, among those missing the interpersonal violence items, 52% were also missing gender, 56% were missing race/ethnicity, 64% were missing education, and 75% were missing income. Beneficiaries may tire or the screening may be interrupted when beneficiaries are called to receive usual care; thus, they never get to those questions in the first place.

By definition, navigation-eligible beneficiaries must have at least one core HRSN. Therefore, not surprisingly, navigation-eligible beneficiaries reported a higher percentage of HRSNs than AHC-screened beneficiaries across all five core HRSNs. The largest relative difference in needs reported by AHC-screened beneficiaries compared to navigation-eligible beneficiaries was for transportation, which has a median percentage for navigation-eligible beneficiaries that is outside the range for those screened. This disparity indicates that beneficiaries with transportation needs were more likely than beneficiaries with other HRSNs to meet the high ED use eligibility requirement. The association between transportation needs and ED use suggests transportation could be an important area for AHC navigation to address. Beneficiaries who lack reliable transportation may have greater challenges getting to regular medical appointments and, therefore, rely more on the ED for their health care.

2.3.2 Beneficiary-Reported Food Insecurity and Housing Needs Were Greater Than Rates in AHC GTAs

County Health Rankings contain information about the prevalence of food insecurity[4] and housing needs[5] in the general population of each county. We used this information to compare the prevalence of food and housing needs among the general population in the counties included in each bridge organization's GTA to the prevalence among AHC-screened and navigation-eligible beneficiaries based on needs reported on the AHC screening tool. The comparison indicates that the prevalence of HRSNs among the Medicare and Medicaid beneficiaries screened by the bridge organizations was greater than the county data show. This difference may be because some bridge organizations have targeted high-need beneficiaries by partnering with CDSs that serve a lower-income segment of the population.[6] Higher rates are to be expected among navigation-eligible beneficiaries, who are required to have at least one core HRSN. A limitation of these analyses is that county-level population data may not exactly match a bridge organization's GTA. Although most bridge organizations' GTAs span several full counties (see **Section 1.6**), some include partial counties. For these bridge organizations, the full county rates may not accurately reflect the GTAs.

Food Insecurity. County Health Rankings and the AHC screening tool use analogous measures to identify food insecurity. In nearly all the bridge organization communities, the prevalence of food insecurity among AHC-screened beneficiaries was higher than the prevalence among the general population based on county data; for several bridge organizations, the prevalence of food insecurity was more than twice as high. The percentage of navigation-eligible beneficiaries with food insecurity ranged from 53% to 82% compared to much lower rates (11% to 19%) in their respective GTAs (**Exhibit 2-7**).

Housing Needs. Although housing needs are measured differently in the County Health Rankings and the AHC screening tool,[7] in approximately half of the bridge organization communities the prevalence of housing needs among AHC-screened beneficiaries was higher than the prevalence of housing needs reported in the general GTA population (**Exhibit 2-8**). Among navigation-eligible beneficiaries, however, the prevalence of housing needs was always higher (12% to 45% higher) than the prevalence in the respective bridge organization GTA general population. Between 30% and 64% of navigation-eligible beneficiaries at bridge organizations reported a housing need in contrast to the highest GTA prevalence of 27%. The consistently higher rate among navigation-eligible beneficiaries indicates a substantial need for housing among this subset of higher risk beneficiaries—a link between housing needs and ED use that has been observed in other studies.

[4] The 2019 County Health Rankings used 2016 data for food insecurity defined as the percentage of the population who did not have access to a reliable source of food during the past year. Bridge organization measures were created based on the counties in the bridge organization service areas (County Health Rankings & Roadmaps. 2019).

[5] Severe housing problems are defined as the percentage of households with one or more of the following housing problems: (1) housing unit lacks complete kitchen facilities, (2) housing unit lacks complete plumbing facilities, (3) household is overcrowded, or (4) household is severely cost burdened. The 2019 County Health Rankings used 2011–2015 data for this measure.

[6] **Section 2.2** reported that 61% of AHC-screened beneficiaries and 84% of navigation-eligible beneficiaries are Medicaid enrollees compared to between 5% and 30% of those in the GTA general populations.

[7] The AHC screening tool uses two items to assess whether beneficiaries have an HRSN related to housing stability or housing quality: (1) What is your living situation today? (do not have housing; staying with others, in a hotel, in a shelter, living outside on the street, on a beach, in a car, abandoned building, bus or train station, or in a park; have housing but worried about losing; have housing; (2) Think about the place you live. Do you have problems with any of the following (pests, mold, lead paint/pipes, lack of heat, oven not working, smoke detectors missing/not working, water leaks)? The tool does not capture overcrowding or cost burden, as does the County Health Rankings.

Exhibit 2-7. Food Insecurity Among AHC-Screened and Navigation-Eligible Beneficiaries Compared to the General Population in Bridge Organization GTAs

Both AHC-screened and navigation-eligible beneficiaries identified food insecurity at much higher rates than rates in the bridge organization GTA general populations.

	Percentage of:		
Bridge ID	Bridge GTA Population with Food Insecurity	AHC-Screened Beneficiaries with a Food Need	Navigation-Eligible Beneficiaries[1] with a Food Need
B15	32	49	77
B26	23	53	76
B05	19	71	82
B27	18	24	61
B02	18	53	81
B19	17	20	75
B13	17	13	60
B04	17	51	75
B17	16	27	74
B23	15	39	76
B28	15	37	71
B22	15	37	76
B30	15	28	78
B31	15	9	64
B18	14	31	65
B08	13	15	64
B14	13	44	70
B03	13	16	67
B21	13	34	60
B11	13	30	76
B32	12	14	66
B29	12	45	78
B20	11	34	69
B10	11	23	67
B12	11	10	53
B07	11	26	65
B06	11	13	66
B16	10	44	74
B25	10	15	69
B24	9	16	58
B01	8	16	56

[1] Community-dwelling Medicare and Medicaid beneficiaries with one or more core HRSNs, including a food need, and two or more ED visits in the 12 months before screening. GTA data represent county-level averages for the general population in the entire bridge organization model service area and are not limited to Medicare and Medicaid beneficiaries.

Notes: Assistance Track bridge organization IDs are in bold.

Sources: AHC screening and navigation data, May 2018–December 2019 and County Health Rankings (compiled from the U.S. Department of Agriculture Food Environment Atlas).

Definitions: AHC = Accountable Health Communities; ED = emergency department; GTA = Geographic Target Area; HRSN = health-related social need; ID = identifier.

Exhibit 2-8. Housing Needs Among AHC-Screened and Navigation-Eligible Beneficiaries Compared to the General Population in Bridge Organization GTAs

Navigation-eligible beneficiaries reported housing needs at a much higher rate than the general population reported "severe housing problems" in bridge organization GTAs.

	Percentage of:		
Bridge ID	Bridge GTA Population Reporting Severe Housing Problems	AHC-Screened Beneficiaries with a Housing Need	Navigation-Eligible Beneficiaries[1] with a Housing Need
B32	27	11	58
B18	25	27	59
B26	24	36	54
B01	23	10	35
B30	22	20	50
B14	21	36	52
B15	21	33	55
B06	21	8	41
B04	21	38	58
B21	20	31	63
B02	20	27	42
B20	19	26	58
B05	19	54	64
B23	19	28	60
B22	19	22	54
B12	19	7	38
B11	19	20	51
B27	18	19	49
B07	18	18	46
B10	17	12	45
B13	17	7	30
B24	16	12	44
B28	15	30	55
B29	15	27	53
B03	15	12	49
B25	15	12	41
B19	15	11	45
B16	14	34	57
B17	14	18	46
B08	12	11	48
B31	11	7	47

[1] Community-dwelling Medicare and Medicaid beneficiaries with one or more core HRSNs, including a food need, and two or more ED visits in the 12 months before screening. GTA data represent county-level averages for the general population in the entire bridge organization model service area and are not limited to Medicare and Medicaid beneficiaries.

Notes: Assistance Track bridge organization IDs are in bold.

Sources: AHC screening and navigation data, May 2018–December 2019 and County Health Rankings (compiled from Comprehensive Housing Affordability Strategy data).

Definitions: AHC = Accountable Health Communities; ED = emergency department; GTA = geographic target area; HRSN = health-related social need; ID = identifier.

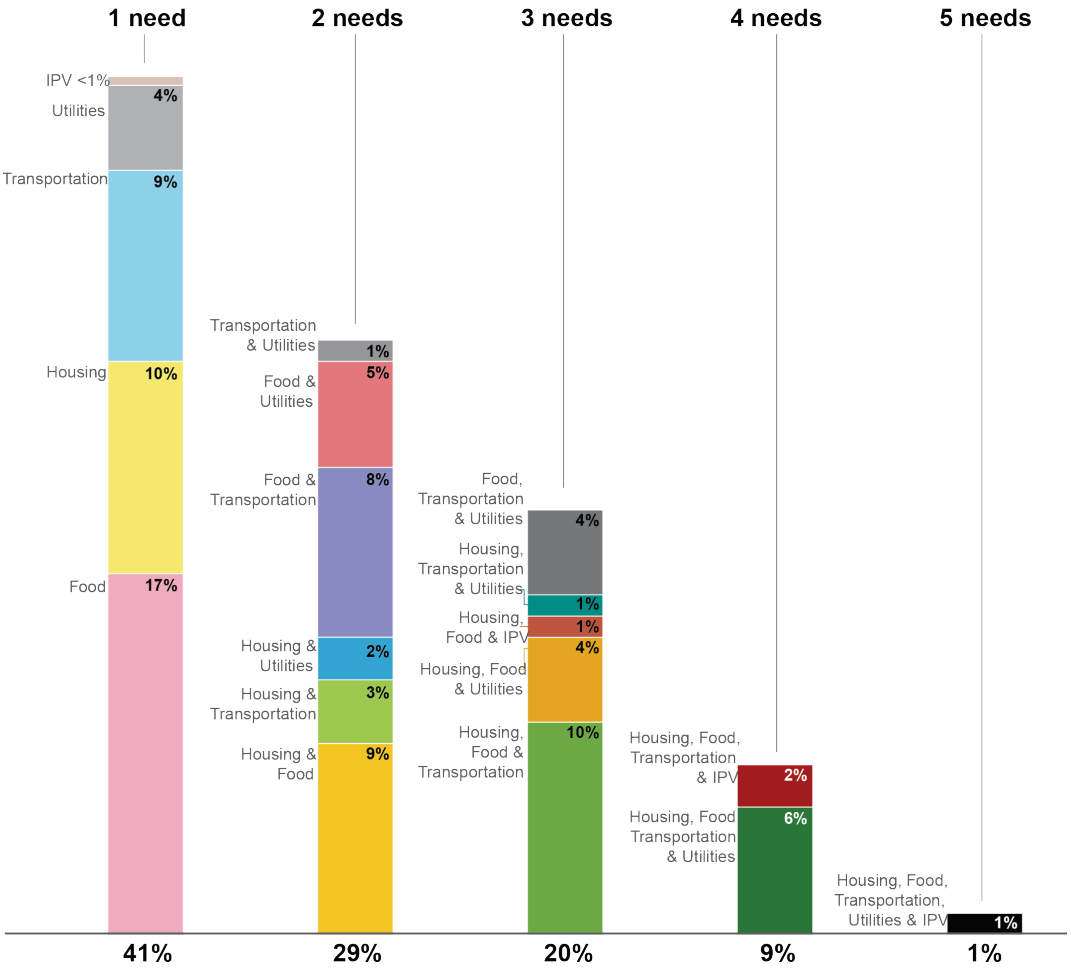
2.3.3 More Than Half of Navigation-Eligible Beneficiaries Had Multiple HRSNs

In addition to assessing the types of HRSNs reported by beneficiaries, we assessed the number of HRSNs and the overlap among those HRSNs. Other research has found 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, Siegel, and Bauman, 2010). If health effects are compounded by having multiple risk factors, beneficiaries with multiple HRSNs may have the greatest potential to benefit from effective navigation and show the greatest reduction in costs and utilization from participating in the AHC Model.

As noted previously, food, housing, transportation, and utilities were the most frequently reported core HRSNs among both AHC-screened and navigation-eligible beneficiaries. **Exhibit 2-9** shows the percentage of navigation-eligible beneficiaries with one, two, three, four, or all five core needs. As shown, 41% of navigation-eligible beneficiaries had only one HRSN, while 59% reported more than one HRSN—29% reported two HRSNs, 20% reported three HRSNs, 9% reported four HRSNs, and 1% reported all five HRSNs. Fully 19% of navigation-eligible beneficiaries reported food, housing, and transportation needs, the three most frequently reported needs.

Exhibit 2-9. Overlap Among Core Needs for Navigation-Eligible Beneficiaries

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



Notes: Need combinations with < 1% of beneficiaries are not shown. The total for a bar may be greater than the sum of the need combinations shown.

Source: AHC screening and navigation data, May 2018–December 2019.

Definitions: IPV = interpersonal violence.

Providing navigation to beneficiaries with multiple needs is more challenging than providing navigation to beneficiaries with one need. As one bridge organization staff member noted, "It can be overwhelming when you have so much to do with each of them … It's one of those things where it's challenging, it's hard work, but they [navigators] do a good job at it." Having multiple needs can also be overwhelming to the beneficiary. During the site visit interviews, one navigator reported a strategy of providing assurance to the beneficiary that navigation will be provided over time so they do not need to work on everything at once: "I remind them again that we have 12 months to work with you."

2.4 Conclusions

The AHC Model has been successful at identifying vulnerable populations within the broader communities served by the bridge organizations. Lower income beneficiaries who are racial and ethnic minorities and have less than a high school degree or equivalent were more likely to report HRSNs and two or more ED visits in the 12 months before screening. Food and housing were the most prevalent needs among this population. Although less prevalent, those with transportation needs were more likely to meet the high ED use requirement for navigation. Therefore, transportation seems to be an important area for effective navigation. Providing transportation solutions that allow beneficiaries to get to primary care visits regularly could reduce reliance on the ED for health care needs. Providing navigation for beneficiaries with multiple needs is likely even more challenging than providing navigation for any one need. If having multiple needs is related to poorer health and greater utilization, effective navigation for these beneficiaries would be expected to yield the greatest benefits for improved health and reductions in health care utilization and costs. Furthermore, resolution of one need may facilitate resolution of another need. We will explore that possibility in future reports.

3. Implementation of Screening, Community Referral Summary, and Navigation

Documenting how bridge organizations are implementing the AHC Model is essential to understanding if the model is being implemented in the way it was designed. Tracking differences in how bridge organizations approach implementation can help identify best practices and better understand the impact of the model on beneficiaries' health, health care utilization, and associated costs. Identifying implementation facilitators, challenges, and bridge organizations' responses to challenges can also provide opportunities for model improvement.

This chapter of the report presents bridge organizations' progress with respect to key AHC Model activities, addressing four research questions:

- How is usual care defined in terms of addressing the core HRSNs targeted by the AHC Model?
- What percentage of community-dwelling AHC-screened beneficiaries are navigation eligible?
- How are bridge organizations and CDSs implementing the AHC interventions?
- To what extent are CDSs participating in the model?

- What unanticipated challenges have arisen during model implementation? How do bridge organizations respond to these challenges?

Data for this chapter came from three sources. Quantitative findings are based on bridge organizations' reported screening, referral, and navigation data through December 2019 and results from an organizational survey of bridge organization staff administered from April to June 2020. Qualitative findings are based on semi-structured interviews with AHC stakeholders from all bridge organizations active at the time of data collection: January to March 2020. Interviews were conducted with bridge organization leads, bridge organization staff, advisory board members, screeners and other CDS staff, navigators, CSP staff, and a small number of additional stakeholders. The report identifies themes by number of bridge organizations with an interviewee who reported each experience; themes are summarized using the following labels: a *few* (<10%, or 2 or 3), *several* (between 10% and <25%, or 4 to 7), *many* (between 25% and 50%, or 8 to 15), or *most* (over 50%, or more than 15). **Appendix D** provides detailed information regarding the interviews and thematic analysis. **Appendix E** describes the organizational survey protocol and methods.

Key Takeaways and Insights

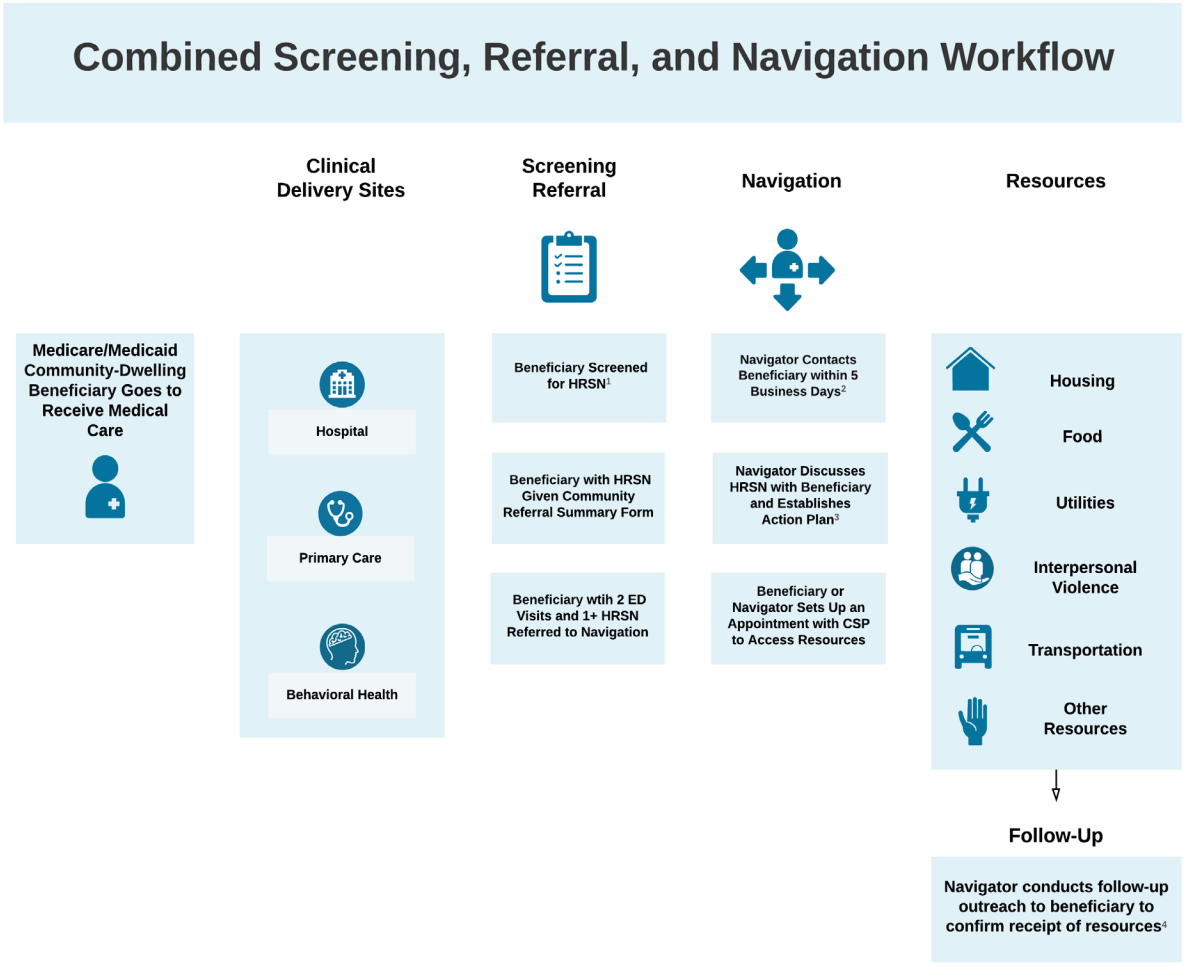
To improve beneficiaries' health, health care utilization, and health care expenditures, the AHC Model must be implemented effectively. Early implementation experiences suggest:

- 15% of screened beneficiaries were eligible for navigation under the AHC Model, which is in line with the Innovation Center target eligibility rate of 13%.
- Screening processes worked best when customized for CDSs' existing workflows.
- More beneficiaries were screened in primary care settings; however, more navigation-eligible beneficiaries were identified in the hospital or ED setting.
- 74% of navigation-eligible beneficiaries opted in for navigation, nearly twice as high as the Innovation Center's projected estimate of 40%.
- Navigators and other implementation staff made trade-offs between serving a high number of beneficiaries and providing services they regard as high quality.

This chapter of the report is organized around key steps in the AHC Model workflow (**Exhibit 3-1**). According to the model, all community-dwelling Medicare and Medicaid beneficiaries receiving clinical care from CDSs participating in the AHC Model are screened for HRSNs. AHC-screened beneficiaries who report one or more unmet core HRSN then receive a community referral summary that lists the CSPs available to resolve the identified HRSN. Beneficiaries with one or more core HRSN who report using the ED at least twice in the 12 months before screening are eligible for navigation. All navigation-eligible beneficiaries—except those assigned to the Assistance Track control group—are offered navigation services to help connect them with CSPs. If a beneficiary accepts navigation, an AHC navigator is tasked with contacting the beneficiary within 5 business days to discuss their needs and develop an individualized plan for connecting them with CSPs that can meet the beneficiary's HRSNs. Navigators continue working with such beneficiaries for 12 months or until their HRSNs are resolved.

Exhibit 3-1. Combined Screening, Referral, and Navigation Workflow

Beneficiaries seeking care from CDSs are screened for HRSNs and directed to community resources, regardless of whether they meet the model's eligibility criteria to be offered navigation.



[1] Some beneficiaries are screened before or after visiting with a provider.
[2] If beneficiaries are not reached within three tries or opt out, they are no longer contacted.
[3] Beneficiaries are contacted through a variety of methods, including in-person and telephone communication.
[4] Navigation cases are open for 12 months or until the beneficiary reports all HRSNs are resolved.
Notes:
Not all beneficiaries receive navigation under the model. Beneficiaries screened by an Assistance Track bridge organization may randomly be assigned to a control group to receive usual care or a beneficiary may opt out of navigation. Please see **Section 1.7.3** for more details.
Behavioral health CDSs provide psychiatric care, counseling services, and substance abuse treatment. Other resources include assistance for noncore needs such as education, employment, and income assistance.
Source: AHC Model funding opportunity announcement.
Definitions: CDS = clinical delivery site; CSP = community service provider; ED = emergency department; HRSN = health-related social need.

3.1 Preexisting Screening, Referral, and Navigation Practices

Implementing the AHC Model required participating organizations to offer new services in their communities. Many bridge organizations reported building their programs in environments that had existing infrastructure for providing non-AHC screening, referrals, and navigation services. Bridge organizations discussed how the AHC Model expanded on existing services that CDSs and CSPs were already providing. Among bridge organizations that commented on these services before AHC during interviews with evaluation staff, most described building on prior programs in screening, referral, and navigation, and all described building on prior infrastructure for referrals. Each participant described at least some modification to the scope or workflow of their screening, referral, and navigation services.

3.1.1 AHC Formalized and Increased Screening for Social Needs

Many organizations that conducted referrals to help beneficiaries address social determinants of health reported experience conducting non-AHC screenings to inform those referrals. Many participating organizations already employed social workers and other professionals who regularly screened individuals for social needs. For example, one CSP described an environment that includes a screening workforce with many social workers, and "embedded within [the social workers'] services is always that [social] needs assessment and connection to resources." A CDS described how the process of becoming compliant with AHC involved modifying their existing screening processes:

> *… before we came on to be part of AHC, I had the community advocate program already up and running. We were asking [about] social needs already, not the same exact questions, we were asking more in the past 6 months, have you had any issues around food insecurity and paying your utilities and that kind of thing. So we were focusing on the unfunded population and those with Medicaid. So when we came on to the AHC, we adopted their screening tool. We still screen for the things that it doesn't cover that we were screening for and assist them with those things. And then we shifted gears to focusing on the Medicaid and Medicare population.*
>
> — CDS Representative

For many bridge organizations, AHC changed their screening systems by formalizing the workflow and expanding the elements that are asked of everyone. Only one bridge organization described the process of screening for social determinants of health as entirely new, and one other described how they previously referred to programs with broad eligibility criteria that did not require screening for social determinants of health.

3.1.2 AHC Expanded the Scope of Referrals

Several participants shared that they provided some type of referral services before participation in AHC. The primary impact of AHC on referral processes is an expansion of scope. For example, several participants discussed how the enhanced screening under AHC has led to referrals for new types of services, such as housing or food. Other participants discussed how changes to the AHC workflow expanded the number of people who receive referrals. For example, one bridge organization described how nurses now routinely give packets with a list of referrals in the community referral summary upon discharge, whereas referrals previously were made by social workers on an ad hoc basis.

3.1.3 AHC Scaled Up Navigation Services

Several participants shared that they provided some navigation services before implementing AHC. However, these services typically were more limited in scope than the navigation conducted through AHC. Some reported that they only provided navigation for specific disease types, whereas others reported that prior navigation efforts were focused on a medical model rather than a social one. This common scaling-up of navigation services often involved using AHC funds to hire navigation staff. Some shared that AHC allowed them to hire dedicated navigation staff to expand their capacity. Other grantees already had robust navigation programs that they adapted to fit the AHC Model.

Only one CDS interviewed shared that navigation was new to their organization. Their organization did not have the capacity to provide navigation services to their beneficiaries, so participation in AHC allowed them to provide navigation services to eligible beneficiaries.

3.2 AHC Screening Implementation

When bridge organizations began implementing the AHC Model, they successfully identified navigation-eligible beneficiaries by implementing AHC screening processes tailored to and around existing clinical workflows. Bridge organizations differed with respect to the percentage of beneficiaries they engage in screening, referral, and navigation and the number of CDS partners that participate in the model on their behalf.

3.2.1 Bridge Organizations Had to Screen a Large Number of Beneficiaries to Identify Those Eligible for Navigation

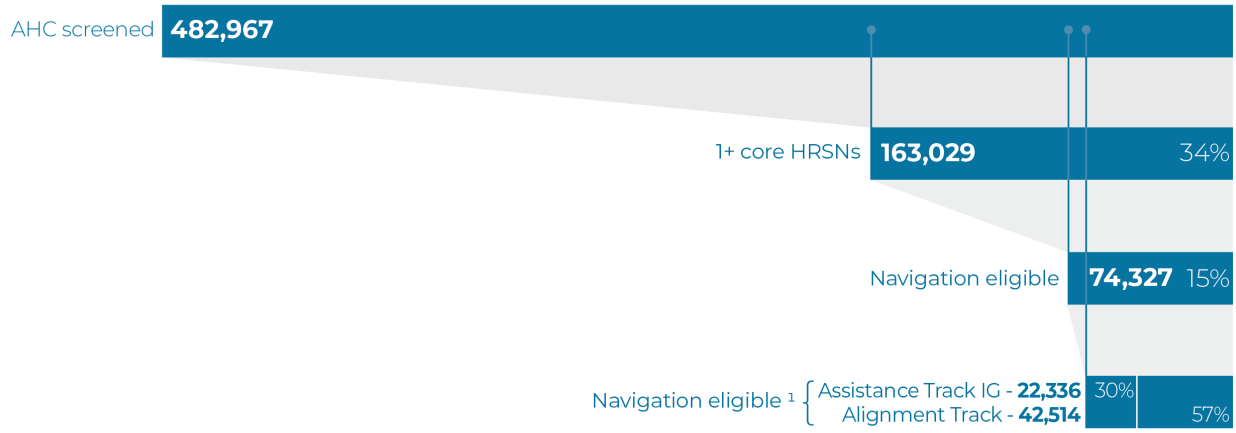
Reach is a short-term outcome of implementation effectiveness and helps evaluators assess the potential impact of scaling a model to various settings and populations. This evaluation defines reach as the extent to which bridge organizations were effective in identifying and assisting beneficiaries with HRSNs by screening, referring, and navigating eligible beneficiaries to CSPs that can resolve beneficiaries' HRSNs.

In developing the guidelines for the AHC Model, the Innovation Center estimated the number of screenings bridge organizations should offer to produce an eligible population that would be large enough to detect an effect of the AHC Model on health care utilization and costs, if an effect were present. They assumed each bridge organization would offer 281,250 screenings in the Assistance Track and 262,500 screenings in the Alignment Track over the 5-year period of performance. These would be nonunique screenings as beneficiaries would be able to be screened more than once. The Innovation Center further assumed 75% of beneficiaries offered a screening would be community dwelling and would complete the screening. Of those, 13% would be eligible for the model (i.e., community dwelling with one or more core needs and two or more ED visits in the 12 months before screening), and 40% of those eligible would participate in navigation.

To assess the extent to which the Innovation Center's assumptions held, we calculated the number of community-dwelling beneficiaries with a completed screening and the percentage of beneficiaries screened who were eligible for navigation. As shown in **Exhibit 3-2**, 482,967 unique beneficiaries completed a screening between May 2018 and December 2019 (see also **Exhibit 3-5**, which provides the number of screenings by bridge organization). Of those, approximately 34% had one or more core HRSNs, and 15% also had two or more ED visits making them navigation eligible. This percentage is slightly above the Innovation Center's estimate of 13% of screened beneficiaries being navigation eligible. Of those eligible for navigation, 30% were in the Assistance Track intervention group and 57% were in the Alignment Track. In accordance with the evaluation design, 70% of those in the Assistance Track who were eligible for navigation were randomly assigned to the intervention group and received an offer of navigation assistance, while 30% were randomly assigned to the control group that received usual care and a community referral summary.

Exhibit 3-2. Navigation Eligibility of Screened Beneficiaries

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



[1] The percentages represent the share of navigation-eligible beneficiaries in each track. Excludes 9,477 Assistance Track beneficiaries with one or more core HRSNs and two or more ED visits who were assigned to the control group (n=9,068) or had no group assignment (n=409). 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.

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.

Source: AHC screening and navigation data, May 2018–December 2019.

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

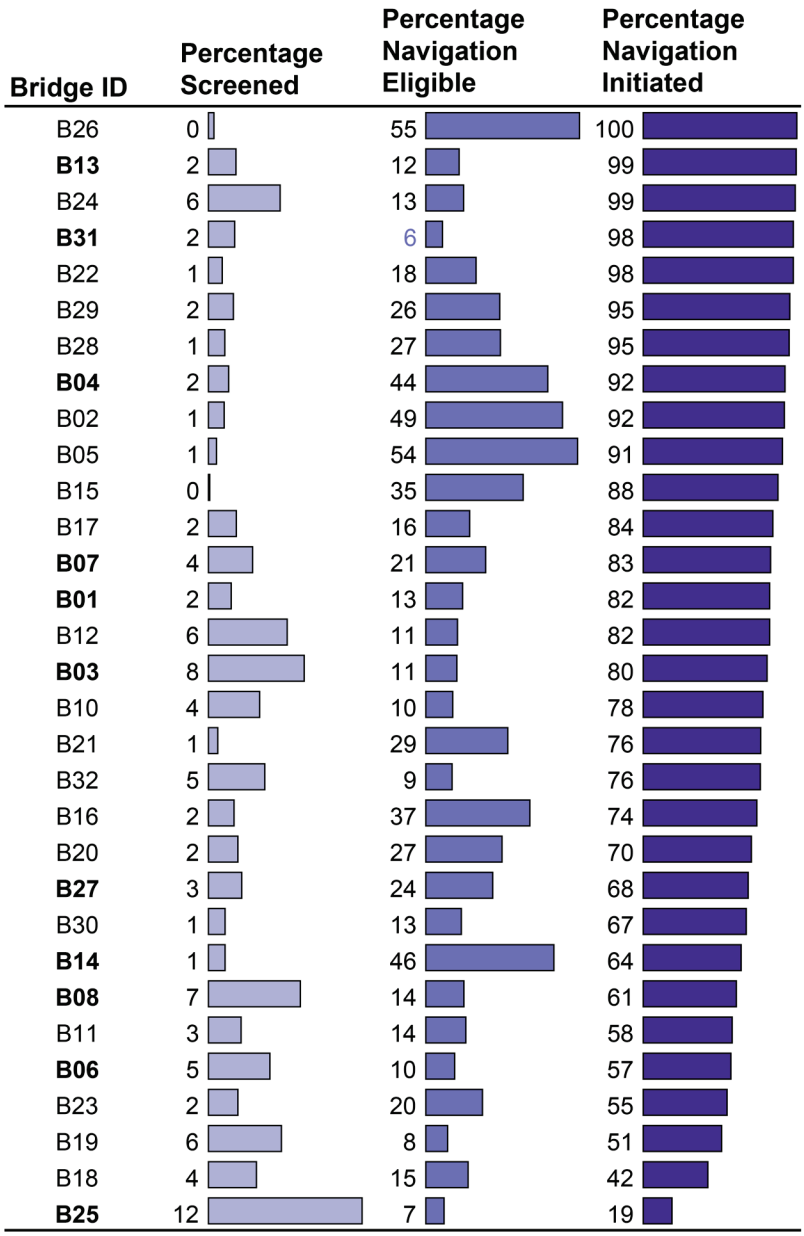
Exhibit 3-3 shows each bridge organization's share of the overall number of unique AHC-screened beneficiaries, the percentage of each bridge organization's screened beneficiaries who were eligible for navigation, and the percentage of each bridge organization's navigation-eligible beneficiaries who had a navigation case initiated. The bridge organizations are shown by the highest to lowest percentage of navigation-initiated beneficiaries. As shown in the exhibit, bridge organizations varied widely in the percentage of navigation-eligible beneficiaries with a navigation case initiated.

In general, bridge organizations that screened more unique beneficiaries tended to have a lower percentage of navigation-eligible beneficiaries. Bridge organizations contributing less than 3% of the overall number of completed screenings among unique beneficiaries averaged 29% of navigation-eligible beneficiaries. In contrast, bridge organizations contributing more than 3% of the overall number of completed screenings averaged 13% of navigation-eligible beneficiaries.

The lack of positive correlation between screening, referral, and navigation eligible suggests a more nuanced view of implementation effectiveness. More screening does not necessarily lead to higher rates of beneficiaries eligible for navigation. It could be inferred that bridge organizations with lower rates of screening and higher proportions of navigation-eligible beneficiaries are targeting the beneficiaries for screening they expect will be eligible for navigation. However, initial findings from the key informant interviews suggest instead that some bridge organizations are targeting CDSs that serve large volumes of navigation-eligible beneficiaries. The targeted CDSs might be EDs where higher risk beneficiaries tend to seek care or operate in vulnerable communities with high rates of HRSNs. Future reports will explore further the relationship between screening, referral, and navigation eligibility.

Exhibit 3-3. Percentage Screened, Navigation Eligible, and Navigation Initiated

Bridge organizations that screened fewer beneficiaries tended to navigate higher percentages of eligible beneficiaries.



Bridge ID	Percentage Screened	Percentage Navigation Eligible	Percentage Navigation Initiated
B26	0	55	100
B13	2	12	99
B24	6	13	99
B31	2	6	98
B22	1	18	98
B29	2	26	95
B28	1	27	95
B04	2	44	92
B02	1	49	92
B05	1	54	91
B15	0	35	88
B17	2	16	84
B07	4	21	83
B01	2	13	82
B12	6	11	82
B03	8	11	80
B10	4	10	78
B21	1	29	76
B32	5	9	76
B16	2	37	74
B20	2	27	70
B27	3	24	68
B30	1	13	67
B14	1	46	64
B08	7	14	61
B11	3	14	58
B06	5	10	57
B23	2	20	55
B19	6	8	51
B18	4	15	42
B25	12	7	19

Notes: Assistance Track bridge organization IDs are in bold. The Assistance Track denominator for navigation initiated is the number of navigation-eligible beneficiaries assigned to the intervention group. Percentage screened is the percentage each bridge organization contributes to the overall number of AHC-screened beneficiaries (bridge organizations with less than 0.50% screened are rounded down to zero); percentage navigation eligible is the percentage of beneficiaries screened by each bridge organization who are eligible for the AHC Model; percentage AHC navigation initiated is the percentage of each bridge organization's navigation-eligible beneficiaries who had a navigation case initiated.

Source: AHC screening and navigation data, May 2018–December 2019.

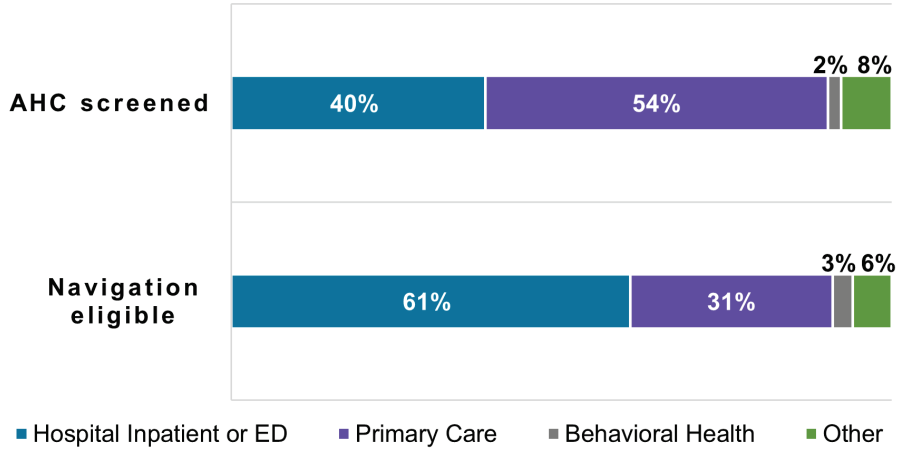
Definitions: AHC = Accountable Health Communities; ID = identifier.

3.2.2 Bridge Organizations Reported Advantages to Screening in the ED vs. Primary Care and Other Clinic Settings

A greater percentage of beneficiaries were screened in primary care settings, while a greater percentage of navigation-eligible beneficiaries were identified in the hospital or ED setting (**Exhibit 3-4**). Beneficiaries screened in the hospital or ED setting were more likely to meet the requirement to have two or more ED visits in the 12 months before screening than those screened in primary care settings (74% vs. 29%, respectively). Beneficiaries screened in primary care settings may include those more likely to have a primary care provider (PCP) and, therefore, less likely to rely on the ED to receive care.

Exhibit 3-4. AHC Screening Reach by Setting

Although more beneficiaries were screened in primary care settings, more navigation-eligible beneficiaries were identified in the hospital or ED setting.



Source: AHC screening and navigation data, May 2018–December 2019.
Definitions: AHC = Accountable Health Communities; ED = emergency department.

Several bridge organizations reported advantages to screening in the ED compared to a primary care or clinic setting. High-risk beneficiaries, many of whom are eligible for the intervention, are frequent users of the ED. Additionally, EDs see a higher volume of "unique" beneficiaries, making it easier for bridge organizations to meet the Innovation Center screening milestones. A few bridge organizations also reported having more time to spend with beneficiaries in the ED than they do in other settings—giving screeners the chance to really connect with beneficiaries as they walk them through the screening tool. Bridge organizations felt this connection increased the likelihood that eligible beneficiaries accepted navigation.

Limitations to screening in a primary care or clinic setting included incomplete screenings, challenges tracking repeat patients, and low patient volume. In these settings, beneficiaries are often in and out quickly and may not have time to fully complete the screening instrument. Additionally, unlike in the ED, beneficiaries visiting a PCP will often return for one or more follow-up visits. A few bridge organization representatives noted that keeping track of which beneficiaries had already been screened was

> *With the clinic, since they're seeing a primary doctor, it's a lot of the same patients. Very repetitive. So there came a time in the past month that I stepped away from the clinic, just because I was encountering the same patients over and over. And it was like I was getting too many declines because I screened Mom last week and now she's here again.*
>
> — Screener/Navigator

challenging for screeners and frustrating for beneficiaries. Finally, seeing so many repeat patients in non-ED settings impeded bridge organizations' ability to meet the model's screening targets because the model counts only unique beneficiaries toward the screening milestones for a given year.

3.2.3 To Effectively Integrate into Workflow, Bridge Organizations Relayed the Importance of Customizing Screening Processes to Each Site

Tailoring screening processes to the unique needs of each practice site was described as a useful strategy for workflow integration. Several bridge organizations indicated that being open to different screening models was important because sites have distinctive organizational cultures, staffing models, and intake procedures. Adapting screening procedures to match each site's individual characteristics was also noted as useful for gaining buy-in and acceptance from site leadership and staff. Bridge organizations described negotiating with CDS leadership on a variety of logistics related to implementing the screening instrument such as timing, location, and modality (i.e., paper, tablet, or by phone). Another consideration was deciding who should administer the screening because some practices prefer to have AHC program staff on-site conduct screenings to prevent burdening clinic staff with an additional task.

> *We have at this point dozens of process maps for all of our different practice sites on how this is done.*
>
> — CDS Representative

3.2.4 Pre- and Post-visit Phone Screening Emerged as an Efficient and Effective Way to Screen More Beneficiaries

Several bridge organizations reported either adding or increasing the amount of phone screening they were conducting. Phone screening helped bridge organizations reach more beneficiaries and build trust because screeners had more time to explain the program and purpose of the questions. Bridge organizations noted that individuals seemed more comfortable and relaxed when answering screening questions in their own home rather than in the waiting room of a busy clinic. Most phone screenings were done before the beneficiary's visit and served as reminder calls for upcoming appointments. One bridge organization screening in a rural area described pre-visit calls as their most effective strategy for increasing the percentage of beneficiaries screened because there was such a high number of no-shows at the local clinic. Often, a phone call was the only way they could reach these beneficiaries with an offer to screen. Alternatively, a few bridge organizations described calling beneficiaries after they presented at an ED. Post-visit phone calls were typically performed to reach individuals who arrived at the ED during times when no on-site screener was present, such as the middle of the night.

3.2.5 Screening Results Were Not Consistently Communicated With the Clinical Team

Although a few bridge organizations described regularly engaging physicians or nurses in screening discussions, several noted that clinicians were not consistently notified of screening results. Data systems for tracking screenings are not always integrated into a practice's existing electronic health records, and if they are, clinicians do not necessarily review the results. As one bridge organization noted, screening discussions typically occurred among the care management team, which comprises a social worker, care coordinator, and community health worker. Another

> *They were scanning it into the record and then the doctor was reviewing it, but as far as putting the tool in place in the hands of the patients and talking to patients about it, the medical team was kind of behind the scenes.*
>
> — CDS Representative

bridge organization indicated that adding conversations about beneficiary screening created an additional burden for overworked physicians, who may not have the time or willingness to address nonclinical issues. Notably, many bridge organizations were screening only via phone for selected sites, suggesting that fully integrating screening processes into a practice's workflow may not be an option for every CDS.

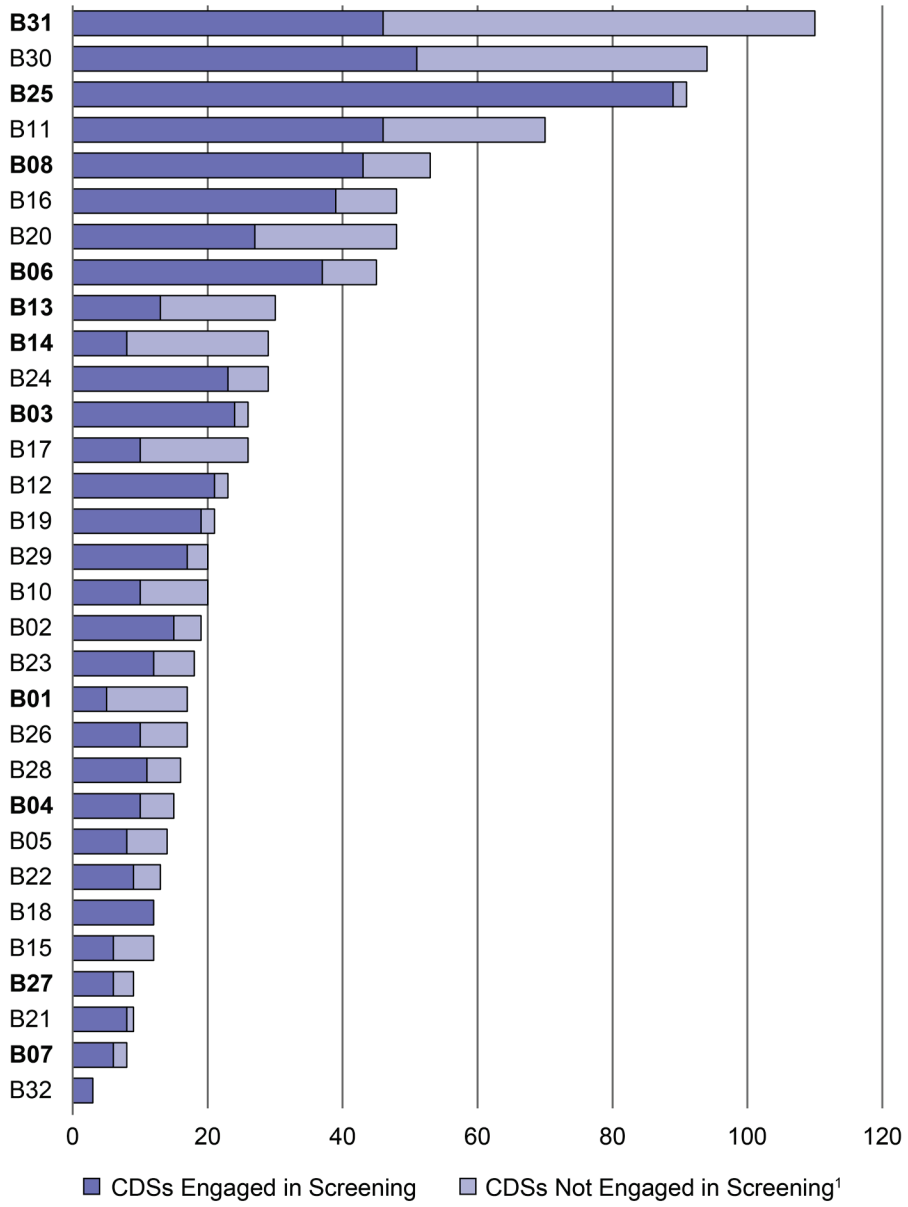
3.2.6 Engagement of CDSs Varied Across Bridge Organizations

One measure of clinical engagement in the AHC Model is CDS participation, or the extent to which CDS partners engage in the AHC Model by screening beneficiaries. **Exhibit 3-5** shows the number of CDSs by bridge organization and the number of those CDSs that had screened at least one beneficiary through December 31, 2019. Bridge organizations have between 3 and 110 CDSs, with a total of 644 CDSs currently or previously active and an average of 31. In general, bridge organizations with more CDSs had greater CDS engagement. However, bridge organizations varied in the way they identified and categorized their CDSs in the AHC data system. Some bridge organizations specified a small number of CDSs that reflect large health systems (e.g., B32), while other bridge organizations specified a large number of CDSs by noting each department within a hospital as a separate CDS (e.g., ED, labor and delivery, cardiology). Thus, the number of CDSs and the number of screenings each CDS might contribute are not comparable across bridge organizations.

Exhibit 3-5 does not account for the fact that there is great variability in the number of screenings completed by individual CDSs. Bridge organizations specified in the AHC data system whether CDSs are "active" or "inactive." We excluded inactive CDSs that had not completed any screenings by December 31, 2019. Thus, all CDSs included in our analyses had screened at least one beneficiary (whether currently active or inactive in the data system), including those that had screened only one beneficiary.

Exhibit 3-5. CDS Engagement by Bridge Organization

In general, bridge organizations with more CDSs had greater CDS engagement.

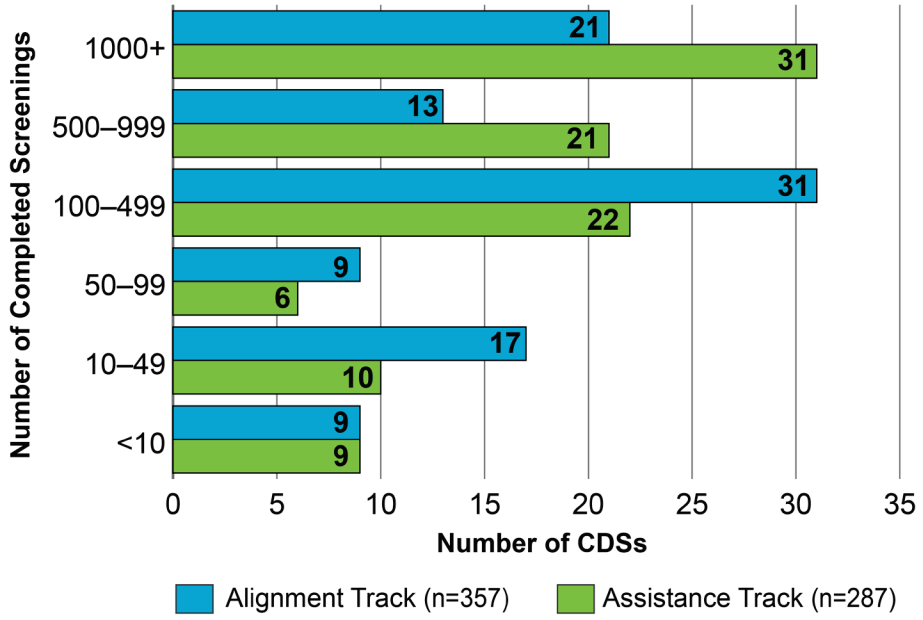


[1] Includes CDSs noted as "active" in the AHC data system as of May 2020.
Notes: Assistance Track bridge organization IDs are in bold.
Source: AHC screening and navigation data, May 2018–December 2019.
Definitions: AHC = Accountable Health Communities; CDS = clinical delivery site.

We not only examined the number of CDSs engaged in screening, but also the extent to which CDSs were engaged in screening by looking at the number of screenings per CDS. **Exhibit 3-6** shows that the percentage of completed screenings ranged from fewer than 10 screenings to more than 1,000 as of December 31, 2019. A greater percentage of Assistance Track CDSs had completed more than 1,000 screenings, whereas a greater percentage of Alignment Track CDSs had completed between 100 and 499 screenings.

Exhibit 3-6. CDS Participation by Track

Assistance Track CDSs completed greater numbers of screenings than Alignment Track CDSs.



Source: AHC screening and navigation data, May 2018–December 2019.
Definitions: CDS = clinical delivery site.

3.3 AHC Community Referral Summary Implementation

The AHC Model requires that all AHC-screened beneficiaries with unmet HRSNs receive community referral summaries tailored to their needs, which are populated with information from a CRI that bridge organizations are required to maintain. This section describes findings to date on how AHC staff developed and updated the CRIs and customized the referral service.

3.3.1 Bridge Organizations Found It Difficult to Maintain Up-to-Date Information About Community Resources

CRI. Bridge organizations develop the CRI using a data system to generate a list of resources based on beneficiary location and identified HRSNs. Bridge organization staff initially populated their CRI with resource data from several different sources, including online human services directories such as 211 (www.211.org), Unite Us (www.uniteus.com), NowPow (www.nowpow.com), Aunt Bertha (www.auntbertha.com), My Resource Pal (www.myresourcepal.org), community partners, and recommendations from navigators. Bridge organizations in the Alignment Track also consulted with their advisory boards. Community health workers from one bridge organization populated their CRI by identifying partners in the community and the services they provide. Care managers from another bridge organization kept their own notebook of resources and got involved in the community to learn more about available resources.

Updating the CRI. Regardless of which sources they used to build the CRI, bridge organizations are expected to update the CRI annually, but they varied in their ability and methods used to keep the CRI updated. To avoid sending beneficiaries to CSPs that may be overwhelmed or no longer accept referrals, several bridge organizations updated their CRI regularly using feedback from navigators, CSPs, beneficiaries, and advisory board meetings. The frequency of updating the CRI also varied across organizations: one organization reported that they update their

CRI every 6 months based on beneficiary feedback, and several update their CRI only when they realize a specific resource is not available. One organization holds a monthly lunch-and-learn session, where CSPs present to a team of bridge organization staff on the services their organization provides; this information is then used to update the CRI. Because of limited staff and high workloads, a few bridge organizations reported lacking capacity to routinely update their CRI even though they recognized the need. Many bridge organizations found it difficult to keep resources updated because CSPs change their processes, hours, or location, forcing the navigator or screener to verify resources while they are working with the beneficiary.

> *What we try to do is give them the resource list. Encourage them to give them [CSP] a call, because ultimately what we want to do is have the patient feel empowered. So we can't be with them long term, we only have that 365-day window. So we want to get them involved as much as possible, and let them have a hand in it.*
>
> — AHC Navigator

Customizing referral process. CDS staff used a range of tactics to provide the tailored referral summaries to beneficiaries. For example, staff printed a customized summary, printed and electronically attached a list to beneficiaries' electronic health records, or mailed a list to beneficiaries. One organization simply wrote resources on a sheet of paper. During the referral process, several organizations offered additional details about the resources, including hours of operation, specific contacts, and what the beneficiary can expect when going to the CSP. A few bridge organizations found that the more navigators knew about a CSP, the easier it was to navigate beneficiaries successfully. One CDS took the approach of encouraging beneficiaries to take ownership of the resource-finding process. For their beneficiaries who are veterans, one organization created a separate Veterans Affairs resource list, freeing up more general community resources for nonveteran beneficiaries.

3.4 AHC Navigation Implementation

Many navigators described their continuing commitment to helping beneficiaries access the community services they need, and AHC stakeholders across roles perceived that the model appropriately expanded the scope of health care to address long-standing social issues and led to significant improvements in beneficiaries' lives. However, bridge organizations found implementing and managing the AHC Model's navigation component more complex than initially anticipated. Major causes for these complexities included higher than expected acceptance rates; tensions with delivering high-quality navigation services while dealing with high beneficiary caseloads and the time-consuming needs of beneficiaries with multiple needs, including needs beyond the five AHC core HRSNs; a lack of adequate referral resources in communities; and difficulties maintaining contact with beneficiaries for the 12-month follow-up period. The beneficiaries described in this section were all eligible for navigation, were offered navigation, and accepted navigation assistance. Navigation-eligible beneficiaries who were assigned to the Assistance Track control group and navigation-eligible beneficiaries who declined the offer of navigation assistance are not included in this discussion of navigation workflow. The experiences of those beneficiaries will be presented in future reports.

3.4.1 Navigators Used Multiple Strategies to Engage Beneficiaries

Bridge organizations used in-person, phone, email, text messaging, or a mix of these approaches to contact and initiate navigation with beneficiaries across and within bridge organizations. Many bridge organizations found that embedding navigators within screening locations at hospitals or clinical settings provided an initial in-person contact that facilitated rapport, navigation acceptance, and creation of an action plan with beneficiaries on the day they were screened. For example, one ED-based navigator met with beneficiaries in their hospital room after they

had been admitted. This kind of immediate contact helped create trust, and navigators believed it improved the likelihood of successful beneficiary follow-up.

Initiating navigation services with eligible beneficiaries within 2 business days after screening as required by the model was considered challenging by navigators and bridge organizations once the beneficiary left the hospital or clinical setting. Although most bridge organizations reported conducting a first navigation contact by phone, connecting with beneficiaries solely by phone proved difficult. Many people would not answer the phone unless they recognized the phone number, or they hung up at once because they were worried about scams. Many beneficiaries purchased phone minutes and were concerned about running out of paid time. In numerous instances, the contact information was incorrect, the phone was out of service, the phone number had been changed, or the navigator left a voicemail and got no call back. To improve beneficiaries' responses to phone navigation, some navigators used text messaging, alerting the beneficiary that they would be calling. Some navigators who were unable to establish phone contact with beneficiaries initially had success in using emails and letters that included program information and asked the beneficiary to call the navigator. Once phone contact had been made, some navigators followed up with an in-person home visit. Although establishing rapport by phone took longer than establishing rapport in person, navigators found that successful phone contact enabled them to communicate effectively their concern for and desire to assist the beneficiary.

After three attempts to contact the beneficiary, navigators may document that HRSNs are unresolvable. However, a few bridge organizations mentioned they might continue with efforts to contact the beneficiary after three failed attempts, depending on the beneficiary's situation. An 89-year-old in need of housing was an example one navigator gave where the navigator might continue efforts beyond three attempts, by possibly doing a home visit to try to connect with the beneficiary. When cases were considered unresolvable, many bridge organizations sent a letter to the beneficiary. According to one navigator, this method sometimes elicited a response, particularly in rural areas. Several navigators also reported beneficiaries contacting them to initiate navigation services months after the initial contact, at which point the navigators resumed work with beneficiaries on addressing their HRSNs.

3.4.2 Higher Than Anticipated Acceptance of Navigation Contributed to High Navigator Caseloads

As noted in **Section 3.2**, the Innovation Center estimated that 40% of eligible beneficiaries would participate in navigation. Surprisingly, approximately 74% of navigation-eligible beneficiaries elected to accept navigation services and had navigation initiated, almost twice the anticipated amount. In considering the reasons for a high acceptance rate, many bridge organizations and navigators attributed the higher than anticipated acceptance of navigation to a high level of need among beneficiaries. One bridge organization opined that beneficiaries who are screened and come into navigation from the ED are often Medicaid beneficiaries who are low income and have unmet needs that would result in their being more receptive to navigation. Some navigators considered their ability to build trust and credibility with navigation-eligible beneficiaries as the critical element in beneficiaries accepting navigation. These navigators discussed the importance of building trust by listening to the beneficiary, asking questions, letting the person know the navigator is there to assist them, assuring them their information is kept confidential, and being clear and specific about the services offered. Although not the sole factor in determining navigators' caseloads, this high level of navigation acceptance was a significant factor in many bridge organizations having navigators with high active caseloads ranging between 120 and 300 beneficiaries per navigator.

3.4.3 Navigators Can Face a Tension Between Service Quantity and Quality

Many bridge organizations described challenges associated with managing large active caseloads. Explanations given for the high caseloads included the higher than anticipated beneficiary acceptance of navigation (see **Section 4.1**), attempts to meet the Innovation Center's navigation expectations, and staff turnover (see **Section 3.5.4**). In addition, in the following section, we discuss the impact on bridge organizations of the time-consuming task of navigating beneficiaries with multiple HRSNs, navigators' efforts to assist beneficiaries with needs beyond the core HRSNs, and the difficulty of following up with beneficiaries.

> *And that's again why we [are] … really trying to empower the patients. Just because it is such a high caseload. The more that we can give the patient and kind of help them ... it helps us in the long run ... [Caseload] is manageable, but I do think that it could be more efficient if it were smaller and more focused ... Just being able to have more time to spend with the patients, and then help them get in contact in some cases with organizations.*
>
> — Navigator

Even with large caseloads, many navigators strived to provide in-depth, high-quality navigation and expressed their commitment to working with the beneficiaries they assisted. Several navigators expressed the importance of building a relationship with the beneficiary to the point where the beneficiary buys into the process and becomes empowered. As one navigator expressed it: "You can navigate somebody by making the referral, and you could even handhold them to go there, but unless you're going to do that every time, which is unrealistic and impossible, at one point there has to be a transition of ownership or sharing of ownership. [For the beneficiary] to say, 'I need this, and I want this as much as the navigator is telling me that I need it.'"

3.4.4 Navigation-Eligible Beneficiaries Had Multiple Needs

Navigators worked with many beneficiaries with multiple needs. Nearly 60% of beneficiaries who accepted navigation reported having more than one HRSN (see **Section 2.3.3**). Navigators often spent an hour or more working with these beneficiaries during their initial meeting to understand their needs, develop an action plan, arrange referrals, and make appointments. Some navigators had multiple beneficiaries each day who required this level of assistance. In response, several bridge organizations tailored their navigation approach by assigning clients with multiple HRSNs to the more experienced navigators. To avoid making several different referrals for the same multiple-need beneficiary, many bridge organizations referred these beneficiaries to CSPs with the capacity to meet their multiple needs. Several navigators, noting the need for time-consuming follow-up with multiple-need beneficiaries, described facilitating beneficiaries' experience by arranging appointments directly with a contact at the agency; setting up a three-person call with themselves, the beneficiary, and the CSP agency; or making referrals to a CSP agency that the navigator trusts to deliver services to beneficiaries. One bridge organization had navigators located part-time at a large, multiservice CSP and, thus, was able to work with beneficiaries through the entire referral process—from conducting the screening and offering and initiating navigation services at the CDS to helping beneficiaries access services on-site at the CSP.

3.4.5 Navigators Identified and Addressed HRSNs Beyond the Core Five

Many bridge organizations talked about beneficiaries' needs for referrals and assistance beyond AHC's five core HRSNs, finding that additional needs affected the core HRSNs. One bridge organization identified medication assistance as a need for many clients. A diabetic beneficiary, for example, had a food need, but also had medication costs of $400 per month. The navigator made a connection and appointment for the beneficiary with a medication assistance program, which reduced the medication costs to zero, freeing up money for the AHC core need. Childcare is another often identified noncore need, for which one bridge organization compiled a resource

list of low-cost alternatives for parents, noting, "[this] frees up a part of their budget for another need that might be one of the five core needs." A few bridge organizations talked about using funding available through their organization and in-kind services in addressing these needs. And a few bridge organizations worked with hospitals and churches to get supplies for babies on weekends and holidays, when social service agencies are closed. Additional services provided by a few bridge organizations to aid in resolving core HRSNs included application assistance for Social Security disability and for Veterans Affairs benefits, aid in accessing service benefits through Medicaid managed care organizations, and referrals for family legal services.

3.4.6 Navigators Found Insufficient Community Resources for Referrals

Navigators sometimes expressed frustration with limited resources available in communities. Several navigators and bridge organizations encountered shortages or long waiting lists for needed community resources (**Section 4.2**). One navigator talked about needing more community resources for housing, food, transportation, and utilities assistance than were available. One rural bridge organization claimed no funding was available through the utility company or other community resources to help beneficiaries with utilities issues. Other bridge organizations pointed to housing and transportation shortages. Bridge organizations noting housing shortages cited the many-year waiting period for U.S. Housing and Urban Development housing and the lack of housing accommodations for the homeless. Bridge organizations in both urban and rural areas noted that inadequate or nonexistent public transportation led to reliance on private alternatives. In urban areas, public transportation is not always convenient or timely, and bridge organizations described Uber and Lyft as charging fees that many beneficiaries with needs could ill afford. In some rural areas, where these services are often unavailable, beneficiaries had to rely on friends or relatives who may have a car. A few navigators discussed difficulties that arise when they are able to get a beneficiary into a food program, for example, but the beneficiary needs transportation to get to the program's location. And transportation services may either be difficult to access or restricted for a specific purpose (e.g., medical appointments).

3.4.7 Clients Were Lost to Follow-Up

The AHC Model requires that navigators stay connected with beneficiaries at least monthly for 12 months to connect them with a CSP to resolve their HRSNs. This requirement was challenging, particularly for transient or chronically homeless beneficiaries. Some of these beneficiaries were lost to follow-up within several weeks, failing to answer their phone or respond to text messages. A few bridge organizations said that they were lucky if they had a person on board for 3 months. One bridge organization considered 9 months to be a "success" because they found that beneficiaries tended to be stable at 9 months and did not need further navigation. Because CSPs are not required to, and often do not, inform navigators about referral outcomes, navigators generally relied on beneficiaries' self-report as to whether they received services and had their needs resolved. When a beneficiary was lost to follow-up and the navigator had unsuccessfully attempted to contact the beneficiary on at least three separate, consecutive occasions to resolve their needs, the HRSNs were documented as attempt failed—unresolvable.

3.5 Workforce Capacity for AHC Screening, Referral, and Navigation

As described in the preceding sections, the demands of screening and, in particular, navigation can be daunting, and the capacity to recruit and maintain an adequate workforce is an important factor to assess in evaluating implementation. This section describes the staffing models bridge organizations developed to ensure workforce capacity, the training of screeners and navigators, and staff turnover and burnout. These findings are drawn primarily from the Organizational Structure Survey completed by the bridge organization leads and supplemented with interview data to provide additional details and context.

3.5.1 The Majority of Bridge Organizations Employed Staff to Work Solely or Mostly on Screening, Referral, and Navigation

Bridge organizations reported that they employed between 2 and 32 staff members who were paid in whole or in part with AHC funding with a median of 8 and little difference between bridge organizations in the Assistance and Alignment Tracks. Looking more closely at bridge organizations' AHC staffing, we see that the vast majority of bridge organizations paid staff whose primary (not necessarily only) role was to conduct screenings (72%) or navigation (79%) (**Exhibit 3-7**). The majority of bridge organizations had screeners who also operated as paid front desk or administrative staff (59%), and nearly half had screeners who were social assistance providers (48%) not paid with AHC funds. Compared to screeners, AHC navigators were much less likely to also serve as front desk staff, provide medical care or social assistance, or be unpaid staff.

Exhibit 3-7. Types of Screening, Referral, and Navigation Staff at Bridge Organizations

Type of Staff	Screeners	Navigators
Paid staff whose primary role is conducting AHC screenings/navigation; they may have additional duties	72.4%	79.3%
Unpaid volunteer staff whose primary role is conducting AHC screenings or navigation; they may have additional duties	48.3%	13.8%
Paid front desk or administrative staff	58.6%	3.4%
Medical care providers not paid using AHC funds (e.g., medical assistants, nurses)	37.9%	10.3%
Social assistance providers not paid using AHC funds	48.3%	31.0%
Other, please specify	17.2%	6.9%

Notes: Totals are greater than 100% because this question allowed multiple responses. Percentages indicate the percentage of bridge organizations using each staffing model.
Source: Preliminary findings from the Organizational Structure Survey (administered between May and June 2020 and completed by 29 bridge organization leads).
Definitions: AHC = Accountable Health Communities.

3.5.2 Staffing Models Varied Widely Both Among and Within the Bridge Organizations

Bridge organizations designed staffing models pragmatically to help ensure they maximized available staffing resources. **Exhibit 3-8** shows the different staffing models bridge organizations used and the attributes of each. Multiple parallel staffing strategies were developed, including mobilizing existing clinical staff, interns, and new hires (e.g., bridge organization–specific centralized navigators).

Staffing processes varied not only *among* bridge organizations but also *within* them. The staffing used to conduct screenings varied by sites: for example, within one bridge organization, some CDSs used administrative staff to conduct screening, others used unpaid volunteers, and one used clinical staff (a medical assistant). Staffing challenges differed by CDS setting. Staffing for AHC-related work in primary care settings was more likely to involve existing staff than AHC-related work in other settings. However, even within primary care settings, a major challenge was identifying the right place, time, and staff within the standard clinical workflow to conduct

screening. Other settings, especially the ED, required screening, referral, and navigation staff to rapidly adapt approaches based on other care delivery factors at the time of care (e.g., conducting screening in the ED in between tests or clinician visits). As a result, EDs commonly used staff dedicated to screening, referral, and navigating with few non-AHC responsibilities.

Although screening staff and activities tended to be decentralized and run through the CDSs, staffing for navigation activities was often centralized or managed by bridge organizations. Standardization of recruiting, training, and navigation activities across the bridge organization community was described as minimizing the burden on CDSs. Many bridge organizations described centralization of navigation activities, often carried out by phone, as fostering a greater sense of community and peer-to-peer learning across navigators. Navigators who are centrally located and conduct outreach from the same office can more easily share their successes, challenges, and resolutions with one another. As described below, these interactions were also thought to help reduce burnout and turnover among navigators.

Exhibit 3-8. Characteristics of Different Staffing Strategies Used by Bridge Organizations

Staffing Strategy	What This Entailed	Why/How It Helped
Blended staffing	A variety of staffing approaches were used, adapting the protocols as necessary to complete AHC Model requirements.	This strategy allowed bridge organizations to optimize resources to complete model requirements.
Dedicated AHC staff	Most bridge organizations used at least some **staff dedicated specifically** to AHC activities for screening, referral, and navigation: • **72%** of bridge organizations used at least some dedicated staff for screening. • **79%** of bridge organizations used at least some dedicated staff for navigation.	When feasible, bridge organizations recruited staff to support AHC activities. Given limited resources, however, organizations were cautious about hiring staff dedicated to AHC activities alone.
Existing staff	Bridge organizations were much more likely to use at least some **existing staff** for screening than for navigation. Front desk or administrative staff were used by: • **59%** of bridge organizations for screening • **3%** of bridge organizations for navigation Medical care staff were used by: • **38%** of bridge organizations for screening • **10%** of bridge organizations for navigation	Screening activities were more often integrated into existing clinical workflows, which relied on staff at CDSs who could support AHC activities in addition to their other responsibilities. Navigation activities required more intensive interaction with beneficiaries in addition to follow-up contacts. Existing clinical staff rarely had capacity to assume these additional responsibilities.
Volunteers	Nearly half of bridge organizations reported **using at least some volunteers** for screening activities: • **48%** of bridge organizations for screening • **14%** of bridge organizations for navigation	Volunteers enabled bridge organizations to efficiently meet requirements with minimal financial investment. However, volunteers required specific training, recruitment, and management protocols.

Source: Preliminary findings from the Organizational Structure Survey (administered between May and June 2020 and completed by 29 bridge organization leads).
Definitions: AHC = Accountable Health Communities; CDS = clinical delivery site.

3.5.3 Routine, Structured Training Was a Common Aspect of Workforce Development

Most bridge organizations developed and provided structured, systematic training for individuals in screening, referral, and navigation roles. Most used routine training approaches that included presentations (in person or online), experienced staff shadowing, role-playing of routine and challenging activities, staff performance reviews, and coaching. Quality was ensured through observing screening or navigation encounters, monitoring number of screenings completed, and tracking navigation follow-up. Many bridge organizations also used innovative training strategies they felt were particularly effective. These innovative training strategies are summarized in **Exhibit 3-9**.

Exhibit 3-9. Innovative Training Strategies

Training Strategy	What This Entailed	Why/How It Helped
Simulation lab techniques	Practice standardized beneficiary scenarios in a simulated electronic environment.	Provides a safe space for practicing and receiving feedback before working live with beneficiaries.
Going beyond the "what" to the "why"	Provide background and context for the wording and purpose of the screening items and screening role in terms of the organization and beneficiary impact.	Makes staff feel they can better assist beneficiaries with completing the screening, improves staff engagement.
Patient engagement	Provide training on how to approach beneficiaries and ask the screening questions (e.g., wording to introduce purpose).	Conveys importance of approach and wording, provides wording and opportunities to practice the approach.
Community resources	Conduct "field trips" to visit CSPs.	Establishes personal relationships with CSPs, deepens understanding of resources, links beneficiaries more effectively with resources.
Motivational interviewing	Provide training on motivational interviewing techniques.	Is perceived as increasing engagement between staff and beneficiaries, beneficiary acceptance of screening/navigation, and navigation effectiveness.
Trauma-informed care	Provide training on trauma-informed care (strength-based framework grounded in an understanding and responsiveness to the impact of trauma).	Increases engagement and staff ability to create a safe space for beneficiaries.
Racial inequity training Cultural competency	Provide training on root causes of health disparities.	Increases understanding of health disparities in the community.
Peer-to-peer learning	Convene "navigator networks" to facilitate discussion.	Increases shared learnings and strategies.

Definitions: CSP = community service provider.

Multiple sources (including bridge organization leads and CSPs) judged that stronger training also required information about available community resources. Interviewees noted the need to better understand the services offered by individual community resources, how CSPs work with beneficiaries, and the advantages of making

personal staff-to-staff connections with CSPs. Bridge organizations also felt that more training could be useful on strategies to increase beneficiary acceptance of screening, optimize workflows to transition beneficiaries into navigation, and to determine the best way to support beneficiaries experiencing interpersonal violence. Bridge organizations also reported challenges in implementing more robust training approaches with staff who were already under strain to meet AHC Model implementation milestones.

3.5.4 Staff Turnover and Burnout Were Prevailing Workforce Challenges

Consistent with previous research and the nature of some of the identified roles (e.g., unpaid interns, short-term staffing), turnover and team member burnout were key workforce challenges. Interviewees attributed turnover to several factors, including low salaries and staff leaving project-funded positions to take stable permanent positions elsewhere. Burnout from high caseloads, secondary trauma (indirect exposure to trauma through a firsthand account or narrative of a traumatic event), and "compassion fatigue[8]" were also noted. Turnover led to bridge organizations having to dedicate resources to perpetual staff recruitment and training and working with a less experienced workforce to meet model milestones and resolve beneficiaries' needs. To reduce staff turnover and manage burnout, bridge organizations identified a range of strategies that are summarized in **Exhibit 3-10**.

Exhibit 3-10. Strategies to Reduce Staff Burnout and Turnover

Strategies	What This Entailed	Why/How It Helped
Promotion	Recruit prior interns for paid roles. Transition screening staff into navigation roles.	Increases staff retention, creates a workforce pipeline.
Creation of sustainable jobs	Hire bridge organization staff into permanent positions.	Increases staff commitment by enabling staff members to perceive their position within an organization as permanent.
Feedback on impact of work	Ensure screening/navigation staff hear about positive beneficiary experiences post-navigation (e.g., success stories).	Improves staff engagement and morale. Provides a sense of being a part of something that could be positive change.
Streamline onboarding	Improve efficiency in onboarding new staff to reduce staff burden.	Reduces training burden on existing managers and staff.
Creation of screening or navigation manager position	Ensure supervision and training for screening, referral, and navigation staff.	Provides direct and dedicated supervision and support, perceived as increasing professionalism/competency across staff.

3.6 Conclusions

Bridge organizations and their partners have achieved notable successes implementing the AHC Model to date. Bridge organizations and CDSs are identifying the expected proportion of high-risk beneficiaries with unmet HRSNs, particularly in the ED setting. They are minimizing model implementation burden on clinical staff by tailoring the screening process to, or around, existing workflows and using multiple methods to achieve screening

[8] According to the American Institute of Stress (2020), compassion fatigue is "also called 'vicarious traumatization' or secondary traumatization (Figley, 1995). [It is distinct from burnout and can be defined as] the emotional residue or strain of exposure to working with those suffering from the consequences of traumatic events." https://www.stress.org/military/for-practitionersleaders/compassion-fatigue

goals. AHC stakeholders have overwhelmingly lauded the AHC Model as expanding the scope of health care and helping improve beneficiaries' lives.

Significant implementation challenges nevertheless remain, particularly with respect to navigation. Screeners and especially navigators struggle to balance the goals of engaging a large number of beneficiaries in the AHC Model while also delivering services in a patient-centered way—which typically requires substantial time and face-to-face interaction. With higher than expected caseloads and limited contact information, navigators struggle to communicate with beneficiaries to follow up on their HRSNs. To meet these challenges, bridge organizations rely on project-funded employees and volunteers to reduce burden on busy clinical staff, but this approach limits clinician engagement and may not be sustainable when AHC funding ends. The challenges and stress of working with higher risk beneficiaries with often significant HRSNs are reflected in the high rates of staff turnover and burnout.

Future reports will extend the findings presented here with more detailed accounts of clinicians' and CSPs' involvement in and feedback on the AHC Model implementation that are not yet fully captured in the evaluation data. These findings will be supplemented with a survey of bridge organizations and a third wave of qualitative interviews. We will use these data to better understand problems connecting beneficiaries to CSPs and the high percentage of unconnected beneficiaries discussed in **Chapter 4**. Subsequent reports will also address how bridge organizations, CDSs, CSPs, and other stakeholders have worked to remedy gaps in community resources to address HRSNs and the extent to which their efforts have been effective.

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4. HRSN Resolution

The AHC Model's theory of change hypothesizes that resolving beneficiaries' HRSNs will improve their health, which will reduce unnecessary heath care utilization and associated health care costs. This chapter presents early findings that address the following questions about resolution of beneficiaries' HRSNs:

- What percentage of beneficiaries who completed 12 months of navigation were connected to a CSP for at least one HRSN, but did not have any HRSNs resolved?

Key Takeaways and Insights

- Most navigation-eligible beneficiaries whose navigation case were closed had not been connected with a CSP for any HRSNs and did not have any HRSNs documented as resolved.
- Lack of transportation was a fundamental challenge for HRSN resolution because it constrains beneficiaries' ability to access other needed services. To help resolve HRSNs, a few interviewees reported providing transportation to beneficiaries to help them reach CSP appointments.[9]
- In addition to having sufficient resource quantities, HRSN resolution required that CSPs have resources of certain qualities (such as medically and culturally appropriate food).
- Support and systems for bidirectional communication between CSPs and CDSs helped improve documentation and strengthen AHC stakeholder engagement, model integration, and HRSN resolution.
- Alignment Track advisory boards and quality improvement activities focused more on model implementation than on community needs.

[9] AHC funds cannot be used to provide transportation, food, utility assistance, or other goods and services related to an HRSN.

- What percentage of beneficiaries who completed 12 months of navigation had at least one HRSN resolved?
- What are the characteristics of the HRSN support system in bridge organization communities, as reported by AHC stakeholders? What types of community resources exist in bridge organization communities to address HRSNs?
- Are sufficient resources available to meet bridge organization communities' HRSNs? How do the supply and quality of community resources vary across bridge organization communities?

Data to answer these questions came from two sources. Quantitative findings were based on the AHC screening, referral, and navigation data through December 2019. Qualitative findings were based on quality improvement plans, progress reports, and semi-structured interviews with AHC stakeholders conducted from June to August 2019 and from January to March 2020. Interviewees included bridge organization leads and staff, Alignment Track advisory board members, screeners and other CDS staff, navigators, and CSP staff. We identified themes by number of bridge organizations with an interviewee who reported about the experience: a few (<10%, or 2 or 3), several (between 10% and <25%, or 4 to 7), many (between 25% and 50%, or 8 to 15), or most (over 50%, or more than 15). Unless otherwise noted, the term "interviewees" indicates that the theme was reported by a mix of stakeholders. **Appendix D** provides more detailed information about the qualitative data and thematic analysis.

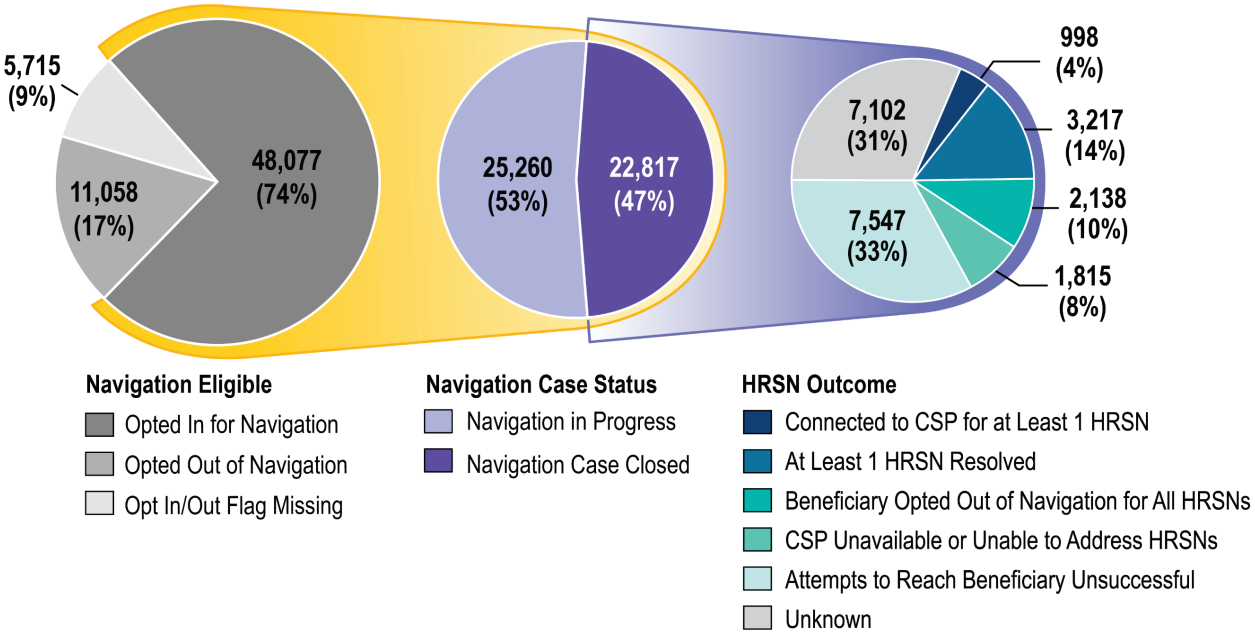
4.1 Among Beneficiaries With a Closed Navigation Case, Connection to CSPs and Documentation of HRSN Resolution Were Low

As described in **Section 3.2.1**, 15% of screened beneficiaries were eligible for navigation. **Exhibit 4-1** provides a snapshot of navigation-eligible beneficiaries' status as they progressed through the model. As shown in the leftmost pie (and previously discussed in **Section 3.4.2**), 74% of navigation-eligible beneficiaries opted in for 12 months of navigation. For more than half of those, navigation was still in progress (middle pie). As shown in the rightmost pie, 14% of those with a closed navigation case had at least one HRSN documented as resolved and 4% were connected to a CSP for at least one HRSN (with 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. More specifically, 10% opted out of navigation for all of their HRSNs, after having opted in for navigation; a CSP was unavailable or unable to address HRSNs for 8%; and one-third of beneficiaries were unable to be reached after three consecutive attempts by the navigator. The navigation case outcome is unknown at this time for nearly one-third of those with a navigation case closed as a result of data quality issues. More specifically, once a navigation case is closed, the outcome should be resolved or unresolved. However, for nearly one-third of closed navigation cases, the outcome is still "in progress." The Innovation Center is working with bridge organizations to address the data quality issues.

Several bridge organization interviewees reported challenges with classifying HRSN resolution. A few described lacking a robust way to track referral outcomes, expressing concern that many cases labeled unresolved are really cases simply lost to follow-up. A few pointed to the challenge of ambiguous outcomes, such as when beneficiaries tell navigators at follow-up that they are "fine," "figured it out," or "got more money." Interviewees explained that these responses could indicate a beneficiary was declining navigation after opting in or had resolved their HRSN "through some other mechanism in [the beneficiary's] life," rather than because of the AHC referral. Without further information or the ability to capture these nuances in AHC reporting, these staff described having to use their best judgment to classify the case.

Exhibit 4-1. Navigation-Eligible Beneficiaries' Navigation Case Status and HRSN Outcome Among Those With a Navigation Case Closed

Most beneficiaries with a navigation case closed had not been connected to a CSP for any HRSNs and had no HRSNs resolved.



Source: AHC screening and navigation data, May 2018–December 2019.
Definitions: AHC = Accountable Health Communities; CSP = community service provider; HRSN = health-related social need.

4.2 Bridge Organizations Encountered a Variety of Challenges to Resolving HRSNs

To explore challenges to HRSN resolution, AHC stakeholders were asked to describe experiences with resolving beneficiaries' needs and connecting beneficiaries with CSPs. These challenges included lack of CSPs that provide the needed resource (e.g., housing vouchers, servicing home appliances), limited resources in rural settings (e.g., ride-hailing companies like Uber, poor infrastructure for public transportation), CSPs with limited business hours or restrictive access or availability, and beneficiaries' reluctance to access services (e.g., domestic violence shelters). These AHC stakeholders also said that community resources to address food insecurity, such as food banks, were readily available, making this need relatively easy to address. **Exhibit 4-2** shows examples of interviewees' experiences addressing HRSNs. These findings align with navigators' perceptions of insufficient community resources outlined in **Section 3.4.6**.

Exhibit 4-2. Examples of Interviewees' Experiences Addressing Core HRSNs

HRSN	Bridge Organization Experience
	Many interviewees said that food insecurity CSPs (e.g., food banks) were readily available, so food insecurity for AHC beneficiaries could be resolved more easily than other HRSNs.
	Several bridge organization, CDS, and navigation interviewees reported that few or limited CSPs provided affordable housing or housing vouchers or addressed certain housing-related needs (e.g., provide or fix an oven, mitigate pests). Several interviewees added that wait-lists for housing resources are common and last months to years. A few bridge organization interviewees also reported certain housing-related needs as costly and complex to address (e.g., replacing a roof).
	A few bridge organization interviewees said the communities they targeted: • had poor public transportation systems (e.g., fee-to-ride systems, limited reduced-fare passes, inconvenient or no infrastructure in some zip codes) and • faced restrictions on available services like Medicaid transportation ("[Medicaid] transportation resources will only provide transportation to medical appointments" and "you have to schedule a ride far in advance"). These bridge organization interviewees added that rural communities often lack access to alternative services like Uber, Uber Health, and Lyft.
	A few bridge organization interviewees noted that CSPs may be available to address utility-related needs but have restrictive participation requirements ("*Only a handful of people actually qualify for that. People are only able to be helped once every 365 days.*"). A few interviewees reported that utility-related needs were costly (e.g., many months' overdue utility bills) and thus harder to address than other HRSNs.
	Several bridge organization interviewees said CSPs that address intimate partner violence may be available and of high quality in some communities but limited in others. A few interviewees reported that even when CSPs were available, beneficiaries may be unwilling to access them.

Source: Interviews with AHC stakeholders.
Definitions: AHC = Accountable Health Communities; CDS = clinical delivery site; CSP = community service provider; HRSN = health-related social need.

Many interviewees described lack of transportation as a fundamental challenge to resolving beneficiaries' HRSNs. This finding may help explain why more than half of navigation-eligible beneficiaries have multiple HRSNs, including an overlap in needs for food, housing, and transportation, as reported in **Chapter 2**. At the most basic level, transportation access shapes whether participants can reach other core services.

> *… it's very tough, because of [patients] having transportation needs and other needs, it's hard to get them to their other needs without addressing that transportation need first. And that's not to say that the transportation need takes precedence over another type of need, but that [it] has to be in place in order to meet the other needs.*
>
> — CDS Staff Member

> *… if they have heart disease, high blood pressure, whatever it is. That would be helpful [to know]. We have no idea about any of that either. So these folks could be coming to a food pantry with a note from a doctor, saying "please help this person find low-sodium products." I don't know what it would say, but anything. There's none of that.*
>
> — CSP Staff Member

These interviewees explained that lack of transportation is a barrier to HRSN resolution, even in communities where other CSPs are plentiful. In the case of food insecurity, lack of transportation can mean a beneficiary is limited to the amount of food they can carry, which may be insufficient to resolve a household's food needs. Several interviewees added that access to Medicaid transportation does not help much because the service is only available for getting to and from medical appointments—not to and from CSPs offering nonmedical services.

In addition to lack of transportation, a few interviewees explained that lack of access to appropriate resources can also challenge HRSN resolution. For example, CSPs may lack culturally appropriate food options, and some beneficiaries are hesitant to use a CSP that they believe does not understand their culture or language. For some chronically ill beneficiaries, the challenge is not access to food but access to healthy and medically appropriate food. CSPs are challenged to address these barriers because, as a few interviewees explained, they get little relevant detail in the referral such as why the beneficiary is a high ED utilizer.

A few navigator and bridge organization interviewees also highlighted CSPs' eligibility criteria as a hurdle to beneficiary access and HRSN resolution. These interviewees explained that beneficiaries may have to provide some combination of birth certificate, proof of address, and Social Security card for all family members. In addition to not having the needed paperwork, beneficiaries may lack the money or means to acquire the needed identification.

> *… I think one big undiscovered issue that nobody really talks about is eligibility. You can send thousands and thousands of referrals, but if I have to have my birth certificate, my driver's license, and proof of address to get a box of food, I'm not eligible if I can't find that.*
>
> — Bridge Organization Staff Member

4.3 Strategies and Recommendations for Resolving HRSNs

To help beneficiaries who lack access to transportation, and therefore may not be able to access other CSPs, several interviewees described interventions to bring the resource (usually food) to beneficiaries. For example, one CSP used "70 community distribution partners" to set up "pop-up shops as food pantries" to "catch people where they already are," including outside a low-income apartment complex, senior center, and school or church parking lot. An AHC navigator described bringing food boxes to a hospital to distribute to beneficiaries while they were on-site for appointments. And, to work around transportation services that only allow travel to and from medical appointments, one bridge organization partnered with a local nonprofit that provides beneficiaries with a shuttle bus to transport them to CSP appointments.[10]

To anticipate challenges related to CSP eligibility requirements, a few CDS and navigator interviewees described contacting the CSP to identify questions beneficiaries would be asked to access the service. The interviewees then

[10] AHC funds cannot be used to provide transportation, food, utility assistance, or other goods and services related to an HRSN.

made sure a beneficiary was eligible before referring them to that CSP. One navigator explained that this approach helps build trust and reduce beneficiaries' frustration with the referral and HRSN resolution process.

Several bridge organization interviewees described improving stakeholders' communication about referrals through features of their online referral platforms. For example, some platforms offer closed-loop referral technology, which means CDSs can send and receive information about beneficiaries' referral status from CSPs. Using this information, CDS staff can learn if a beneficiary showed up at a CSP and received services and if a CSP accepted or declined a referral based on resource availability. These details guide CDSs' follow-up with beneficiaries and help staff pinpoint challenges to HRSN resolution. A few bridge organization interviewees cautioned that engaging CSPs in beneficiary tracking, including through technology, is not always realistic, however. Some CSPs rely on short-term volunteers and "may not have the resources to actually have someone there to reply back" or to provide regular training on a tracking system to new staff.

A few interviewees explained, however, that developing bidirectional communication between CSPs and CDSs is important to AHC stakeholder engagement, integration, and HRSN resolution. Such communication would include providing information to help CSPs address needs, such as a beneficiary being high risk because they have trouble managing diabetes and need certain foods; feedback for CDS staff that beneficiaries were served by a CSP to inform them if and how needs were resolved and to motivate them to continue referrals; and, longer term, information to CSPs about the impacts of their work on beneficiary health and health care costs and utilization.

4.3.1 Alignment Activities Focused More on AHC Implementation Than on Community Needs

In addition to the strategies to address HRSN resolution described above, the AHC Model requires that Alignment Track bridge organizations and their advisory boards use data to identify gaps in community services and address those gaps using quality improvement plans with clearly defined performance metrics. The original quality improvement plans and progress reports prepared by AHC leaders suggest that early quality improvement activities focused on beneficiary-level indicators of AHC Model implementation and impact rather on than community needs. Common performance metrics related to:

- Progress with AHC Model milestones monitored by CMS, including the number of beneficiaries screened, referred, and navigated and HRSN resolution.
- Operational measures associated with AHC Model implementation such as the number of beneficiaries who scheduled and completed clinical visits, rates of missing data from navigators, the timeliness of navigation, Web traffic to online portals, and advisory board engagement.
- Demographic characteristics of AHC Model participants.
- Beneficiary enrollment in the Supplemental Nutrition Assistance Program; Women, Infants, and Children program; and other government programs.
- Beneficiary satisfaction.
- AHC Model impacts, including the number of ED visits, hospitalizations, and readmissions avoided.

Barriers to quality improvement activities included turnover within the bridge organization and at CDSs, changes to data systems that necessitated monitoring errors and retraining staff, and poor quality or outdated data for quality improvement monitoring.

Initial interviews with advisory board members similarly suggested that progress in addressing gaps in community services had been limited. Bridge organizations originally engaged a diverse set of advisory board members to review data and offer suggestions on model implementation. Bridge organizations encountered challenges in

sustaining the engagement of these original board members because of turnover and competing demands on board members' time—some related to their deep involvement in other community initiatives.

4.4 Conclusions

Early findings suggest that resolving HRSNs is challenging. AHC serves a vulnerable population with multiple needs. However, HRSN resolution requires more than having enough CSP organizations or resources available for beneficiaries. It also requires that beneficiaries can access CSP organizations; meet eligibility requirements to use the services; and find resources that are medically, linguistically, and culturally appropriate. CDSs and CSPs must also have information about a beneficiary's referral status and the capacity to engage in two-way communication. A few AHC communities have worked to address these institutional and structural barriers by providing new services to physically connect beneficiaries with resources and by considering eligibility requirements when making referrals. AHC stakeholders also described systems to improve the exchange of information among stakeholders and the importance of this work for addressing beneficiary needs and helping staff understand and be motivated by the impacts of their work. Although Alignment Track activities were explicitly designed to identify and resolve community-level barriers to HRSN resolution, early evidence suggests that bridge organizations and their advisory boards have not made significant progress in this regard.

The low percentage of beneficiaries with resolved HRSNs is similar to other research findings. For instance, Saxton et al. (2007) reported that only 27% of the United Way 2-1-1 service users they interviewed reported their need as successfully resolved. Linkins et al. (2008) reported that grantees of the "Frequent Users of Health Services Initiative" were able to connect more than half of their homeless clients to temporary shelters but only 12% to permanent housing. Other findings show only modestly higher resolution rates. Hassan et al. (2015) found that, among urban adolescents and young adults using a Web-based tool to identify needs and provide a list of local agencies that could help address those needs, slightly less than 40% had contacted an agency, and slightly less than half (47%) of those reported their priority need completely or mostly resolved.

Future reports will help extend the currently available HRSN resolution findings by providing more detailed accounts of clinician and CSP involvement in and feedback about the AHC Model. Of key interest will be how bridge organizations address their challenges to HRSN resolution, particularly through alignment activities and electronic data exchange with CSPs and CDSs. The policy context, initiatives similar to the AHC models, and the COVID-19 pandemic could all affect HRSN resolution and will be explored in future reports. We will also further examine the possibility of determining whether those with resolved HRSNs were actually connected to a CSP before resolution.

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5. AHC Model Medicare FFS Beneficiaries' Health Care Use and Expenditures

This chapter presents trends in health care use and expenditures for Medicare FFS beneficiaries during the 3 baseline years before AHC screening and impacts during the first intervention year after screening. Examining baseline trends will enable us to assess several key assumptions of the AHC Model, and the impact analysis provides an early assessment of the effects of the model on beneficiary outcomes. These analyses:

1. Check whether beneficiaries randomized to the Assistance Track control group are well matched to the randomized Assistance Track intervention group and to the Alignment Track beneficiaries. (Beneficiaries in the Assistance Track control group serve as the comparison group for the Alignment Track impact analysis because all Alignment Track beneficiaries receive the Alignment Track intervention.)
2. Investigate whether the AHC eligibility criteria identify a consistently higher risk group particularly well suited for the AHC Model by tracking the navigation-eligible beneficiaries' health care expenditures and utilization trends during the 3 baseline years before screening.

3. Explore whether beneficiaries with a higher number of HRSNs are a higher risk group, as measured by higher costs and utilization.
4. Examine the preliminary impacts of navigation services on health care use and expenditures for the Medicare FFS beneficiaries in the Assistance Track intervention group.

The analyses focused on key measures that navigation is expected to affect directly: total expenditures per beneficiary per month (PBPM), inpatient admissions, admissions for ambulatory care–sensitive conditions (ACSCs), 30-day unplanned readmissions, ED visits, and PCP visits. It is hypothesized that resolving beneficiaries' HRSNs will result in improved beneficiary health status; more timely treatment and increased use of preventive care; fewer unnecessary inpatient and ACSC admissions, unplanned readmissions, and ED visits; and reduced overall expenditures. More information on identification of the study population, data sources, and definitions of outcome measures is provided in **Appendix F**.

To assess randomization success and whether AHC eligibility criteria identify higher risk beneficiaries, we compared descriptive statistics for three groups of Medicare FFS beneficiaries: (1) navigation-eligible beneficiaries in the Assistance Track randomized into the intervention group, (2) navigation-eligible beneficiaries in the Assistance Track randomized into the control group, and (3) navigation-eligible beneficiaries in the Alignment Track.

Key Takeaways and Insights

- Random assignment has been successful, as evidenced by remarkably similar utilization and cost patterns for all three navigation-eligible evaluation groups in the 3 baseline years.
- The AHC eligibility criteria—one or more HRSNs and two or more self-reported ED visits—identified higher need beneficiaries considered most likely to benefit from the AHC interventions.
- More HRSNs were associated with more ED visits but not necessarily higher health care expenditures.
- The Assistance Track intervention group had lower ED visit rates than the Assistance Track control group in the first year after screening.

To explore whether beneficiaries with a higher number of HRSNs have higher costs and utilization, we compared outcomes by number of HRSNs for all navigation-eligible beneficiaries in the Assistance and Alignment Tracks.

To examine the first-year impacts of navigation services on health care use and expenditures, we estimated differences in key outcomes between the Assistance Track intervention and control groups in the first intervention year after AHC screening.

Although the majority of navigation-eligible beneficiaries are enrolled in Medicaid only (74%), Medicaid claims data were not available for this report. Expenditures and utilization for Medicaid beneficiaries will be examined in future reports. The baseline prescreening summary statistics in this chapter are based on the 16,124 unique navigation-eligible Medicare FFS beneficiaries who were screened between May 1, 2018, and December 31, 2019. The post-screening impact analysis is based on the 4,625 navigation-eligible Medicare FFS beneficiaries in the Assistance Track who were screened on or before September 30, 2019, and had up to 12 months of navigation after AHC screening. Beneficiaries screened between October 1, 2019, and December 31, 2019, were excluded from the impact analysis to ensure that all beneficiaries had at least 3 months of post-screening claims data available.

5.1 Baseline Expenditures and Utilization Were Similar for Medicare FFS Beneficiaries in All Navigation-Eligible Groups

Achieving a good match between navigation-eligible Medicare FFS beneficiaries randomized to the Assistance Track control group and the Assistance and Alignment Track intervention groups is crucial to the AHC Model evaluation design. In this section, we confirm that at the beneficiary level the match is satisfactory by examining

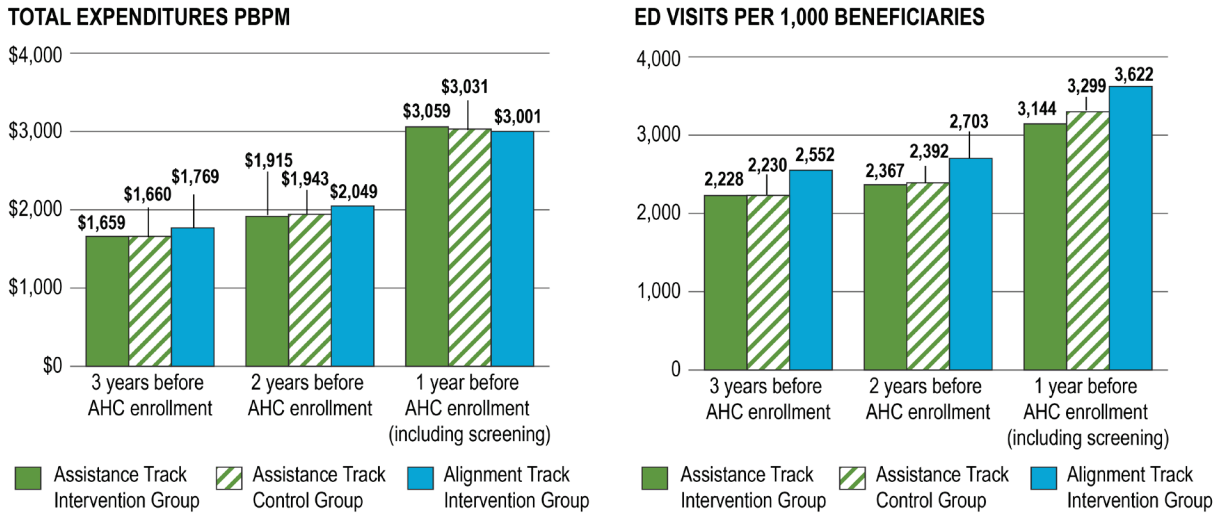
descriptive averages over the 3-year baseline period for total PBPM expenditures and ED visits for Medicare FFS beneficiaries in the three navigation-eligible evaluation groups.

Medicare expenditures and ED utilization were similar for Medicare FFS beneficiaries in the three navigation-eligible groups (**Exhibit 5-1**). In addition, we found similar patterns for beneficiary sociodemographic characteristics, inpatient admissions, admissions for ACSCs, PCP visits, and 30-day unplanned readmissions (**Appendix G**). This matching confirmed that randomization of navigation-eligible Medicare FFS beneficiaries in the Assistance Track produced balanced intervention and control groups for the Assistance Track. We did find some statistically significant differences in certain outcomes between the Assistance Track control group and the Alignment Track intervention group, and our planned impact analysis will take these differences into account by using propensity score analysis to improve balance between the two groups.

Average expenditures and utilization generally increased across all 3 baseline years before AHC screening, with a sharp increase in the year before AHC screening. The increase in the year before AHC screening is associated with the screening process and eligibility criteria for the AHC Model. As reported in **Chapter 3**, inpatient units and EDs were common settings for AHC screening. Because many participants were screened while using these services, expenditures and utilization would be expected to rise during the year before AHC screening, which included the month when the screening occurred. The requirement to have at least two self-reported ED visits during the 12 months before screening also drove higher expenditures and utilization in the year before AHC screening for navigation-eligible beneficiaries.

Exhibit 5-1. Baseline Expenditures and Utilization for Navigation-Eligible Medicare FFS Beneficiaries

All three navigation-eligible groups have similar baseline trends.



Notes:

Sample size: The number of beneficiaries for total expenditures PBPM and ED visits per 1,000 population is 5,324 for the Assistance Track intervention group, 2,084 for the Assistance Track control group, and 8,573 for the Alignment Track intervention group.

Averages were weighted using each beneficiary's eligibility fraction as a weight variable. The eligibility fraction is defined as the number of months during the year the beneficiary was eligible for Medicare FFS.

Total expenditures PBPM: Total annualized Medicare FFS payments/12 months/number of unique beneficiaries.

ED visit rate: (Total annualized ED visits and observation stays/number of unique beneficiaries) * 1,000.

Source: RTI analysis of Chronic Conditions Data Warehouse Medicare FFS claims, May 2015–December 2019.

Definitions: AHC = Accountable Health Communities; ED = emergency department; FFS = fee for service; PBPM = per beneficiary per month.

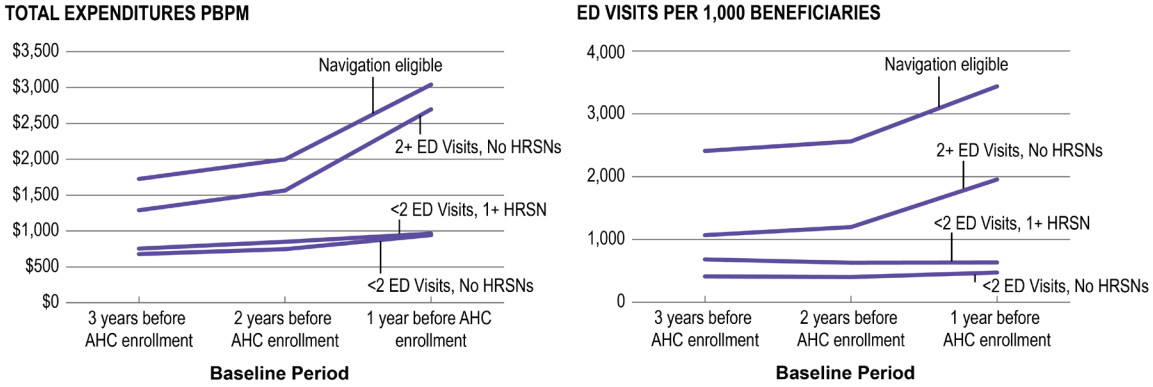
5.2 AHC Eligibility Criteria Successfully Identified a High-Cost, High-Use Target Population

The AHC Model assumes the navigation eligibility criteria target the model to a high-risk population. To examine this assumption, we used claims data to compare descriptive averages over the 3-year baseline period for total PBPM expenditures and ED visits for AHC-screened Medicare FFS beneficiaries (1) who met both the HRSN and self-reported ED visit AHC eligibility criteria, (2) who met only the criterion of self-reported ED visits, (3) who met only the criterion of having at least one HRSN, and (4) who met neither of the two AHC eligibility criteria. All other things being equal, those with higher total expenditures and ED visits have the greatest potential for showing cost and utilization reductions under the AHC Model.

Beneficiaries who met both the HRSN and self-reported ED visit eligibility criteria had consistently higher expenditures and ED utilization than beneficiaries who met only one criterion in the 3 years before AHC screening (**Exhibit 5-2**). Beneficiaries showed a similar pattern for inpatient admissions, admissions for ACSCs, PCP visits, and 30-day unplanned readmissions (**Appendix G**). The two eligibility criteria in combination successfully identified a beneficiary population with high cost and utilization throughout the entire baseline period, but neither criterion individually did so. Even 3 years before screening, navigation-eligible beneficiaries had more than twice as many ED visits and 30% higher expenditures than AHC-screened beneficiaries who self-reported at least two ED visits in the 12 months before screening but did not have an HRSN. Compared to AHC-screened beneficiaries who had at least one HRSN but did not have at least two self-reported ED visits in the 12 months before screening, navigation-eligible beneficiaries had more than 3 times as many ED visits and 2 times higher expenditures. Having at least one HRSN did not significantly increase expenditures and ED visits for those with fewer than two self-reported ED visits in the 12 months before screening.

Exhibit 5-2. Baseline Expenditures and ED Visit Use by AHC Eligibility Criteria for Medicare FFS Beneficiaries

HRSNs, in combination with high self-reported ED use, substantially elevated expenditures and utilization.



Notes:

Sample size: The number of beneficiaries for total expenditures and ED visits per 1,000 population was 16,124 for navigation-eligible beneficiaries; 28,913 for beneficiaries with two or more self-reported ED visits and no HRSNs; 16,478 for beneficiaries with fewer than two self-reported ED visits and one or more HRSN; and 75,922 for beneficiaries with fewer than two self-reported ED visits and no HRSNs.

Averages were weighted using each beneficiary's eligibility fraction as a weight variable. The eligibility fraction is defined as the number of months during the year the beneficiary was eligible for Medicare FFS.

Total expenditures PBPM: Total annualized Medicare FFS payments/12 months/number of unique beneficiaries.

ED visit rate: Total annualized ED visits and observation stays/number of unique beneficiaries * 1,000.

Beneficiaries with more HRSNs have higher baseline ED visits.

Source: RTI analysis of Chronic Conditions Data Warehouse Medicare FFS claims, May 2015–December 2019.

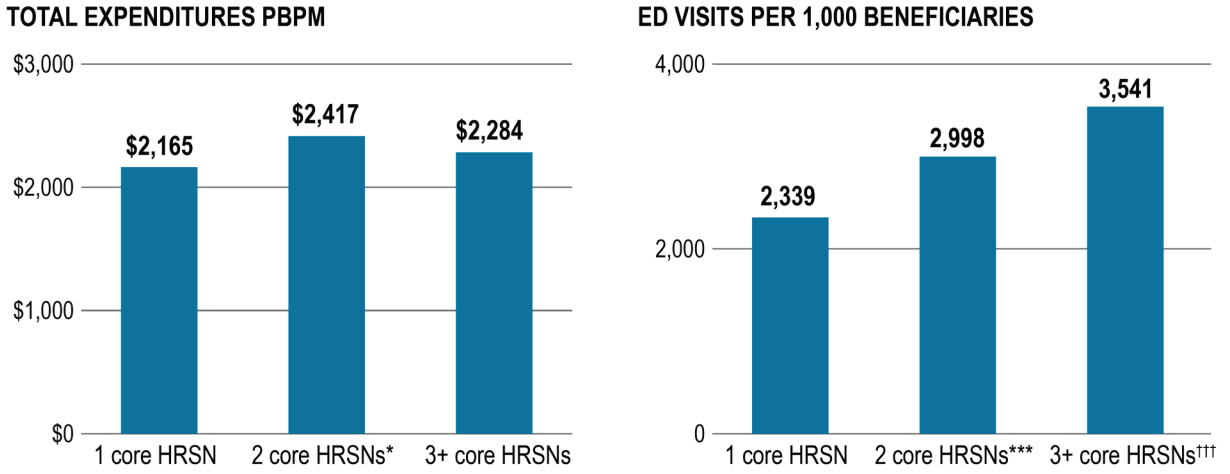
Definitions: AHC = Accountable Health Communities; ED = emergency department; FFS = fee for service; HRSN = health-related social need; PBPM = per beneficiary per month.

We explored whether Medicare FFS beneficiaries with multiple HRSNs might have higher baseline costs and utilization and greater potential for cost and utilization reductions than those with fewer HRSNs using claims data to compare baseline descriptive averages for total expenditures and ED visits for persons with one reported HRSN, two reported HRSNs, and three or more reported HRSNs. This analysis included all navigation-eligible beneficiaries in both the Assistance and Alignment Tracks.

During the 3 years before AHC screening, total expenditures PBPM and ED visit rates were significantly higher for navigation-eligible beneficiaries who reported two HRSNs than for those who reported one HRSN. Additionally, ED visit rates were significantly higher for navigation-eligible beneficiaries who reported three or more HRSNs than for those who reported two HRSNs (**Exhibit 5-3**). Despite having more ED visits, average expenditures PBPM was slightly lower for beneficiaries who reported three or more HRSNs than for those who reported two, although the difference was not statistically significant. Other utilization measures were similarly associated with the number of HRSNs (see **Appendix G**). Given differences in total expenditures and utilization, these findings highlight the importance of evaluating whether AHC impacts differ based on the number of HRSNs.

Exhibit 5-3. Baseline Expenditures and ED Visits by Number of HRSNs for Navigation-Eligible Medicare FFS Beneficiaries

A higher number of HRSNs was associated with higher ED visits, but the association was not consistent for expenditures.



Notes:

Sample size: The number of beneficiaries for total expenditures and ED visits per 1,000 population was 7,468 for beneficiaries with one core HRSN, 4,649 for beneficiaries with two core HRSNs, and 4,007 for beneficiaries with three or more core HRSNs.

Averages were weighted using each beneficiary's eligibility fraction as a weight variable. The eligibility fraction is defined as the number of months during the year the beneficiary was eligible for Medicare FFS.

Test comparing beneficiaries with two reported core HRSNs to beneficiaries with one reported core HRSN: * P-value < .10; ** P-value < .05; *** P-value < .01.

Test comparing beneficiaries with three or more reported core HRSNs to beneficiaries with two reported core HRSNs: † P-value < .10; †† P-value < .05; ††† P-value < .01.

Total expenditures PBPM: Total annualized Medicare FFS payments/12 months/number of unique beneficiaries.

ED visit rate: (Total annualized ED visits and observation stays/number of unique beneficiaries) * 1,000.

Source: RTI analysis of Chronic Conditions Data Warehouse Medicare FFS claims, May 2015–December 2019

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

5.3 Early Promising Model Effects on Reducing ED Utilization But No Effects Detected Yet for Other Key Outcomes

To estimate the impact of the AHC Assistance Track intervention on Medicare FFS beneficiaries, we compared regression-adjusted averages for expenditures and utilization measures across beneficiaries who were randomized to the intervention group and the control group during the first year after screening. This approach reflects the fact that we found that beneficiaries in the Assistance Track intervention group had similar baseline health care measures and similar sociodemographic characteristics as the Assistance Track control group (see **Appendix G**). This similarity suggests that the randomization was successful in producing two samples for which the only difference is that the intervention group received navigation services. Although the Assistance Track intervention and control groups were well balanced in all observed sociodemographic characteristics, we chose to conduct regression-adjusted analyses after initial explorations showed that adding regression controls increased the precision of the impact estimates (i.e., resulted in smaller standard errors and P-values). Moreover, regression-adjusted analyses are potentially more robust because it is possible that omitting covariates from the analysis could lead to a small amount of omitted variable bias, even though the differences in the sociodemographic characteristics were minimal. Additional detail on the statistical methods for this impact analysis is available in **Appendix F**.

Separate comparisons were made for each of the first four quarters after a beneficiary was screened under the AHC Model (e.g., the first quarter compared outcome measures calculated using data during the first 3 months following a beneficiary's screening), and quarter-specific impact estimates are presented in **Appendix G**. An overall impact estimate was calculated as a weighted average of these four quarter-specific estimates (**Exhibit 5-4**).

Exhibit 5-4. Impacts of Assistance Track Intervention on Expenditures and Utilization for Navigation-Eligible Medicare FFS Beneficiaries During First Year After Screening

Assistance Track intervention group beneficiaries had lower ED visit rates than Assistance Track control group beneficiaries after screening.

Outcome	Expected Direction of Change in Outcome	Difference Between Intervention and Control Groups (90% CI)	P-value
Total expenditures PBPM ($)	⩔	56 (−427, 539)	.85
Inpatient admissions/1,000 beneficiaries	⩔	−25 (−63, 13)	.27
ACSC admissions/1,000 beneficiaries	⩔	−4 (−22, 15)	.75
Unplanned readmissions/1,000 discharges	⩔	−2 (−75, 72)	.97
ED visits/1,000 beneficiaries	⩔	−78* (−136, −21)*	.02
PCP visits/1,000 beneficiaries	◇	−58 (−139, 23)	.24

Legend:

⩔ Decrease ◇ Could move in either direction

*Statistically significant change in expected direction

(continued)

Exhibit 5-4. Impacts of Assistance Track Intervention on Expenditures and Utilization for Navigation-Eligible Medicare FFS Beneficiaries During First Year After Screening (continued)

Notes:

Sample size: The total N for all beneficiary-level results was 4,625 unique beneficiaries. The total N for unplanned readmissions was 528 unique discharges.

Methods: A weighted maximum likelihood model was used to obtain estimates of the difference in expenditures or utilization for all outcomes except unplanned readmissions. Each beneficiary's eligibility fraction was used as a weight variable. The eligibility fraction is defined as the number of months during the year the beneficiary was eligible for Medicare FFS. Models were adjusted for person-level variables (age, gender, race/ethnicity, dual Medicare-Medicaid eligibility status, original reason for Medicare entitlement based on disability). The total expenditures PBPM ($) impact was estimated using a generalized linear model with a gamma error distribution and log link. The inpatient admission, ACSC admission, ED visit, and PCP visit impacts were estimated using a Poisson specification. The unplanned readmissions impact was estimated using a logistic specification.

Interpretation: A *negative* value for the regression-adjusted difference indicates that beneficiaries randomized to the Assistance Track intervention group had lower expenditures/utilization rates than beneficiaries randomized to the Assistance Track control group. A *positive* value for the regression-adjusted difference indicates that beneficiaries randomized to the Assistance Track intervention group had higher expenditures/utilization rates than beneficiaries randomized to the Assistance Track control group.

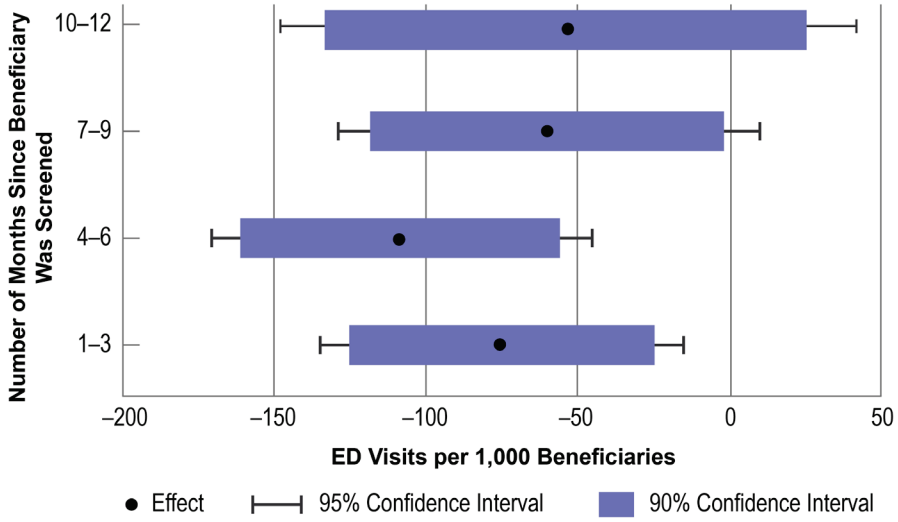
Source: Chronic Conditions Data Warehouse Medicare FFS claims, May 2015–December 2019.

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.

After the first year following screening, there was no statistically significant difference in total expenditures PBPM. The Assistance Track intervention group had 9% fewer ED visits than the Assistance Track control group (78 fewer ED visits per 1,000 beneficiaries, P = .02), but there were no statistically significant differences in any of the other utilization outcomes at the 10% level. The Assistance Track intervention group had significantly fewer ED visits than the Assistance Track control group in each of the first three quarters after a beneficiary was screened under the AHC Model, but not in the fourth quarter (**Exhibit 5-5**). It is too soon to tell whether the lack of significance in the fourth quarter reflects a weakening of the model impact or if it is attributable to the lower number of beneficiaries observed with four quarters of exposure to the model. The larger confidence interval for the fourth quarter estimate suggests the smaller number of beneficiaries is a partial contributor.

Exhibit 5-5. Impacts of Assistance Track Intervention on ED Visit Rates for Navigation-Eligible Medicare FFS Beneficiaries During the First Four Quarters After Screening

ED visit rates were significantly lower for the Assistance Track intervention group beneficiaries compared to control group beneficiaries in each of the first three quarters after screening.



Notes:
Sample size: The total N was 4,625 unique beneficiaries.
Methods: A weighted maximum likelihood model was used to obtain estimates of the difference in expenditures or utilization. Each beneficiary's eligibility fraction was used as a weight variable. The eligibility fraction is defined as the number of months during the year the beneficiary was eligible for Medicare FFS. Models were adjusted for person-level variables (age, gender, race/ethnicity, dual Medicare-Medicaid eligibility status, original reason for Medicare entitlement based on disability). The impacts were estimated using a Poisson specification.
Source: Chronic Conditions Data Warehouse Medicare FFS claims, May 2015–December 2019.
Definitions: ED = emergency department; FFS = fee for service.

5.4 Conclusions

The similarity in health care expenditures and utilization rates between the Assistance Track intervention and control groups over the 3 baseline (prescreening) years is notable. It suggests that randomization in the Alignment Track was successful, although these results are based on Medicare FFS data only, and it will be important to confirm with the Medicaid population, which represents a majority of the AHC population. There is also close comparability between the Assistance Track intervention and control groups in beneficiary characteristics such as age, gender, race/ethnicity, income, and education, though a large percentage of records are missing some of these characteristics making comparison across groups difficult. Both of these similarities confirm that the randomized design in the Assistance Track was successful in producing groups whose only major difference appears to be exposure to the AHC navigation intervention. This finding informed, and will continue to inform, our approach to modeling AHC impacts for the Assistance Track. Specifically, it supports the assumption that results are not affected by selection bias and that differences in post-screening expenditures and utilization outcomes are attributable to the AHC Model. The close similarity between the Assistance Track control group and the Alignment Track beneficiaries likewise provides encouraging evidence that at the beneficiary level the Assistance Track control group will likely serve as a reliable comparison group for future Alignment Track impact analyses.

Baseline analyses of Medicare FFS beneficiaries also highlighted that the eligibility criteria for the AHC Model appear to have successfully identified a high-need group. Navigation-eligible beneficiaries had higher expenditures

and utilization before their screening under the AHC Model than AHC-screened beneficiaries who did not meet the eligibility criteria. Examining the ED visit and HRSN requirements separately indicates that the ED visit requirement explains some of the relatively higher expenditures and utilization, as does having an HRSN, but it is the combination of ED use and HRSNs that identified the highest-use, highest-cost population. Additionally, although elevated use and expenditures during the year before screening are expected, and high utilization is often transitory, the navigation-eligible beneficiaries had persistently higher expenditures and utilization across all 3 baseline years before screening. All other things being equal, and assuming that the AHC Model can effectively affect outcomes, this navigation-eligible population has greater potential than lower risk populations to show reductions in expenditures and utilization.

The early impact analysis, which focused on Medicare FFS beneficiaries in the Assistance Track, shows reductions in the number of ED visits, although impacts on other outcomes were not statistically significant. The lack of statistical significance is attributable partially to the relatively few Medicare beneficiaries exposed to the Assistance Track intervention in the first year. As bridge organizations continue to screen beneficiaries into the AHC Model, more findings may become statistically significant. Future analyses will incorporate data for Medicaid beneficiaries, who comprise more than 70% of the navigation-eligible sample. Including these beneficiaries will improve the generalizability of the findings and our ability to detect impacts from the model. We will also expand our investigations to include a rigorous impact analysis for the Alignment Track.

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6. Conclusions

This First Evaluation Report covers the progress to date and impacts identified in the AHC Model's first 18 months of performance (May 2017 through December 2019). The initial evaluation findings indicate the AHC Model is making progress on the goal of identifying and assisting beneficiaries with HRSNs. The model is effectively identifying higher cost and utilization beneficiaries, and these beneficiaries are accepting navigation at much higher rates than anticipated. However, evidence of navigators' effectiveness in resolving HRSNs was low during early stages of implementation. Less than one-fifth of beneficiaries completing 12 months of navigation reportedly had connected with a CSP or resolved any of their HRSNs. We will continue analyzing screening and navigation data to track the reach of the model to the beneficiary population and to better understand navigation outcomes.

In interviews, some navigators attributed this lack of resolution to insufficient community resources, especially for housing and transportation, but this evidence is anecdotal and merits follow-up as these interventions mature. If there is insufficient community capacity to meet beneficiary HRSNs, navigation may have little effect on health care costs and utilization—not because it is ineffective, but because there is a break in the link between navigation and demonstration outcomes. If this is the case, Alignment Track activities to balance community service agencies' capacity with the community's service needs may be essential for the AHC Model to have a positive impact on health care expenditures and utilization. Improved tracking of navigation outcomes is also critical for evaluating the model's impact. The results to date, however, indicate that early quality improvement activities by Alignment Track bridge organizations focused on AHC Model implementation rather than identifying, measuring, or addressing gaps in community services.

Racial and ethnic minorities are overrepresented in the navigation-eligible population. Future reports will examine the intersection of race and ethnicity with the number and type of HRSNs and whether the model's effects on resolving HRSNs or reducing health care cost and utilization differ by race and ethnicity. Future reports also will seek to understand why bridge organizations that screened fewer beneficiaries tended to have higher percentages of navigation-eligible beneficiaries. This finding could be attributable to bridge organization characteristics, workforce capacity, or the external context of CDSs that may have important implications for scaling up the model. These implications will become more evident as we incorporate beneficiary and CSP perspectives on the AHC model in future reports.

Key Takeaways and Insights

- The model identified high-cost, high-use beneficiaries, many of whom were racial and ethnic minorities and had multiple HRSNs.
- Early results indicate high acceptance of navigation but limited evidence that HRSNs were resolved.
- Insufficient community resources, especially for housing and transportation, may be a factor undermining the resolution of needs.
- Navigation may not be able to demonstrate an effect on health care costs and utilization—not because it is ineffective, but because there may be insufficient community capacity to establish the link between navigation and outcomes.
- Tracking navigation and resolution outcomes was challenging, and improvements are necessary for understanding how and for whom AHC is effective.
- Training and staff retention strategies focused on strengthening the relationship between navigators and CSPs, techniques to engage and support beneficiaries, and activities to promote shared learning.
- Early reductions in ED visits are encouraging, but do not yet include Medicaid beneficiaries, who are the majority of those eligible for navigation.

The initial evaluation findings showed that a high percentage of beneficiaries have multiple needs. Sixty percent of beneficiaries who were navigation eligible had two or more needs, and almost 30% reported having three or more needs. Future reports will investigate how these needs may interact (e.g., if resolving a transportation need facilitates resolution of other HRSNs). Early analyses also showed Medicare beneficiaries with multiple needs had higher ED utilization before screening, although expenditures did not consistently increase with the number of needs. If this is also true for Medicaid beneficiaries, then effective navigation of beneficiaries with multiple needs may yield the greatest benefits for improved health and reductions in health care utilization and costs.

Navigating beneficiaries with multiple HRSNs requires additional time to understand their needs, develop an action plan, and make connections with appropriate community resources. Many navigators experience a tension between providing the high-quality, in-depth navigation required to meet these beneficiaries' complex needs and serving large caseloads due to higher than anticipated acceptance of navigation. In addition to the high caseloads, navigators face additional stress due to low salaries, unstable employment, and secondary trauma or compassion fatigue.

Bridge organizations have implemented a number of promising strategies to prepare navigators to meet the demands of their role such as streamlining the on-boarding process, communicating the impact of their work through success stories, and creating pipelines to sustainable positions. They have conducted field trips to CSPs; offered trainings in patient engagement, motivational interviewing, and trauma-informed care; and promoted peer-to-peer learning. Training on community services (e.g., eligibility, hours of operation), interpersonal violence, strategies to improve screening acceptance, and ways to ease the transition to navigation could be expanded. Future reports will examine further how bridge organizations are managing high caseloads, staff burnout, training, and retention.

Despite implementation difficulties, early findings show the AHC model holds promise for reducing ED use among Medicare FFS beneficiaries. Assistance Track FFS Medicare beneficiaries in the intervention group had 9% fewer ED visits than their counterparts in the control group during the first year following screening overall and significantly fewer ED visits than the control group in each of the first three quarters after a beneficiary was screened under the AHC Model. No significant differences between intervention group Assistance Track Medicare FFS beneficiaries and their controls were observed for total Medicare expenditures, overall inpatient admissions, admissions for conditions like uncontrolled diabetes or hypertension that could be avoided with appropriate ambulatory care, or primary care visits, which is partially attributable to the relatively few Medicare FFS beneficiaries exposed to the Assistance Track intervention in the first year.

Utilization and expenditure impact estimates do not include Medicaid beneficiaries, who comprise almost three-quarters of the navigation-eligible population. As Medicaid data through 2019 become available, we will expand the impact estimates to include Assistance Track Medicaid beneficiaries. Including Medicaid beneficiaries will improve our ability to detect model impacts.

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Appendix A: AHC Evaluation Research Questions Referenced in Chapter 1

- **Describe the communities served under the Accountable Health Communities (AHC) Model.**
  What are the key contextual characteristics (sociodemographic, health-related, social risk factors) of the communities where bridge organizations are located?
  How are these characteristics similar or different across communities?
- **Describe the health-related social need (HRSN) support system in AHC Model communities.**
  What types of community resources are available to address HRSNs in communities within which bridge organizations are located?
  How does the availability of and quality of community resources vary across bridge organizations?
- **Describe the bridge organizations participating in the AHC Model.**
  What are the key structural and organizational characteristics of bridge organizations, clinical delivery sites, and other key participants in the AHC Model?
  How do these characteristics vary across participants?
- **What other types of initiatives to address social determinants of health are underway in communities where AHC awardees are located that might impact the AHC Model or be important for understanding the impact of the AHC Model?**
- **For the purposes of addressing HRSNs, what types of multisector partnerships exist in areas where bridge organizations are located?**
  What is the degree of "community alignment" in these areas?
  How do these partnerships vary across communities?
- **Describe the beneficiaries served under the AHC Model**.
  What are their health-related social needs and risk statuses?
  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 characteristics of the clinical delivery sites and bridge organizations.**
  What are the differences on key outcomes, if any, between bridge organizations that stay in the AHC Model and those that exit or are terminated before the end of the AHC Model?
- **In general and specifically for the control group, what is usual care for addressing the core HRSNs targeted by the AHC Model?**
  Is there variation in approaches to usual care across clinical delivery sites and bridge organizations? How does usual care evolve over the course of the AHC Model implementation period?
- **How are bridge organizations and clinical delivery sites implementing the AHC interventions?**
  How does the planned approach and fidelity to the planned approach vary across bridge organizations and over time?

How do the contextual characteristics affect the implementation of the AHC Model?
How do structural, operational, and other key factors evolve over the course of model implementation?

- **How engaged are clinical delivery sites and other key stakeholders in implementing the AHC Model?**
  How does the varying degree of engagement affect the implementation of the AHC Model across bridge organizations and clinical delivery sites?
- **How do the types and amounts of community resources available affect the delivery of the AHC interventions?**
  How does the availability of community resources evolve over the course of model implementation?
- **Alignment Track only: How have bridge organizations operationalized community alignment?**
  What types of structural supports do bridge organizations use for community alignment?
  How are bridge organizations using data to align communities and serve beneficiaries with HRSNs?
  What are similarities and differences in bridge organizations' approach to community alignment?
- **Assistance Track only: Is randomization producing treatment and control groups that are balanced on observed characteristics (clinical characteristics, demographics, and others)?**
  Is there evidence to suggest that 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 response between sites that have effectively implemented the model and those that struggled?
- **What types of supports must bridge organizations and clinical delivery sites 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 to improve implementation of the AHC Model?
  Should these changes be considered for part of any model replications?
  What are the lessons learned?

Appendix B: AHC Evaluation Screening, Referral, and Navigation Data Source and Methods Referenced in Chapters 2, 3, and 4

This appendix 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 dually insured); 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, 2019. We allowed for 3-month 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 initiated. 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.

Analyses. All analyses using the AHC screening, referral, and navigation data were descriptive, primarily reporting numbers and percentages.

Exhibit B-1. Measures Using AHC Screening, Referral, and Navigation Data

Measure	Description
Beneficiary age[1]	Beneficiary age at screening
Beneficiary gender[1]	Beneficiary gender
Beneficiary insurance type[1]	Beneficiary insurance type (Medicare, Medicaid, or dually insured)
Beneficiary race/ethnicity[1]	Beneficiary race/ethnicity
Beneficiary education	Beneficiary highest education level
Core health-related social need (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

(continued)

Exhibit B-1. Measures Using AHC Screening, Referral, and Navigation Data (continued)

Measure	Description
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
Clinical delivery site (CDS) engagement	Percentage of CDSs by bridge organizations that have screened at least one beneficiary
Screening setting	Setting in which the screening took place (i.e., hospital inpatient or emergency department, primary care, behavior health, or other setting)
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 2 or more emergency department visits in the 12 months before their screening)
AHC-navigation Initiated	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
Connected to community service provider (CSP) for at least 1 HRSN	Percentage of beneficiaries with a closed navigation case who reported to the navigator that they had contact with a CSP for at least 1 of their HRSNs
At least 1 HRSN resolved	Percentage of beneficiaries with a closed navigation case who reported to the navigator that at least 1 of their HRSNs was resolved
Beneficiary opted out of navigation for all HRSNs	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 or unable to address HRSNs	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
Attempts to reach beneficiary unsuccessful	Percentage of beneficiaries with a closed navigation case who opted in for navigation services, but could not be reached on three consecutive attempts
HRSN outcome unknown	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

[1] Supplement to demographic data available in the Medicare and Medicaid enrollment files.

Appendix C: AHC Evaluation Community Data Sources and Methods Referenced in Chapter 2

Accountable Health Communities (AHC) bridge organizations' Geographic Target Areas (GTAs) consist mainly of one or more counties. Many county-level measures of health care resources, sociodemographics, and health indicators are publicly available from the Area Health Resources File, County Health Rankings, American Community Survey, National Center for Charitable Statistics, and Food Environment Atlas. Using data from these sources, we created a county-level dataset that includes estimates for measures that are most relevant for the evaluation. The dataset includes an indicator for the specific bridge organization that serves each county. We then aggregated the data for all counties in the GTA served by each bridge organization to create community-level measures for each bridge organization. Next, we aggregated the average values for community-level measures for all weighted by county population.

In **Chapter 2**, we used community-level measures to compare the prevalence of food and housing needs in the communities served by bridge organizations to the needs reported by AHC-screened and navigation-eligible beneficiaries. We also identified a subset of measures to describe the communities (counties) served by the AHC Model for this report (**Exhibit C-1**). These analyses included all counties served by an AHC bridge organization in part or in whole. We included measures related to the organizing framework listed in the dark gray shaded rows in **Exhibit C-1** and ensured that the selected measures had little or no missing data, varied across counties, were not highly skewed, and were fairly normally distributed. The topics in the organizing framework are the Centers for Disease Control and Prevention's Healthy People 2020 five key areas of social determinants: health and health care, economic stability, education, social and community context, and neighborhood and built environment.[1]

The community dataset includes the most recently available information for all measures; however, the period that each measure covers varies. For example, most of the measures in **Exhibit C-1** are from 2015 or 2016, but one measure (severe housing problems) uses data from 2010–2014.

[1] More information on Healthy People 2020 Social Determinants of Health areas can be found at https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health.

Exhibit C-1. Community Measures Included in This Report

Variable	Description	Data Source and Year
Health and Health Care		
Poor or fair health	Percentage of adult respondents who rate their health "fair" or "poor"	County Health Ranking (Behavioral Risk Factor Surveillance System), 2016
Uninsured	Percentage of the population under age 65 that has no health insurance coverage	County Health Rankings (U.S. Census Bureau's Small Area Health Insurance Estimates), 2015
Population 19–64 years of age with Medicaid coverage	Population with means-tested Medicaid coverage	American Community Survey (U.S. Census Bureau), 2013–2017
Economic Stability		
Poverty	Percentage of county residents with household income below the poverty threshold	Area Health Resources File (Census Small Area Income and Poverty Estimates), 2016
Unemployment	Percentage of the civilian labor force, age 16 or older, that is unemployed but seeking work	County Health Rankings (Bureau of Labor Statistics), 2016
Education		
High school graduation	Percentage of the 9th-grade cohort in public schools that graduates from high school in 4 years	County Health Rankings (EDFacts), 2014–2015
Social and Community Context		
Food insecurity	Percentage of the population who did not have access to a reliable source of food during the past year	County Health Rankings (U.S. Department of Agriculture Food Environment Atlas, Map the Meal Gap from Feeding America), 2015
White	Percentage of county population that was non-Hispanic white in 2016	County Health Rankings (American Community Survey, 2012–2016)
Hispanic	Percentage of county population that was Hispanic in 2016	County Health Rankings (American Community Survey, 2012–2016)
Non-Hispanic African American	Percentage of county population that was non-Hispanic African American in 2016	County Health Rankings (American Community Survey, 2012–2016)
Neighborhood and Built Environment		
Severe housing problems	Percentage of households with at least one or more of the following housing problems: (1) housing unit lacks complete kitchen facilities, (2) housing unit lacks complete plumbing facilities, (3) household is severely overcrowded, or (4) household is severely cost burdened. Severe overcrowding is defined as more than 1.5 persons per room. Severe cost burden is defined as monthly housing costs (including utilities) that exceed 50% of monthly income.	County Health Rankings (Comprehensive Housing Affordability Strategy data), 2010–2014

Appendix D: Qualitative Data Referenced in Chapters 3 and 4

Qualitative data explore how and why bridge organizations achieved program outcomes or were unable to do so. Qualitative data also reveal how key stakeholders see and experience implementation and how organizational and community factors affect implementation outcomes. Collectively, qualitative findings are central building blocks for future health care transformations and attempts to replicate and scale effective models.

The qualitative data in this report allow the Centers for Medicare & Medicaid Services (CMS) to explore the underlying context, implementation process, and factors shaping Accountable Health Communities (AHC) screening, referral, and navigation activities. These data also help explain how AHC implementation relates to usual care, the challenges to achieving health-related social need (HRSN) resolution, and the opportunities to achieve it. Qualitative insights further add richness and meaning to findings from other data collection approaches.

The evaluation team collected qualitative data from in-depth interviews with key informants, including AHC leaders responsible for overseeing implementation of the AHC evaluation and staff within bridge organizations and from partnering organizations. The team conducted in-depth interviews during two 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 leaders, AHC project directors or managers, clinical delivery site (CDS) staff, patient navigators, and advisory board members (if applicable). The team conducted these interviews by phone and in person as part of case study site visits from January through March 2020. The team also reviewed data from program documents detailing bridge organizations' implementation strategy and progress. This appendix describes the methods used to collect and analyze these qualitative data.

D.1 Planning Call Interviews

D.1.1 Purpose and Overview

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 interviews addressed the following:

- Each community's approach to the AHC Model and how it differs from usual care.
- How communities prepared for implementation.
- Partnerships associated with the AHC Model (including with CDSs, community service providers [CSPs], and advisory board members [Alignment Track only]).
- Beneficiary needs in AHC communities.
- Early lessons learned and unanticipated challenges.

The evaluation team also used the planning calls to share information about subsequent waves of data collection.

D.1.2 Protocol Development

All planning calls were conducted using an interview protocol prepared by the evaluation team's qualitative task leaders. The task leaders identified protocol topics using the evaluation research questions, the AHC Model evaluation constructs, and discussions with other evaluation staff and the Innovation Center (see **Exhibit D-1**). Interviewers tailored protocol questions for each participant using information from bridge organizations' program documents (see **Program Document Review**), including the applications submitted for AHC funding and quarterly progress reports submitted to the Innovation Center.

Exhibit D-1. Planning Call Protocol Topics

Interviewee and organizational background
Services offered by bridge organization
Participant role(s)
Process of implementation: Planning
Preparing for model launch[1]
Current partners[1]
Experiences with partner engagement (including CDSs, CSPs, advisory board members [Alignment Track]) [1]
Processes for data sharing
Formation of the advisory board/processes for making strategic decisions[1]
Intervention characteristics: Workflows, task standardization, and adaptability
Screening processes[1]
Referral processes[1]
Navigation processes[1]
External context
Relative ease of addressing core HRSNs[1]
Availability of community resources to address HRSNs
Gaps in community resources to address HRSNs
Other community initiatives to address HRSNs
Lessons learned
Advice/lessons learned for implementing the AHC Model[1]
Participation in and perceived usefulness of AHC learning events

[1] Priority topic.

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

D.1.3 Administration and Design

Two qualitative evaluation staff assigned to each bridge organization conducted the planning calls from June through August 2019. The evaluation team interviewed staff from all 30 bridge organizations that remained active in the model 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.

Call participants included AHC leaders responsible for overseeing implementation of the AHC evaluation—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.

All interviews lasted approximately 60 minutes and were conducted by phone. The calls were audio-recorded and professionally transcribed before analysis.

D.2 Case Study Site Visits and Virtual Key Informant Interviews

D.2.1 Purpose and Overview

Between January and March 2020, the evaluation team conducted case study site visits and virtual key informant phone interviews with participants from 29 bridge organizations active at the time of data collection. This number differs from the number of bridge organizations involved in the planning calls because one bridge organization terminated the model after the planning calls and before the site visits and virtual key informant interviews. Ten bridge organizations received a case study site visit to help inform future analyses focusing on the contextual and implementation factors that account for bridge organization performance. The remaining 19 bridge organizations received virtual key informant interviews.

All 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.

The following sections outline the data collection and analysis processes for these interviews.

D.2.2 Protocol Development

All case study and key informant interviews used standard interview protocols prepared by qualitative and subject matter experts on the evaluation team (see **Exhibit D-2**). The team identified protocol topics using the evaluation research questions, the AHC Model Evaluation Framework constructs, and discussions with the Innovation Center. Interviewers tailored participant protocols using information from legacy interview data (see **Planning Call Interviews**) and bridge organizations' program documents, including the applications submitted for AHC funding and quarterly progress reports submitted to the Innovation Center (see **Program Document Review**).

Exhibit D-2. AHC Evaluation Framework Constructs by Key Informant Interview Protocol

AHC Evaluation Framework Domain/Construct	Bridge Organization	Advisory Board	CDS Leadership	Frontline CDS Staff	Frontline PN	PN Supervisor	CSP Staff
Intervention characteristics							
Adaptability	•	•		•	•		
Workflows				•	•	•	•
Coordination			•	•	•	•	
Task standardization			•	•	•		
History	•	•		•	•	•	•
Usual care			•	•	•	•	
External context							
Partnerships and networks	•	•					
External pressure			•				
Policy and political environment	•						
Payment models	•						
State policies	•						
AHC-like initiatives	•	•				•	•
Technological environment	•						
Data exchange			•	•			
Socioeconomic environment							•
Patient needs and resources							•
Community resources and infrastructure	•		•	•	•	•	•
Geographic characteristics	•		•				•
Inner setting							
Structural characteristics	•						
Culture	•						
Implementation climate		•					
Relative priority				•			
Organizational incentives			•				

(continued)

Exhibit D-2. AHC Evaluation Framework Constructs by Key Informant Interview Protocol (continued)

AHC Evaluation Framework Domain/Construct	Bridge Organization	Advisory Board	CDS Leadership	Frontline CDS Staff	Frontline PN	PN Supervisor	CSP Staff
Readiness for implementation	●			●			●
Leadership commitment	●		●	●	●		
Staff commitment				●			
Staff time		●	●	●	●		●
Continuity		●	●	●			●
Patient centeredness					●		●
Characteristics of patient navigators and teams							
Knowledge and skills	●	●			●	●	●
Role	●	●	●	●	●	●	●
Team and network characteristics		●	●	●			
Teams, networks, and communications	●	●	●	●	●	●	●
Process of implementation							
Planning			●				
Gap analysis	●	●					
Priority assessment	●	●					
Acquiring and allocating resources	●	●		●	●		●
Governance	●	●					●
Implementation roles	●		●	●	●	●	●
Champions	●						
Integrators	●						
Engaging stakeholders and partners	●	●	●		●		●
Sustaining a workforce			●	●		●	
Reflecting and evaluating	●						
Measurement capability and data availability	●						
Continuous quality improvement implementation	●						

(continued)

Exhibit D-2. AHC Evaluation Framework Constructs by Key Informant Interview Protocol (continued)

AHC Evaluation Framework Domain/Construct	Bridge Organization	Advisory Board	CDS Leadership	Frontline CDS Staff	Frontline PN	PN Supervisor	CSP Staff
Implementation outcomes							
Population reach	•						
Dose	•						
Beneficiary acceptability					•		•
Alignment		•					
Community capacity			•	•			•
Sustainability							•
Other							
Overall successes, challenges, and strategies to address challenges	•	•	•	•	•	•	
Recommendations for improving the AHC Model	•	•	•	•	•	•	

Definitions: AHC = Accountable Health Communities; CDS = clinical delivery site; CSP = Community Service Provider; PN = patient navigator.

D.2.3 Design

The evaluation team used a case study design to guide qualitative data collection. The 10 bridge organizations selected for the case study and site visits included 4 Assistance Track bridge organizations and 6 Alignment Track bridge organizations, which were selected on the basis of evidence of high or low implementation effectiveness at the time of selection. 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.[a] Bridge organizations not selected for the case study were targeted for the key informant interviews by phone.

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 leaders, 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 individual or group interviews by phone with a mix of bridge organization leads, AHC project directors or managers, CDS staff, advisory board

[a] The Innovation Center monitors the performance of bridge organizations and puts bridge organizations on a performance plan if they are not meeting expectations.

members (if applicable), and CSP partners. Evaluation team members were encouraged to target potential participants who had been highly engaged in the AHC Model, represented a variety of CDS types, and addressed a variety of HRSNs, regardless of whether these bridge organizations were selected for the case study.

Because of the COVID-19 pandemic, the evaluation team conducted fewer interviews than originally planned, particularly among 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 in the process of being scheduled. As many interview candidates became difficult to reach or 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.

Exhibit D-3 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-3. Winter/Spring 2020 Key Informant Interviews by Stakeholder 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	6	14	**20**
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	2	9	**11**
Other	1	0	**1**
Patient navigators	6	6	**12**
CSP staff	8	27	**35**
Food security	2	9	**11**
Housing	1	4	**5**
Interpersonal violence/safety	0	1	**1**

(continued)

Exhibit D-3. Winter/Spring 2020 Key Informant Interviews by Stakeholder and Track (continued)

Stakeholder Type	Assistance Track	Alignment Track	Total
Transportation	1	0	**1**
Utilities	0	2	**2**
Other	4	11	**15**
Total	**39**	**82**	**117**

Notes: CSP counts by need sum to greater than the total because some CSPs address multiple core HRSNs. The "other" participant within the screeners and CDS category was a manager responsible for staff oversight. The "other" participants under the CSP staff category come 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.

Definitions: AHC = Accountable Health Communities; CDS = clinical delivery site; CSP = community service provider; HRSN = health-related social need; NA = not available.

D.2.4 Administration

Two-person teams of qualitative evaluation staff conducted all interviews. Each team was assigned to two to four bridge organizations. Staff conducted the in-person case study interviews at a location of the participant's choosing, typically at their place of business or at a partner's place of business. All remaining interviews were conducted by phone. 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.

D.3 Interview Data Analysis

We analyzed interview data collected from both waves of data collection using a qualitative codebook aligned to the AHC evaluation research questions, AHC Evaluation Framework constructs, and the interview protocols. Experienced qualitative analysts trained a team of six RTI and six Abt staff 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 sections of the outline for this report (**Exhibit D-4**).

Exhibit D-4. Qualitative Codes by Report Section

Code	Code Definition	Report Section
Communities served: Usual care for core HRSNs	Text about usual care for addressing core HRSNs in the clinical setting (e.g., CDS, bridge organization). Includes activities or processes in place before AHC and may or may not include screening, referral, and navigation activities.	3.1
Implementation	Description of AHC implementation, including the following: • Fidelity to planned intervention. • Changes over time, including changes and customizations to reflect the population. • Factors shaping implementation. • Activities to implement AHC. • Overall successes, challenges, lessons learned that are not specific to screening, navigation, or referral to CSP. • Project highlights or the project's biggest success. • How AHC could be improved. • Progress meeting AHC milestones. • Additional resources to fund AHC.	3.2
Implementation: Screening	Descriptions of screening that are not related to the screening subcodes below.	3.2
Implementation: Screening workflow	Description of how AHC organizations conduct AHC screening; e.g.: • Identification and screening of patients. • Standardization or adaptation to different situations or clients. • Changes over time, including to meet milestones. • Integration with existing workflows. • Work and communication across staff and with other partners related to screening. • Discussions about the screening tool and its use. • Location for screening. • Modality (i.e., virtual vs. in-person screening).	3.2
Implementation: Screening workforce	Description of the staff involved in AHC screening; e.g.: • Roles, titles, degrees, certifications. • Training, position requirements. • Number of involved staff. • Departmental affiliation. • Supervision/management. • Challenges or difficulties faced in their role.	3.4
Implementation: Engagement in screening	Descriptions of factors that influence beneficiary engagement in screening and strategies used (or planned) to increase beneficiary participation in screening	3.2

(continued)

Exhibit D-4. Qualitative Codes by Report Section (continued)

Code	Code Definition	Report Section
Implementation: Referral	Descriptions of how beneficiaries receive referrals that are not related to the referral subcodes.	3.3
Implementation: Referral workflow	Description of how AHC organizations conduct AHC referrals. Includes: • Steps to inventory local community services for patients (creation of the Community Resource Inventory). • Processes to create community referral summary. • How staff connect with patients and give/review referral summary with patients. • Standardized activities; adaptations to different situations or clients. • Process to coordinate and communicate with other staff, AHC partners. • Changes over time. • Integration with existing workflows. • Type of referrals—virtual or in person.	3.3
Implementation: Referral workforce	Description of the staff involved in AHC referral process; e.g.: • Roles, titles, degrees, certifications. • Training, position requirements. • Number of involved staff. • Departmental affiliation.	3.3
Implementation: Navigation	Descriptions of navigation that are not related to the navigation subcodes below.	3.4
Implementation: Navigation workflow	Description of how AHC organizations conduct AHC navigation; e.g.: • Coordination and communication with patients, other staff, AHC partners. • Documenting encounters with beneficiaries, including obtaining and exchanging navigation data. • In-depth personal interview. • Person-centered action plan. • Follow-up services. • Caseload management. • Standardization or adaptations to different situations or clients. • Changes over time. • Integration with existing workflows. • Location for navigation. • Descriptions of ways of providing navigation that are more effective or less effective.	3.4
Implementation: Navigation workforce	Descriptions of the staff involved in AHC navigation activities; e.g.: • Roles, titles, degrees, certifications. • Training and position requirements. • Number of involved staff. • Departmental affiliation. • Staff structure/supervision. • Challenges or difficulties patient navigators face in their role.	3.4

(continued)

Exhibit D-4. Qualitative Codes by Report Section (continued)

Code	Code Definition	Report Section
Implementation: Engagement in navigation	Descriptions of factors that influence beneficiary engagement in navigation and the strategies used (or planned) to increase beneficiary participation and get them to "opt in."	3.3
Implementation: HRSN resolution	Description of experiences with resolving patients' HRSNs; e.g.: • Factors that shape whether needs are addressed or remain unaddressed. • How stakeholders define HRSN resolution or success. • Strategies to assist patients when HRSNs cannot be addressed or resolved. • Descriptions of which HRSNs are easier or harder to address and why. • Additional challenges and success.	4.2, 4.3

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

Qualitative 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 outline. The analysts reviewed data over several months, meeting with one another and the original interviewers to share and refine early findings. The analysts then drafted report sections after considering feedback from their peers/interviewers and from senior evaluation leaders.

The report identifies themes by the number of bridge organizations with an interviewee who reported about the experience: a few (less than 10%, or 2 or 3), several (between 10% and less than 25%, or 4 to 7), many (between 25% and 50%, or 8 to 15), or most (over 50%, or more than 15).

D.4 Program Document Review

Qualitative 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-5**). Interviewers used program documents to prepare for the interviews, deepen their understanding of interview data, and prepare visuals for the report.

Exhibit D-5. 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

(continued)

Exhibit D-5. Program Documents (continued)

Document Type	Content	Frequency of Production	Track
Quality improvement plans	Processes and measures used to assess quality; strategies for modifying implementation on the basis of quality improvement 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.

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Appendix E: Organizational Structure Survey Methods and Selected Results Referenced in Chapter 3

This appendix describes the methods for the Organizational Structure Survey of bridge organizations. We describe the survey respondents, sample size, instrument development, survey administration, data management, and results used in this report.

E.1 Survey Methods

E.1.1 Sample

We surveyed project leaders from all 29 bridge organizations participating in the Accountable Health Communities (AHC) Model as of October 2019. The AHC Model primary contact from each bridge organization was invited to complete the survey. To identify the primary bridge organization contacts, we used a list of key staff and their contact information supplemented by a list of bridge organization contacts. The bridge organizations sent the former list in late 2019, and Innovation Center Project Officers sent the latter in April 2020. One contact per each of the 29 bridges organizations completed the survey.

E.1.2 Instrument Development

The instrument 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). In addition, the instrument includes questions related to engagement with community organizations and the goals, activities, leadership, and communication style of each bridge organization's advisory board. The COVID-19 pandemic was at its initial peak around the time we launched the survey (April 20, 2020). We added an item about the effect COVID-19 was having on the organization's ability to implement the AHC Model. The program data team, the qualitative team, and the Innovation Center reviewed and informed all items. One overarching goal was to keep the survey brief to increase response rates. The final instrument consists of 51 items; 5 of those items were used for this report.

E.1.3 Survey Administration

The Web-based survey was administered on RTI's Voxco platform. We developed a control system database that securely stores sample contact information, manages e-mail communications, and manages the survey data capture process. The control system manages metadata to track survey progress and generates status reports. The Voxco platform and the control system operate within RTI's enhanced security network to ensure secure data collection and storage.

Before survey launch, RTI performed a complete system review to ensure the e-mail communications were functioning as intended, the survey instrument was 508 compliant, the survey instrument accurately displayed questions and captured survey responses, and the system managed inflows and outflows of information as

designed. The review also included quality control checks of metadata that track all emails sent and all surveys completed.

The survey was launched in April 2020 and remained open for responses through June 2020. Before the launch of the survey, we sent an advance e-mail message signed by an Innovation Center representative to sample members, alerting them to the forthcoming survey invitation and encouraging them to participate. After sending an invitation e-mail, we sent follow-up e-mail messages to sample members who had not responded to the survey. We sent the first reminder approximately 1 week after the invitation. We sent two additional reminders to nonrespondents at 1-week intervals. Each follow-up reminder message included the unique Web link. The final reminder was signed by an Innovation Center representative and specified the deadline for completing the survey. Innovation Center AHC Project Officers prompted the small number of bridge organization contacts who had not responded after the final reminder to complete the survey.

We designated a toll-free help desk number for this survey and included it in all communications and as a footer in the Web survey instrument, in case the respondent had any questions. Three RTI staff members monitored the survey e-mail account to respond to questions and track and follow up with any undeliverable emails.

E.2 Results

For the bridge organization data used in this report, we calculated descriptive statistics for each variable in the survey. **Exhibits E-1** through **E-3** include the results for the questions used in this report.

Exhibit E-1. Number of AHC Staff at Bridge Organization

Questions	n	Min	Median	Max	SD
How many staff does your bridge organization employ who are paid, in whole or in part, with AHC funding?	29	2	8	32	1.43
How many people in your community conduct screenings for HRSNs for the AHC program?	29	0	25	900	33.16
How many people in your community are patient navigators for the AHC program?	29	0	6	150	5.37

Definitions: AHC = Accountable Health Communities; HRSN = health-related social need; SD = standard deviation.

Exhibit E-2. Types of Screening Staff at Bridge Organization

8. What types of staff conduct screenings at your organization?[1]	%
Paid staff whose primary role is conducting AHC screenings; they may have additional duties	72.4
Unpaid volunteer staff (e.g., general volunteers, students, unpaid interns) whose primary role is conducting AHC screenings; they may have additional duties	48.3
Front desk or administrative staff	58.6
Medical care providers who are not paid using AHC funds	37.9
Social assistance providers (e.g., social workers, community health workers) who are not paid using AHC funds	48.3
Other	17.2

[1] Multiple answers allowed.
Notes: The percentages are based on 29 bridge organizations.
Definitions: AHC = Accountable Health Communities.

Exhibit E-3. Types of Navigation Staff at Bridge Organization

11. What types of staff provide navigation for HRSNs within your AHC community?[1]	%
Paid staff whose primary role is AHC patient navigation	79.3
Unpaid volunteer staff (e.g., general volunteers, students, unpaid interns) whose primary role is AHC patient navigation	13.8
Front desk or administrative staff	3.4
Medical care providers who are not paid using AHC funds	10.3
Social assistance providers (e.g., social workers, community health workers) who are not paid using AHC funds	31.0
Other	6.9

[1] Multiple answers allowed.
Notes: The percentages are based on 29 bridge organizations.
Definitions: AHC = Accountable Health Communities; HRSN = health-related social need.

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Appendix F: Medicare FFS Claims Data Sources and Methods Referenced in Chapter 5

To estimate the effect of the AHC Model on a broad variety of outcomes, RTI will conduct quantitative analyses using several secondary data sources, including Medicare and Medicaid claims data. For this report, we present baseline descriptive analyses for Medicare fee-for-service (FFS) beneficiaries for six key outcomes: total Medicare FFS expenditures, inpatient admissions per 1,000 beneficiaries, ambulatory care sensitive condition (ACSC) admissions per 1,000 beneficiaries, unplanned readmissions per 1,000 discharges, emergency department (ED) visits per 1,000 beneficiaries, and primary care provider (PCP) visits per 1,000 beneficiaries. The 3-year baseline period included the month during which each beneficiary was screened and the 35 months before they were screened. We also present an impact analysis for these same outcomes for Medicare FFS beneficiaries in the Assistance Track using up to 1 year of post-screening data. Future reports will incorporate analyses for Medicaid beneficiaries in the Assistance Track. In addition, we will conduct impact analyses for the Alignment Track when enrollment increases and there is more statistical power. This appendix details the methods used for the analysis presented in Chapter 5 of this report.

F.1 Data Sources

AHC Screening, **Referral**, **and Navigation Data—**We used the AHC screening, referral, and navigation data (see **Appendix B**) to identify beneficiaries by group: screened (both navigation eligible and ineligible), Assistance Track intervention group, Assistance Track control group, and Alignment Track intervention group. We used the screened date to identify when beneficiaries entered the sample. We also used the Medicare ID variables, along with demographic characteristics, to link the AHC screening, referral, and navigation data to the Medicare data as described below.

Medicare Data—We used Medicare Master Beneficiary Summary Files (MBSF) and FFS claims data provided by the Centers for Medicare & Medicaid Services in the Chronic Conditions Data Warehouse (CCW) to derive expenditure and utilization outcomes for Medicare FFS beneficiaries in the AHC Model, including beneficiaries screened but not eligible for navigation, beneficiaries in the Assistance Track intervention and control groups, and beneficiaries in the Alignment Track intervention group. The Medicare data in the CCW include (1) denominator information, such as whether the beneficiary is alive in each month during the study period; (2) enrollment information, such as whether the beneficiary is enrolled in Medicare in each month during the study period; and (3) the claims experience for each beneficiary. We used both Part A and Part B claims to create claims-based outcome measures. For this report, we used Medicare data from January 2015 through December 2019.

F.2 Data Linkage

We linked the AHC screening, referral, and navigation data to the Medicare data to identify Medicare beneficiaries who were participating in the AHC Model in the Medicare MBSF and claims files. The AHC screening, referral, and navigation data include 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

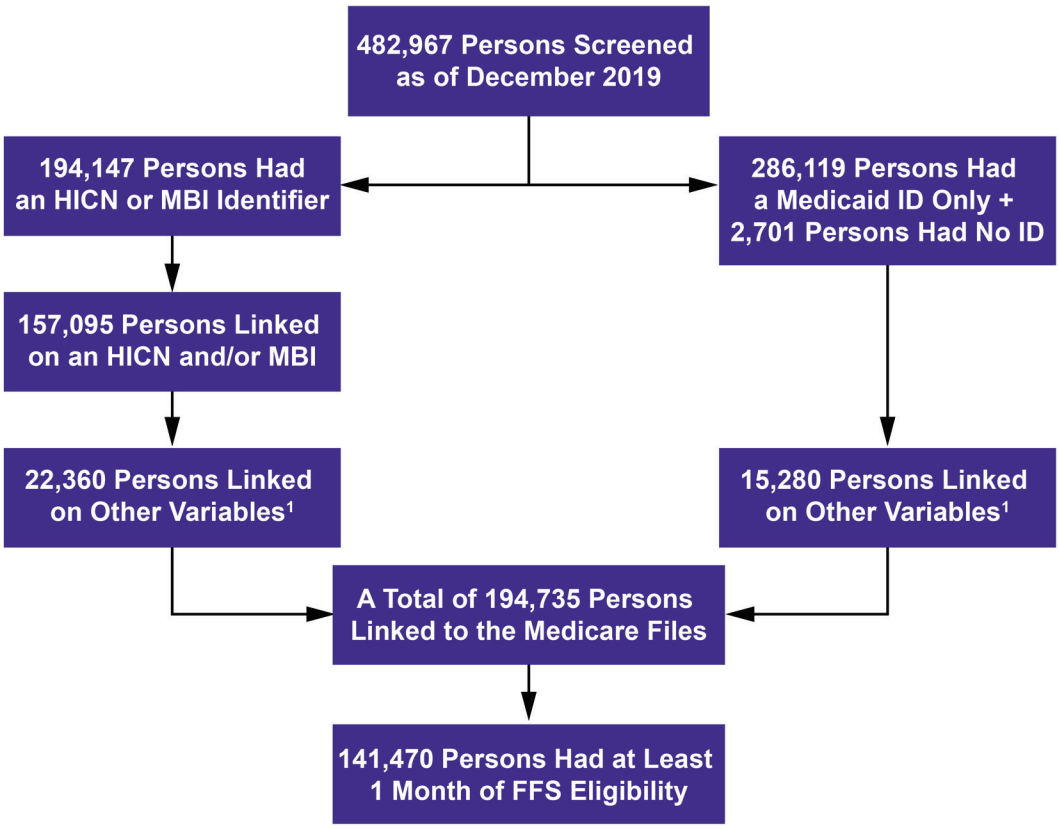
included in the screening, referral, and navigation data, so we linked the Medicare files with screening, referral, and navigation data files in three steps:

1. We linked beneficiaries who either had an HICN or an MBI in AHC screening, referral, and navigation data to an HICN- or MBI-to-BENE_ID crosswalk file.
2. We 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, referral, and navigation data to a file that crosswalks beneficiary name and address with BENE_ID. We required an exact match on six variables: first initial of first name, last name, gender, zip code, state, and birth date.
3. After obtaining BENE_ID, we linked the AHC screening, referral, and navigation data to Medicare claims using BENE_ID.

Exhibit F-1 illustrates the linkage process. As of December 2019, the screened population in the AHC screening, referral, and navigation data file included 482,967 unduplicated persons. There were 286,119 persons with a Medicaid ID only; 194,147 persons in the AHC screening, referral, and navigation data who had an HICN or an MBI; and 2,701 persons who did not have any ID in the AHC screening, referral, and navigation data. For the small number of people with both an HICN and an MBI, we tried to match on both in case one is invalid but the other is not. Overall, 194,735 people in the AHC screening, referral, and navigation data successfully linked to the Medicare files in the CCW. This number is larger than the total number of persons with an HICN or an MBI because some persons did not have either of these IDs, but matched name, gender, zip code, state, and birth date. We linked 157,095 of persons who had one of the two Medicare IDs using HICN-BENE_ID and/or MBI-BENE_ID crosswalk files. Many Medicare IDs appear to be invalid in the screening, referral, and navigation data. Out of those whose ID did not match to these crosswalk files and those in the screening, referral, and navigation data who only had a Medicaid ID, we were able to link an additional 37,640 persons using first initial of first name, last name, gender, date of birth, and zip code. Collectively, we linked about 92% of people with an HICN/MBI in the screening, referral, and navigation data to the Medicare files and an additional 15,280 people with a Medicaid ID only or who had no ID in the AHC screening, referral, and navigation data.

We also assessed how many persons were fully eligible for the study sample in at least 1 month during the 3-year baseline period or at least 1 month during the 1-year post-screening period, which means that they were alive, had FFS Medicare, and had Part A and B entitlement. A total of 141,470 people met one or both of these criteria. This is the sample analyzed using Medicare FFS data. Although 53,265 people did not have at least 1 month where they were fully eligible, 42,344 of those people were always in Medicare Advantage.

Exhibit F-1. Linking Persons From the AHC Screening, Referral, and Navigation Files to Medicare Claims and Enrollment Data in the CCW



[1] Other variables used to link on are last name, the first initial of first name, gender, date of birth, zip code, and state.

Source: RTI analysis of AHC screening, referral, and navigation data, May 2018–December 2019, and Chronic Conditions Data Warehouse Medicare fee-for-service claims, May 2015–December 2019.

Definitions: AHC = Accountable Health Communities; CCW = Chronic Conditions Data Warehouse; FFS = fee for service; HICN = Health Insurance Claim Number; MBI = Medicare Beneficiary Identifier.

F.3 Measure Specifications

For this report, we present baseline descriptive estimates and impact analyses for Medicare FFS beneficiaries for six key outcomes: total expenditures, inpatient admissions, ACSC admissions, unplanned readmissions, ED visits, and PCP visits. We calculated total expenditures for each of 3 baseline years. Inpatient admissions, ACSC admissions, ED visits, and PCP visits are reported as the number of events in each baseline year per 1,000 beneficiaries. Unplanned readmissions 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 Assistance Track impact analysis, we also calculated quarterly totals and rates for these measures for each of the first four quarters after each beneficiary was screened under the AHC Model. Because of rolling entry at the beneficiary level, not all beneficiaries have a full four quarters of data observed after they were screened.

Measures only included eligible beneficiaries during a given baseline year or post-enrollment quarter. This means that some beneficiaries are not observed in each of the 3 baseline years or four post-enrollment quarters. Overall, we observed 113,884 screened beneficiaries in the baseline year 3 years before screening, 118,795 beneficiaries in the baseline year 2 years before screening, and 126,011 beneficiaries in the baseline year when screening occurred. When we limit our observations to beneficiaries who were eligible for the AHC Model and who were in the Assistance Track, we observed 4,426 in the first quarter after screening, 4,178 in the second quarter after screening, 3,114 in the third quarter after screening, and 2,140 in the fourth quarter after screening. Because some individuals were not alive, in FFS Medicare, and entitled to Medicare Parts A and B throughout each year, 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 average outcomes, the eligibility fractions downweight observations for beneficiaries who are not eligible for the full year/quarter because there is greater uncertainty associated with having less than a full year or quarter of data, so the observations exert less influence on the analyses.

- **Total Medicare FFS expenditures:** We defined expenditures as payments made by Medicare FFS. This represents overall net payment amounts from all inpatient and outpatient (facility and professional) claims (i.e., Part A and Part B); this excludes beneficiary cost sharing and pharmacy component expenditures (i.e., Part D). We calculated expenditures on a per-beneficiary per-month (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.
- **Number of inpatient admissions:** This is a count of admissions to an acute care hospital reported in the inpatient file for the year per beneficiary or for the quarter per beneficiary. We identified all hospital admissions in which the last four digits of the provider values were 0001 through 0879 (acute inpatient) or 1300 through 1399 (critical access hospitals). We annualized/quarterized counts of Medicare 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 binary variable that is equal to 1 if the beneficiary had at least one discharge 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.

- **Unplanned readmission within 30 days of hospital discharge:** 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). The measure is an indicator that 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 an index admission if the beneficiary was enrolled in Medicare FFS at admission and was 65 years of age or older at admission. We excluded index admissions for which the beneficiary did not have 30 days of post-discharge enrollment in Medicare Part A; 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.
- **Number of ED visits:** This is 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 year or per beneficiary per quarter. We identified ED visits in the claims files as visits with a line item revenue center code equal to 0450 through 0459 or 0981 (ED care). We excluded claims where every line item of the ED claim had a procedure code equal to any value from 70000 through 89999. This criterion excluded claims for radiological or pathology/laboratory services only. For all data sources, we identified observation stays in the claims files as visits with a 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.
- **Number of PCP visits:** This is the number of primary care visits during the measurement period per beneficiary. PCP visits in Medicare FFS were identified in the outpatient or carrier claim files using Current Procedural Terminology codes associated with evaluation and management visits and using 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.

  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.

F.4 Study Sample

The overall study sample was identified as any beneficiary who was screened as of December 31, 2019, and whom we were able to successfully link to the Medicare FFS data in the CCW. The impact analysis used a subset of this population, which only included beneficiaries in the Assistance Track who were screened on or before September 30, 2019. Beneficiaries screened between October 1, 2019, and December 31, 2019, were excluded from this analysis to ensure that all beneficiaries had at least 3 months of post-screening claims data available.

About 20% of AHC beneficiaries were in Medicare Advantage (i.e., managed care enrollees), and encounter data for them are not available in the CCW. Therefore, we excluded beneficiaries with any months of enrollment in Medicare Advantage for this report. We further restricted the Medicare sample in each year/quarter before or after screening to beneficiaries who were alive at the beginning of the year/quarter, had at least 1 month of both Part A and Part B enrollment, and had no months of only Part A or only Part B enrollment.

F.5 Statistical Methods

This section presents the statistical methods used to measure early impacts of the AHC Model among Medicare FFS beneficiaries in the Assistance Track. We started by assessing whether empirical evidence suggested that randomization was successful. Specifically, we measured whether the Assistance Track intervention and control group beneficiaries had similar health care measures before screening and similar sociodemographic characteristics. As shown in **Chapter 5** and **Appendix G**, we found that that 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 present a difference-in-differences 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, controlling for sociodemographic characteristics may produce more precise impact estimates (i.e., smaller standard errors and p-values) as 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, as it controls for even small differences in the intervention and control groups. Therefore, we calculated regression-adjusted differences in post-screening health care outcome, controlling for age, gender, race/ethnicity, dual-eligibility status, and original reasons for Medicare entitlement. Except for unplanned readmissions, all regression models were weighted using each beneficiary's eligibility fraction as the weight variable.

We also adopted appropriate regression functional forms for each outcome. Specifically, we used a generalized linear model with a gamma error distribution and a log link for the total expenditure outcome, a logistic regression

model for the unplanned readmissions outcome, and a Poisson model for all remaining outcomes except unplanned readmissions.

Because we do not know how much exposure to navigation services is necessary to produce changes in health care outcomes, we modeled outcomes at a quarterly level, where the first quarter includes the 3 months after each beneficiary was screened, the second quarter includes the next 3 months, and so on. This 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 after each beneficiary was screened, these results may provide an incomplete picture of AHC Model impacts.

Lastly, to measure the overall impact over the first 12 months 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 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-month period) within each quarter as a weight. Because of rolling entry, there were more beneficiaries 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 where relatively fewer observations were available.

F.6 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 G: Additional Claims Analysis Results Supporting Chapter 5

This appendix contains detailed tables of data that we used to examine descriptive trends for Medicare fee-for-service (FFS) beneficiaries for six key outcomes in the 3 baseline years before AHC screening and 1 intervention year after screening:

- Total Medicare FFS expenditures per beneficiary per month (PBPM).
- Inpatient admissions per 1,000 beneficiaries.
- Ambulatory care sensitive condition (ACSC) admissions per 1,000 beneficiaries.
- Unplanned readmissions per 1,000 discharges.
- Emergency department (ED) visits per 1,000 beneficiaries.
- Primary care provider (PCP) visits per 1,000 beneficiaries.

Exhibit G-1 provides the data presented in **Exhibit 5-1**. **Exhibit G-2** provides data on balance between the Assistance Track and Alignment Track intervention groups and the Alignment Track control group. **Exhibit G-3** provides the data discussed in **Exhibit 5-2** of the report. **Exhibit G-4** provides the data discussed in **Exhibit 5-3** of the report. **Exhibit G-5** provides the data discussed in **Exhibit 5-4** and **Exhibit 5-5** of the report.

Exhibit G-1. Baseline Expenditures and Utilization for Navigation-Eligible Medicare FFS Beneficiaries

Measure/Year	Assistance Track Control Group			Assistance Track Intervention Group			Alignment Track Intervention Group		
	Mean	Std dev	P-value	Mean	Std dev	P-value	Mean	Std dev	P-value
Total expenditures PBPM									
3 years before AHC screening	$1,660	$2,912	Ref	$1,659	$2,784	0.99	$1,769	$6,109	0.29
2 years before AHC screening	$1,943	$3,122	Ref	$1,915	$3,040	0.74	$2,049	$6,207	0.31
1 year before AHC screening	$3,031	$4,206	Ref	$3,059	$4,255	0.81	$3,001	$7,095	0.81
All 3 baseline years	$2,220	$3,517	Ref	$2,214	$3,477	0.95	$2,286	$6,518	0.52
Admissions/1,000 beneficiaries									
3 years before AHC screening	729	1,858	Ref	639	1,390	0.07	656	1,520	0.13
2 years before AHC screening	763	1,630	Ref	744	1,568	0.68	757	1,654	0.90
1 year before AHC screening	1,248	2,071	Ref	1,245	2,028	0.95	1,157	1,867	0.08
All 3 baseline years	916	1,877	Ref	877	1,705	0.41	862	1,704	0.23
ACSC admissions/1,000 beneficiaries									
3 years before AHC screening	181	753	Ref	143	555	0.06	147	651	0.09
2 years before AHC screening	163	618	Ref	184	662	0.23	181	683	0.29
1 year before AHC screening	317	919	Ref	293	887	0.34	279	832	0.11
All 3 baseline years	221	777	Ref	207	718	0.48	204	731	0.36
Unplanned readmissions/1,000 discharges									
3 years before AHC screening	162	369	Ref	175	380	0.60	150	358	0.00
2 years before AHC screening	206	405	Ref	172	378	0.12	195	396	0.00
1 year before AHC screening	260	439	Ref	223	416	0.03	213	410	0.00
All 3 baseline years	225	418	Ref	199	399	0.03	195	396	0.00

(continued)

Exhibit G-1. Baseline Expenditures and Utilization for Navigation-Eligible Medicare FFS Beneficiaries (continued)

Measure/Year	Assistance Track Control Group			Assistance Track Intervention Group			Alignment Track Intervention Group		
	Mean	Std dev	P-value	Mean	Std dev	P-value	Mean	Std dev	P-value
ED visits/1,000 beneficiaries									
3 years before AHC screening	2,230	4,341	Ref	2,228	5,000	0.99	2,552	5,757	0.01
2 years before AHC screening	2,392	4,779	Ref	2,367	5,385	0.86	2,703	6,352	0.02
1 year before AHC screening	3,299	6,061	Ref	3,144	6,747	0.37	3,622	6,885	0.05
All 3 baseline years	2,646	5,144	Ref	2,582	5,777	0.64	2,971	6,378	0.01
PCP visits/1,000 beneficiaries									
3 years before AHC screening	4,483	5,689	Ref	4,362	5,575	0.45	3,801	5,131	0.00
2 years before AHC screening	4,662	5,382	Ref	4,473	5,982	0.23	3,795	5,057	0.00
1 year before AHC screening	5,317	6,244	Ref	5,277	6,696	0.82	4,295	5,684	0.00
All 3 baseline years	4,825	5,795	Ref	4,706	6,118	0.43	3,969	5,309	0.00

Notes:
Except for unplanned readmissions, all averages are weighted, using each beneficiary's eligibility fraction as a weight variable.
P-values were calculated using the Assistance Track control group as the reference comparator.
Total expenditures PBPM = total annualized payments/12 months/number of unique beneficiaries.
Admission rate = (Total annualized inpatient admissions/number of unique beneficiaries) * 1,000.
ACSC admission rate = (Total annualized inpatient admissions for ACSCs/number of unique beneficiaries) * 1,000.
Unplanned readmission rate = (Total number of unplanned readmissions within 30 days of discharge/number of discharges) * 1,000.
ED visit rate = (Total annualized ED visits and observation stays/number of unique beneficiaries) * 1,000.
PCP visit rate = (Total annualized PCP visits/number of unique beneficiaries) * 1,000.
Source: RTI analysis of Chronic Conditions Data Warehouse Medicare FFS claims, May 2015–December 2019.
Definitions: ACSC = ambulatory care sensitive condition; AHC = Accountable Health Communities; ED = emergency department; FFS = fee for service; PBPM = per beneficiary per month; PCP = primary care provider.

Exhibit G-2. Balance Between Groups: Medicare FFS Beneficiaries in Assistance Track and Alignment Track Intervention Groups Compared to Assistance Track Control Group

Description	Assistance Track Control Group	Assistance Track Intervention Group	Absolute Standardized Mean Difference	Alignment Track Intervention Group	Absolute Standardized Mean Difference
Unique beneficiaries	1,296	3,242	NA	5,120	NA
Mean age (std dev), years	61.9 (15.8)	62.1 (15.7)	0.01	62.0 (15.0)	0.01
Under 65 years of age, %	52.55	52.10	0.01	52.93	0.01
65 years of age or older, %	47.45	47.90	0.01	47.07	0.01
Female, %	64.27	62.12	0.04	60.78	0.07
Black, non-Hispanic, %	22.07	20.79	0.03	27.44	0.12
White, non-Hispanic, %	63.50	64.22	0.01	55.72	0.16
Hispanic, %	11.03	11.91	0.03	12.03	0.03
Other, %	3.40	3.08	0.02	4.80	0.07
Dually eligible for Medicare and Medicaid, %	57.79	55.61	0.04	60.39	0.05
Originally entitled because of disability, %	63.12	62.37	0.02	63.55	0.01
Originally entitled because of ESRD, %	3.01	3.08	0.00	2.36	0.04
Mean total expenditures PBPM, (std dev), quarter before screening, $	4,182 (6,780)	4,393 (6,777)	0.03	4,159 (9,394)	0.00
Mean ED visits per 1,000 beneficiaries (std dev), quarter before screening	1,200 (2,080)	1,218 (2,370)	0.01	1,258 (2,230)	0.03
Mean inpatient admissions per 1,000 beneficiaries (std dev), quarter before screening	481 (835)	501 (871)	0.02	445 (831)	0.04
Did not report income, %	42.52	39.98	0.05	44.43	0.04
Reported income < $10,000, %	18.44	19.49	0.03	22.11	0.09
Reported income $10,000 to $14,999, %	15.12	14.31	0.02	14.12	0.03

(continued)

Exhibit G-2. Balance Between Groups: Medicare FFS Beneficiaries in Assistance Track and Alignment Track Intervention Groups Compared to Assistance Track Control Group (continued)

Description	Assistance Track Control Group	Assistance Track Intervention Group	Absolute Standardized Mean Difference	Alignment Track Intervention Group	Absolute Standardized Mean Difference
Reported income $15,000 to $19,999, %	5.32	7.28	0.08	5.80	0.02
Reported income $20,000 to $24,999, %	7.56	6.29	0.05	4.57	0.13
Reported income $25,000 to $34,999, %	4.63	4.78	0.01	3.93	0.03
Reported income $35,000 to $49,999, %	2.55	4.04	0.08	2.64	0.01
Reported income $50,000 to $74,999, %	2.16	2.50	0.02	1.37	0.06
Reported income ≥ $75,000, %	1.70	1.33	0.03	1.04	0.06
Did not report education, %	16.59	16.47	0.00	25.61	0.22
Less than a high school degree, %	20.22	20.42	0.01	18.28	0.05
High school graduate or equivalent, %	30.71	33.00	0.05	28.28	0.05
Some college, %	23.69	21.81	0.04	19.08	0.11
College graduate, %	8.80	8.30	0.02	8.75	0.00

Note: The absolute standardized mean difference columns compare the Assistance Track intervention group and the Alignment Track intervention group to the Assistance Track control group.

Source: RTI analysis of Chronic Conditions Data Warehouse Medicare FFS claims and administrative AHC program data.

Definitions: AHC = Accountable Health Communities; ED = emergency department; ESRD = end-stage renal disease; FFS = fee for service; NA = not applicable.

Exhibit G-3. Baseline Expenditures and Utilization by AHC Eligibility Criteria for Medicare FFS Beneficiaries

Description	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
Unique beneficiaries	61,889	64,941	70,257	75,922	25,165	25,869	26,583	28,913	13,207	13,811	14,477	16,478	13,002	13,531	14,047	16,124
Total expenditures PBPM	$679	$747	$943	$795	$1,290	$1,565	$2,696	$1,859	$755	$850	$964	$859	$1,726	$1,999	$3,040	$2,265
Std dev	$1,453	$1,593	$1,931	$1,684	$2,222	$2,637	$3,553	$2,931	$1,675	$2,024	$2,104	$1,950	$4,841	$4,991	$5,964	$5,327
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.
Admissions/1,000 beneficiaries	191	202	277	225	447	528	1,076	688	215	223	240	226	663	756	1,201	877
Std dev	596	608	728	651	1,046	1,124	1,535	1,287	646	667	655	656	1,533	1,624	1,953	1,732
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.
ACSC admissions/1,000 beneficiaries	33	35	52	40	99	123	252	159	37	42	44	41	151	181	290	209
Std dev	229	238	296	258	482	498	732	587	248	271	271	264	639	671	867	737
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.
Unplanned readmissions/ 1,000 discharges	95	90	115	102	137	149	209	179	89	79	102	91	160	191	223	201
Std dev	293	286	320	303	344	356	407	384	286	269	303	287	366	393	416	401
P-value	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	Ref.	Ref.	Ref.	Ref.

(continued)

Exhibit G-3. Baseline Expenditures and Utilization by AHC Eligibility Criteria for Medicare FFS Beneficiaries (continued)

Description	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
ED visits/1,000 beneficiaries	411	400	472	429	1,068	1,196	1,954	1,412	681	628	632	647	2,409	2,561	3,438	2,811
Std dev	1,217	1,103	1,162	1,161	2,565	2,625	3,024	2,776	1,797	1,749	1,806	1,784	5,424	5,899	6,790	6,091
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.
PCP visits/1,000 beneficiaries	3,051	3,032	3,277	3,124	4,180	4,351	5,251	4,600	3,076	3,051	3,167	3,099	4,084	4,137	4,760	4,332
Std dev	3,598	3,603	3,742	3,653	4,620	4,810	5,622	5,064	3,925	3,988	3,983	3,966	5,368	5,434	6,135	5,670
P-value	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Ref.	Ref.	Ref.	Ref.

Notes:
Except for unplanned readmissions, all averages are weighted, using each beneficiary's eligibility fraction as a weight variable.
P-values were calculated using the navigation-eligible group as the reference comparator.
Total expenditures PBPM = total annualized payments/12 months/number of unique beneficiaries.
Admission rate = (Total annualized inpatient admissions/number of unique beneficiaries) * 1,000.
ACSC admission rate = (Total annualized inpatient admissions for ACSCs/number of unique beneficiaries) * 1,000.
Unplanned readmission rate = (Total number of unplanned readmissions within 30 days of discharge/number of discharges) * 1,000.
ED visit rate = (Total annualized ED visits and observation stays/number of unique beneficiaries) * 1,000.
PCP visit rate = (Total annualized PCP visits/number of unique beneficiaries) * 1,000.
Source: RTI analysis of Chronic Conditions Data Warehouse Medicare FFS claims, May 2015–December 2019.
Definitions: ACSC = ambulatory care sensitive condition; AHC = Accountable Health Communities; ED = emergency department; FFS = fee for service; HRSN = health-related social need; PBPM = per beneficiary per month; PCP = primary care provider.

Exhibit G-4. Baseline Expenditures and Utilization by Number of Core HRSNs for Navigation-Eligible Medicare FFS Beneficiaries

Description	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
Unique beneficiaries	6,166	6,375	6,572	7,468	3,692	3,865	4,024	4,649	3,144	3,291	3,451	4,007
Total expenditures PBPM	$1,581	$1,892	$2,997	$2,165	$1,925	$2,157	$3,137	$2,417	$1,781	$2,028	$3,009	$2,284
Std dev	$2,649	$3,136	$4,034	$3,387	$7,966	$7,945	$9,065	$8,367	$2,997	$3,140	$4,321	$3,587
P-value	NA	NA	NA	NA	0.01	0.05	0.36	0.05	0.31	0.36	0.43	0.33
Admissions/1,000 beneficiaries	603	701	1,203	839	707	776	1,188	894	735	843	1,214	935
Std dev	1,358	1,509	1,908	1,634	1,674	1,650	1,861	1,745	1,680	1,804	2,141	1,900
P-value	NA	NA	NA	NA	0.00	0.02	0.69	0.08	0.50	0.10	0.58	0.31
ACSC admissions/1,000 beneficiaries	140	167	298	203	156	186	277	208	169	202	291	222
Std dev	560	629	879	708	634	678	841	727	779	741	874	802
P-value	NA	NA	NA	NA	0.19	0.16	0.23	0.71	0.45	0.35	0.50	0.39
Unplanned readmissions/1,000 discharges	157	163	217	190	176	210	212	203	139	256	262	237
Std dev	364	370	413	392	381	407	409	403	346	437	440	425
P-value	NA	NA	NA	NA	0.25	0.00	0.66	0.11	0.11	0.04	0.00	0.01

(continued)

Exhibit G-4. Baseline Expenditures and Utilization by Number of Core HRSNs Reported Among All Navigation-Eligible Medicare FFS Beneficiaries (continued)

Description	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
ED visits/1,000 beneficiaries	1,972	2,150	2,878	2,339	2,670	2,674	3,625	2,998	2,989	3,259	4,340	3,541
Std dev	4,907	5,466	5,575	5,343	5,914	5,495	6,563	6,029	5,735	7,026	8,852	7,367
P-value	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
PCP visits/1,000 beneficiaries	4,169	4,283	5,072	4,513	4,011	4,087	4,627	4,247	3,996	3,901	4,294	4,066
Std dev	5,147	5,205	6,082	5,514	5,106	5,597	6,336	5,719	6,069	5,677	5,962	5,905
P-value	NA	NA	NA	NA	0.14	0.08	0.00	0.01	0.91	0.16	0.02	0.15

Notes:

Except for unplanned readmissions, all averages are weighted, using each beneficiary's eligibility fraction as a weight variable.

P-values were calculated by comparing beneficiaries with two core HRSNs reported to beneficiaries with one core HRSN reported and by comparing beneficiaries with three or more core HRSNs reported to beneficiaries with two core HRSNs reported. No P-value was calculated by comparing one core HRSN reported to three or more core HRSNs reported.

Total expenditures PBPM = total annualized payments/12 months/number of unique beneficiaries.

Admission rate = (Total annualized inpatient admissions/number of unique beneficiaries) * 1,000.

ACSC admission rate = (Total annualized inpatient admissions for ACSCs/number of unique beneficiaries) * 1,000.

Unplanned readmission rate = (Total number of unplanned readmissions within 30 days of discharge/number of discharges) * 1,000.

ED visit rate = (Total annualized ED visits and observation stays/number of unique beneficiaries) * 1,000.

PCP visit rate = (Total annualized PCP visits/number of unique beneficiaries) * 1,000.

Source: RTI analysis of Chronic Conditions Data Warehouse Medicare FFS claims, May 2015–December 2019.

Definitions: ACSC = ambulatory care sensitive condition; AHC = Accountable Health Communities; ED = emergency department; FFS = fee for service; HRSN = health-related social need; NA = not available; PBPM = per beneficiary per month; PCP = primary care provider.

Exhibit G-5. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible Medicare FFS Beneficiaries

Description	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
Number of beneficiaries					
Unique intervention group beneficiaries	3,165	2,996	2,228	1,536	3,318
Unique control group beneficiaries	1,261	1,182	886	604	1,307
Total expenditures PBPM					
Intervention group adjusted mean	$4,338	$3,507	$3,480	$3,178	$3,715
Control group adjusted mean	$4,141	$3,373	$3,558	$3,293	$3,647
Difference	$196	$131	−$91	−$167	$56
% difference	4.73	3.88	−2.56	−5.07	1.54
P-value	0.50	0.60	0.76	0.65	0.85
Admissions/1,000 beneficiaries					
Intervention group adjusted mean	367	319	312	302	330
Control group adjusted mean	383	339	348	330	354
Difference	−16	−20	−39	−34	−25
% difference	−4.18	−5.90	−11.21	−10.30	−7.06
P-value	0.45	0.33	0.11	0.27	0.27
ACSC admissions/1,000 beneficiaries					
Intervention group adjusted mean	94	72	71	78	79
Control group adjusted mean	89	84	83	69	83
Difference	4	−12	−12	8	−4
% difference	4.49	−14.29	−14.46	11.59	−4.82
P-value	0.68	0.24	0.31	0.55	0.75
Unplanned readmissions/1,000 discharges					
Intervention group adjusted mean	285	233	271	277	266
Control group adjusted mean	263	286	288	155	262
Difference	19	−60	−23	113	−2
% difference	7.22	−20.98	−7.99	72.90	−0.76
P-value	0.61	0.18	0.66	0.07	0.97

(continued)

Exhibit G-5. Regression-Adjusted Comparison of Post-enrollment Means for Assistance Track Navigation-Eligible Medicare FFS Beneficiaries (continued)

Description	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
ED visits/1,000 beneficiaries					
Intervention group adjusted mean	794	739	686	786	752
Control group adjusted mean	875	850	738	828	830
Difference	−75	−109	−60	−54	−78
% difference	−8.57	−12.82	−8.13	−6.52	−9.40
P-value	0.01	0.00	0.09	0.26	0.02
PCP visits/1,000 beneficiaries					
Intervention group adjusted mean	1,689	1,531	1,572	1,579	1,598
Control group adjusted mean	1,737	1,614	1,604	1,758	1,673
Difference	−37	−66	−13	−152	−58
% difference	−2.13	−4.09	−0.81	−8.65	−3.47
P-value	0.40	0.14	0.80	0.03	0.24

Notes:
Except for unplanned readmissions, all averages are weighted, using each beneficiary's eligibility fraction as a weight variable.
P-values compare the intervention group mean with the control group mean.
The total expenditures PBPM ($) impact was estimated using a generalized linear model with a gamma error distribution and log link. The ED visit, inpatient admission, ACSC admission, and PCP visit impacts were estimated using a Poisson specification. The unplanned readmissions impact was estimated using a logistic specification.
Total expenditures PBPM = total annualized payments/12 months/number of unique beneficiaries.
Admission rate = (Total annualized inpatient admissions/number of unique beneficiaries) * 1,000.
ACSC admission rate = (Total annualized inpatient admissions for ACSCs/number of unique beneficiaries) * 1,000.
Unplanned readmission rate = (Total number of unplanned readmissions within 30 days of discharge/number of discharges) * 1,000.
ED visit rate = (Total annualized ED visits and observation stays/number of unique beneficiaries) * 1,000.
PCP visit rate = (Total annualized PCP visits/number of unique beneficiaries) * 1,000.
Source: RTI analysis of Chronic Conditions Data Warehouse Medicare FFS claims, May 2015–December 2019.
Definitions: ACSC = ambulatory care sensitive condition; AHC = Accountable Health Communities; ED = emergency department; FFS = fee for service; HRSN = health-related social need; PBPM = per beneficiary per month; PCP = primary care provider.

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