Baltimore Accountable Health Communities: Interim Report

July 2020

Executive Summary

In 2017, **the Baltimore City Health Department was awarded a five-year, $4.3 million grant** from the Center for Medicaid and Medicare Innovation **to address unmet health related social needs (HRSNs)** with the goal of improving health outcomes and reducing health care costs and utilization. Titled the Baltimore Accountable Health Community (AHC), this social determinants of health model builds on growing evidence that where people are born, live, grow, work, and age plays a significant part in their overall health and wellbeing.

AHC Model Objectives

1) Screens patients for HRSNs
2) Navigate patients to social needs-related services
3) Strengthen clinical-community partnerships
4) Create a technology platform for data collection and a HRSN resource directory

In Baltimore City, a history of redlining policies, structural racism, and poverty has contributed to stark health inequities in our communities and unmet health related social needs. Almost half of Baltimore City's 250,000 households cannot afford the City's high cost of living and do not earn enough to afford basic necessities.[1] Through the Baltimore AHC, numerous community stakeholders—including the Baltimore City Health Department, HealthCare Access Maryland, Maryland Medicaid, Health Information Exchange: CRISP, hospitals and clinics, and community based organizations—have decided to address the social determinants of health together.

Baltimore City implemented screening, referral, and navigation for the Baltimore AHC on October 1, 2018 at four unique clinical delivery sites. From October 1, 2018 through December 31, 2019, the Baltimore AHC has offered screening to over 3,000 patients at 10 unique clinical delivery sites and has navigated over 1,000 patients to over 100 community-based organizations offering essential HRSN resources.

[1] The United Ways of Maryland. ALICE Report. *United Way*. 2016. https://www.uwcm.org/main/wp-content/uploads/2018/09/18_UW_ALICE_Report_MD_Refresh_9.11.18_Lowres.pdf. Accessed 20 Feb. 2020.

Executive Summary (continued)

This interim report:

1) Summarizes the AHC screening, navigation, and data sharing processes for the first two and half years of the initiative (May 1, 2017 – Jan. 1, 2020).
2) Reviews screening and navigation data results (Oct. 1, 2017 – Dec. 31, 2019).
3) Reflects on lessons learned from implementing an innovative social determinants of health model.
4) Looks forward to areas of growth opportunity before and after the project's end date.

Key Lessons Learned:

1) Adapt the AHC screening process and tool to fit different hospital workflows.
2) Implement the navigation process to suit different healthcare systems.
3) Strengthen partner alignment through the AHC Governance Model.

Baltimore City AHC Conclusions:

1) Baltimore City residents experience high levels of unmet HRSNs.
2) Integration of addressing social needs and social determinants of health work into the Healthcare system can be challenging, but is necessary
3) The social determinants of health approach to health care must persist beyond the AHC project end date.

Background

There is increasing evidence that the social and physical environments in which we live and work play a significant role in our health and wellbeing. Researchers estimate that over 70% of health outcomes are attributable to factors beyond healthcare.[2] Increasingly, the social, behavioral, and environmental components that affect a person's health are understood as drivers of disease-related causes of death. The existing literature indicates that addressing social needs and social determinants of health—the conditions in which people are born and in which they live, grow, work, and age—could significantly improve health outcomes and reduce health care costs and utilization.

Consistent with these findings, health inequities in Baltimore City are closely tied to unmet health-related social needs (HRSNs). A history of underinvestment and population loss, redlining policies, and structural racism in certain Baltimore City communities has contributed to current unmet HRSNs such as financial strain, food insecurity, and unstable or inadequate housing. Nearly 60% of the total population of Baltimore are Centers for Medicaid and Medicare (CMS) beneficiaries.[3]

In 2017, the Center for Medicaid and Medicare Innovation (CMMI) awarded Baltimore City a five-year, $4.3 million grant to design, implement, and evaluate a citywide Accountable Health Communities (AHC) model. The Accountable Health Communities Model is authorized under Section 1115A of the Social Security Act (as added by Section 3021 of the Patient Protection and Affordable Care Act (P.L. 111-148)). The Accountable Health Communities Model will test whether systematically identifying and addressing Medicare and Medicaid beneficiaries' health-related social needs through screening, referral, and community navigation services impacts total health care costs and reduces inpatient and outpatient utilization.

The AHC objectives are:

1) Adoption of a universal social needs screening tool.
2) Strengthening of clinical to community linkages through community health worker navigation.
3) Data sharing amongst clinical and community partners.
4) Aligning of partners around the social determinants of health to address citywide social needs.

[2] McGinnis JM et al. "The case for more active policy attention to health promotion." *Health Affairs.* Mar-Apr 2002, vol. 21, no. 2: pp.78-93.

[3] "Baltimore Accountable Health Communities." Baltimore City Health Department, n.d., https://health.baltimorecity.gov/baltimore-accountable-health-community. Accessed 20 Feb. 2020.

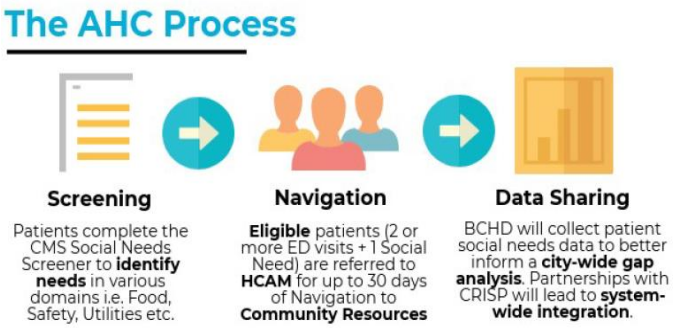


Figure 1. AHC Process

AHC Implementation

From May 2017 – August 2018, Baltimore City planned for AHC implementation. Official screening, referral, and navigation began on October 1, 2018 at four pilot sites. Currently, there are 10 clinical sites. Clinical Delivery Sites faced numerous operational and programmatic barriers to implement the AHC screening and navigation processes in a streamlined and efficient way. These barriers centered on insufficient institutional resources available to commit to AHC initiative as well as the different electronic medical record systems. The following are key lessons learned from implementation of this AHC social determinants of health model.

Common Barriers to AHC Implementation

1) *Insufficient Staffing*: All clinical sites mentioned adequate staffing as a barrier to screening in the clinical setting. Social-work, nursing, and administrative staff are often already at capacity in busy hospital environments. Some hospitals, such as Saint Agnes, only have one social worker in the Emergency Department. Because the AHC program relies on clinical sites to implement screening using their existing resources, clinical sites feel over-stretched to accommodate the significant administrative and programmatic lift of incorporating
2) *Workflow Issues*: Workflow barriers in the screening process are symptoms of the complexity inherent in clinical settings. Primarily, issues arise in the administration of the screening tool. Because of the rapid and sometimes chaotic nature of an emergency department, completing the screening can be difficult. In other clinical sites, balancing the administration of the screen with other registration processes and existing navigation processes can be challenging.
3) *Data and Reporting Requirements*: Clinical sites have been consistently challenged to fulfill the reporting requirements of the AHC project. Each healthcare system had different electronic medical records (EMR) systems and different processes to integrate the AHC Social Needs Screening Tool. Sites like MedStar have invested significant resources in developing workflows and electronic systems that meet these requirements. Other sites that use paper screens have a difficult time organizing and recording screening data.

Key Lessons Learned

1) Adapt the AHC Social Needs Screening and Referral Process to Fit Different Hospital Workflows.
2) Implement the Navigation Process to Suit Different Healthcare Systems.

3) Strengthen Partner Alignment through the AHC Governance Model.

1) Adapt the AHC Social Needs Screening and Referral Process to Fit Different Hospital Workflows

Despite growing evidence that unmet social needs are a key contributor to health outcomes, a universally agreed-upon standardized HRSN screening tool does not exist. CMS created the universal AHC Social Needs Screening Tool (Link), which focuses on five core domains linked to poor health or increased health care utilization and cost (housing instability, food insecurity, transportation difficulties, utility assistance needs, and interpersonal safety)

Standardized Social Needs Screening Tool Development

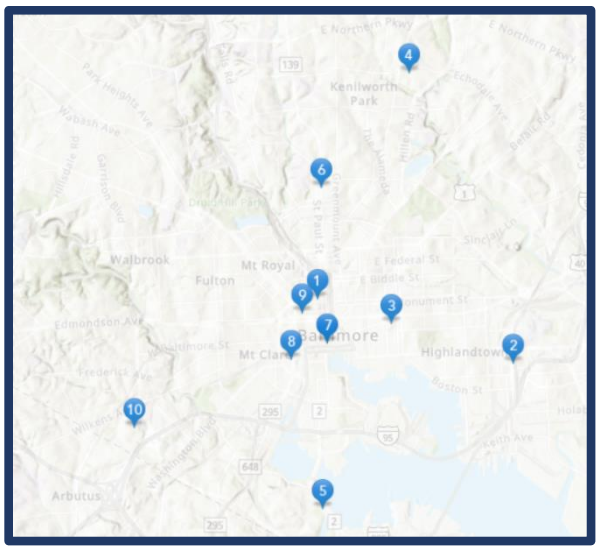
To balance breadth with brevity CMS offered the option to screen five supplemental HRSN domains (mental health, financial strain, employment, substance use, education), which Baltimore City elected to include in its survey. Many Baltimore City hospitals and clinics already participate in the Maryland SBIRT initiative, which deploys a drug and alcohol screening in the healthcare setting. For this reason, many of the hospitals and clinics chose only to include substance use questions on tobacco use. Several sites also built the AHC screening questions into their electronic medical record (EMR) for ease of referral and data sharing (see AHC implementation section).

Screening Process

In August 2018, four clinical partners, Mercy, St. Agnes, Chase Brexton, and University of Maryland, agreed to be inaugural hospitals and clinics for AHC screening. Official screening, navigation, and referral began on October 1, 2018 at those four sites. Since, Baltimore AHC has grown to ten hospitals and clinics. Please see Figure 2. Additional partners are poised to begin screening in the coming months.

As a part of the AHC, the Baltimore City Health Department (BCHD) coordinates with clinical and community stakeholders on screening and navigation and partners with Maryland Medicaid on data reporting and grant alignment. HealthCare Access Maryland (HCAM) serves as the AHC partner for patient referral and navigation to community-based organizations (CBOs).

Figure 2. Baltimore Accountable Health Communities Clinical Delivery Sites



Clinical Sites -1/2020[4]

1. Chase Brexton Health Services
2. Johns Hopkins Bayview
3. Johns Hopkins Hospital
4. MedStar Good Samaritan Hospital
5. MedStar Harbor Hospital
6. MedStar Union Memorial Hospital
7. Mercy Medical Center + CAFCA
8. University of Maryland Medical Center (UMMC) Downtown
9. UMMC Midtown
10. St. Agnes

Along the way, we have learned that different clinical sites require different screening protocols (e.g., paper screening vs. screening embedded into the EMR or Community Health Workers [CHWs] performing screening vs. volunteer screeners).

Screening occurs at 10 hospitals and clinics, including emergency departments, psychiatric emergency departments, internal medicine inpatient floors, labor and delivery and inpatient obstetric floors, and adult outpatient clinics and OB/GYN clinics. Screened patients are identified as high-risk and referred for navigation if they 1) live in Baltimore City or Baltimore County[5]; 2) have two or more emergency department visits in the last 12 months; and 3) self-report at least one HRSN (food, housing, transportation, utilities, or interpersonal safety needs). Hospitals and clinics have developed different screening processes based on site-specific workflows to assist patients.

Overall, there are three types of screening and referral processes:
Please see *Figure 3* for additional information on the three types of screening process. Sites like UMMC and Midtown have built screening into their EMRs and make referrals to HCAM via fax. Other locations complete paper screens and fax them to HCAM (e.g., Chase Brexton, Mercy, St. Agnes, Bayview). Finally, MedStar screens either in its EMR or on paper and navigates patients with on-site Community Health Workers.

[4] As of April 23rd, MedStar Franklin Square and MedStar House Calls have been added as clinical sites
[5] As of April 23rd, the geographic target area expanded to include Baltimore County

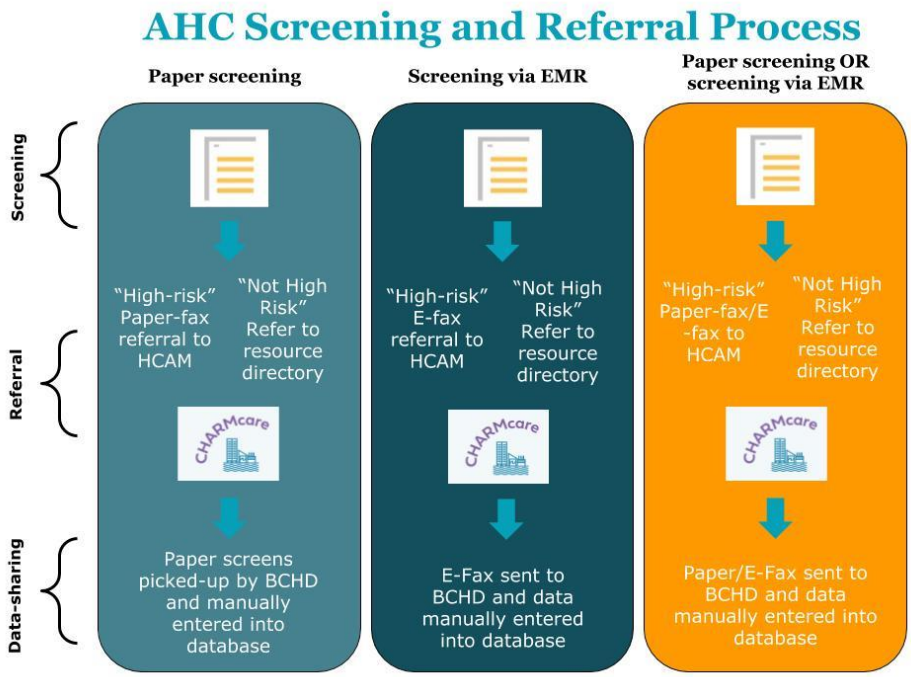


Figure 3. AHC Screening and Referral Process

Finding creative ways to encourage hospital and clinic screening efforts

At hospitals and clinics where volunteers are screeners, we found screening and navigation numbers increased seasonally, especially during holiday and school breaks. To strengthen screening efforts, BCHD has funded HCAM to employ two full-time screeners to begin in February 2020. BCHD also created an incentive program with CMS's approval to reimburse hospitals and clinics $40 for every patient referred for navigation from December 2019 to April 2020.

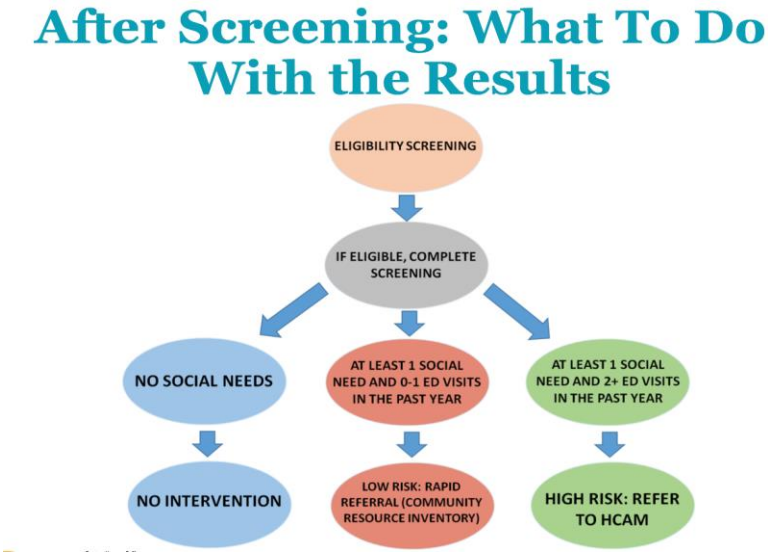


Figure 4. Screening Results Workflow

Overview of Navigation Process

After screening, eligible high-risk patients are referred for navigation either through HCAM CHWs or on-site CHWs (e.g., at MedStar).

CHWs perform the following functions:

1) Conduct telephonic assessments and/or interviews with patients to discuss, and/or identify additional social needs
2) Verify beneficiaries are not already enrolled in duplicative services using a variety of databases (MMIS, MCO, eMedicaid, eClinicalWorks).
    a) if case management is identified as a need, a direct referral is made to the case management entity
3) Refer to CBOs based on HRSN for social services
4) Follow-up with beneficiary within one week to discuss referral made
5) Follow beneficiary for at least 30 days, and may keep case open beyond 30 days if there are pending referrals or a new HRSN is identified
6) Provide weekly feedback reports to each hospital, clinic, and Medicaid MCOs

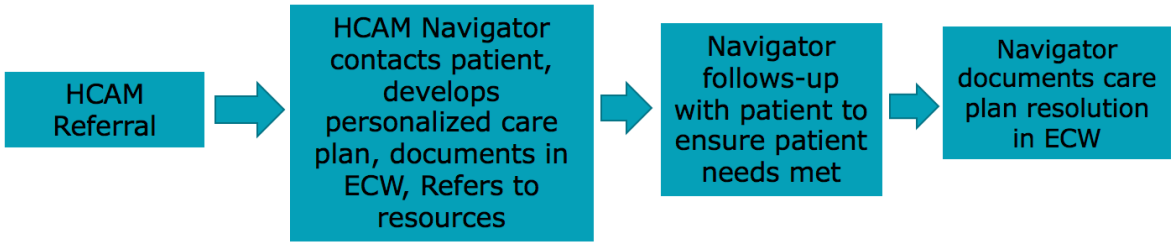


Figure 5. Navigation Process

2) Implement the Navigation Process to Suit Different Healthcare Systems

During the first year of screening, HCAM CHWs were on-site at hospitals and clinics to screen and navigate patients. After Year 1, we relocated HCAM CHWs to a centralized off-site hub. This allowed CHWs to focus their efforts primarily on navigation. CHWs were able to spend more time working with CBOs, which often offer social service resources based on grant cycle periods, to verify what high quality resources were available to beneficiaries at the time of referral.

Adapting the screening and navigation process to suit different hospitals and clinic resources ultimately benefits the patients' ability to be connected to services. For example, Mercy social workers and volunteer screeners identify patients eligible for navigation and fax referrals to HCAM, who follow-up in a timely manner via telephone. In comparison, MedStar's on-site CHWs can perform screening and navigation in a single streamlined process.

To ensure AHC is a complement to other State initiatives, HCAM also works with State Medicaid as a part of the navigation process to evaluate if referred beneficiaries are already enrolled in duplicative services such as Long Term Support Services, Development Disabilities Waiver, Rare and Expensive Case Management Program, and Chronic Health Homes. To date, there has been an unexpectedly low duplication rate. As of January 2020, only two percent (20 out of the over 1,000 total navigated beneficiaries) were enrolled in duplicative services.

Leveraging Technology for the Navigation Process

To respond to patients' HRSNs, we created CHARMcare, an online resource directory, to provide high quality social service referrals both for patients eligible for navigation and for patients who do not receive navigation. The site provides eligibility and service-specific information. In addition, the site has a Real-Time Capacity feature that allows organizations to update their resource capacity in real time.

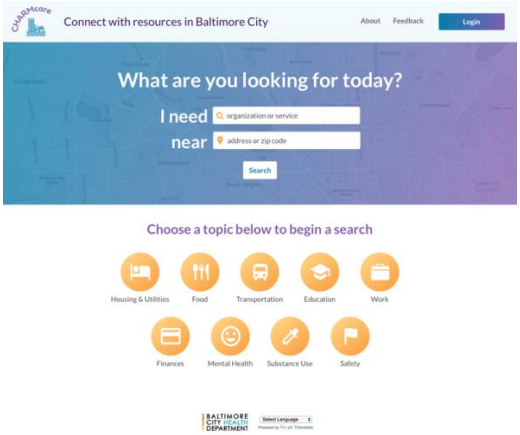


Figure 6. CHARMcare.org Homepage

Data Collection and Reporting

BCHD and HCAM enter all completed screening and navigation data into a CMS database. Hospitals and clinics receive weekly navigation updates from HCAM on the outcomes of their screening referrals. Updates include the top HRSNs reported by beneficiaries, the number of navigation referrals, and the status of referrals to determine success in securing resources through HCAM navigation.

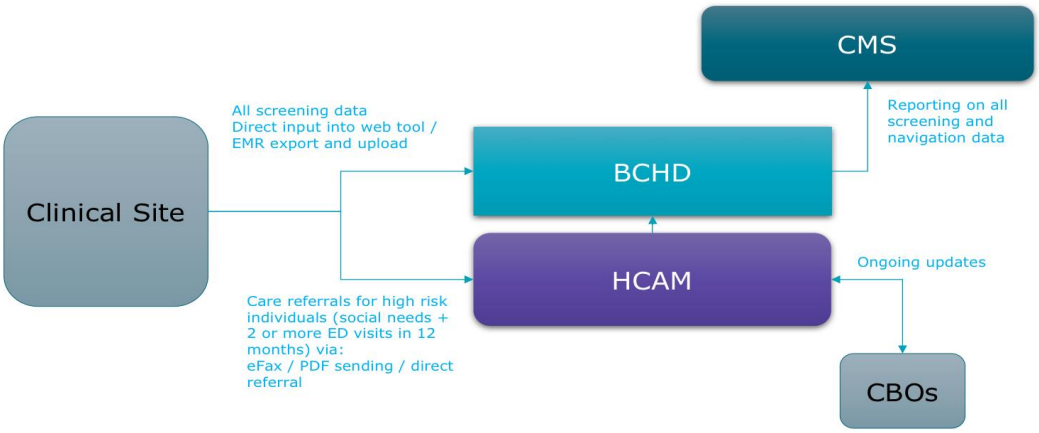


Figure 7. AHC Data Flow

3) Strengthen Partner Alignment through the AHC Governance Model

To ensure that Baltimore AHC aligns with its mission and stakeholder efforts, three committees formed as a part of the AHC Governance Model.

- The Social Determinants of Health Steering Committee, led by the Commissioner of Health, meets biannually and focuses on the strategic direction and sustainability of addressing social needs and social determinants of health. Moving forward, this will be folded into the Local Health Improvement Council.
- The AHC Quality Committee meets quarterly to prioritize quality improvement related to technology, data collection/utilization, and clinical workflow around the AHC model.
- The CHARMcare Council, composed of governmental, clinical, and CBO stakeholders, meets quarterly to define high-quality resources, refine the resource directory offerings, and evaluate AHC referrals and sustainability.

There are monthly check-ins between the AHC hospitals and clinics and BCHD.

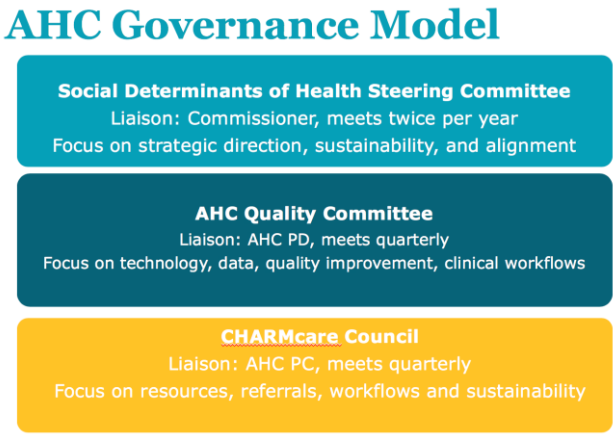


Figure 8. AHC Governance Model

AHC Preliminary Results

From October 1, 2018 to December 31, 2019, over 3,000 patients have been screened. Of those, 1,005 patients received navigation services and referrals to over 100 CBOs. CMS has set a target goal to navigate and refer 2,925 qualifying beneficiaries to social services per year. Typically, over half of Baltimore patients screened were eligible for navigation.

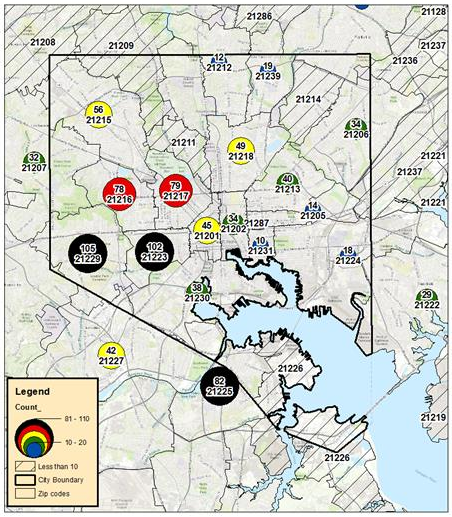


Figure 9. Screened Beneficiaries by Zip code

- Of high-risk beneficiaries, virtually all reported having at least one unmet HRSN. By zip code, 21229 had the most beneficiaries screened followed by 21223.
- The average high-risk beneficiary reported five HRSNs (max=10).
- Less than one percent reported no HRSNs. Of high-risk beneficiaries, 86% had at least one core HRSN and 11% reported all core HRSNs.
- 96% of high-risk beneficiaries had at least one supplemental HRSN and 30% had four or more supplemental HRSNs.
- Mental health (78% of beneficiaries), financial strain (74%), and food insecurity (65%) were the three most frequently reported HRSNs.
- Of respondents who reported a mental health need, 40% reported both mental health and substance use needs.
- High-risk beneficiaries who reported food insecurity did not always live in a healthy food priority area (HFPA).[6] Sixty-eight percent of the more than 500 high-risk beneficiaries living outside of an HFPA reported food insecurity.

Reflections on Baltimore AHC and Looking Forward

Baltimore AHC highlights the high level of HRSNs our residents' experience

In summarizing and presenting the preliminary AHC data, few community stakeholders were surprised at the prevalence and overlapping HRSNs reported by patients. Many were surprised at the magnitude of the early screening results — nearly 8 out of 10 screened positive for mental

[6] "A Healthy Food Priority Area" in Baltimore City is an area where: 1) The average Healthy Food Availability Index score for all food stores is low, 2) The median household income is at or below 185% of the Federal Poverty Level, 3) Over 30% of households have no vehicle available, and 4) The distance to a supermarket is more than a quarter mile."

health, nearly 3 out of 4 for financial strain, and nearly 68% of those who did not live in a high food priority area experienced food insecurity. This data describes the toxic stress our residents face from structural racism, economic hardship, and unmet HRSNs. In an effort to meet the HRSNs of more individuals, Baltimore AHC is working to expand screening and navigation at four additional hospitals and clinics. We are also hiring two full-time screeners to meet patient demand.

Given widespread food insecurity among residents, we dived deeper into the ways clinical sites are addressing food insecurity in Baltimore City

AHC data demonstrates food insecurity as one of the top social needs in Baltimore City. There is limited data on current clinical interventions that work to address this issue. We conducted qualitative research and a literature review to understand this relationship from. Over the past year, we have focused on the following:

1. Understanding the food landscape in Baltimore City from a clinical, social, individual, and community standpoint. This includes informative interviews with local partners and also a visit to DC Greens[7] to learn about their food prescription program.
2. Hosting meetings with HCAM and food-related CBOs to improve the warm handoffs between AHC navigation staff and community stakeholders.
3. Frequently updating food resources in CHARMcare, particularly during the COVID-19 pandemic and connecting clinical partners to food programs
4. Aligning with the hospitals applying to the Maryland Health Services Cost Review Commission (HSCRC) Regional Partnership Catalyst Grants to ensure that the plan for diabetes and pre-diabetes programs also incorporates measures to combat food insecurity.

After conducting our research and literature review, we identified active Food as Medicine initiatives (e.g., medically-tailored meals, food prescription programs) across the United States. These initiatives effectively address food insecurity from a clinical standpoint. We know that food insecurity, and someone's ability to obtain food, plays an integral role in an individual's overall health status. Moving forward, we hope to:

1. Coordinate and strengthen existing Food as Medicine interventions in Baltimore through the AHC governance model and in the future, the Local Health Improvement Council (LHIC) to improve health outcomes such as diabetes and other chronic diseases.
2. Improve and increase access to food equity efforts in Baltimore City through community and policy advocacy
3. Promote efforts for Food as Medicine initiatives to be sustainable and reimbursable
4. Enhance data sharing and evaluation capabilities.

[7] DC Greens. Produce Prescription Program. https://www.dcgreens.org/produce-rx

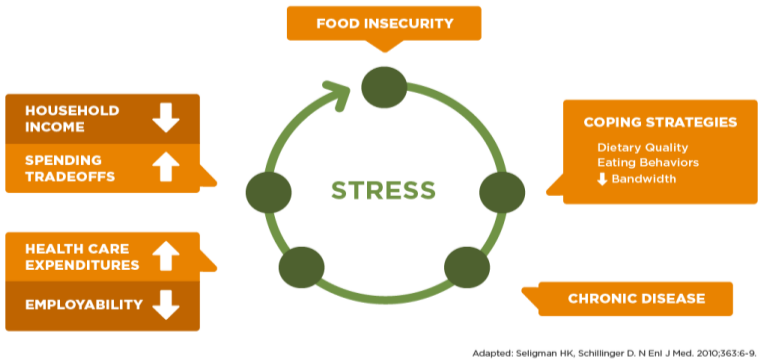


Figure 10. A Conceptual Framework: Cycle of Food Insecurity & Chronic Disease[8]

Integration of addressing social needs and social determinants of health work into the Healthcare system can be challenging, but is necessary

For the past several years, AHC partners have worked tirelessly to integrate social needs into the clinical setting and strengthening the clinical and community linkages. Together, the team has developed new workflows, incorporated the AHC social need questions into EMRs, partnered with Chesapeake Regional Information System for our Patients (CRISP) for a regional approach to addressing social needs. In many CDS locations, screening and navigating social needs occur only in a part of the hospitals but is not system wide. Moving forward, the AHC team work continue to have social needs screen universal and not limited to only a department.

COVID-19 has further emphasized the importance of equity and the need for the social determinants of health approach

COVID-19 has affected the Baltimore AHC initiative. During March, when Maryland's Governor announced the stay-at-home order, screening numbers decreased. Clinical staff was re-deployment to the COVID-19 response, personal protective equipment (PPE) for screening staff was lacking, and volunteer staff was limited at sites due to safety concerns. The AHC team anticipates social needs to increase as the pandemic continues. From March 1 to April 18, nearly 37,000 Baltimore residents filed for unemployment insurance. Job loss will influence Baltimore residents' financial security and other needs.

The Baltimore AHC team has focused on providing care coordination with Maryland Access Point and HCAM as well as the case investigation/contact tracing team. The team has also prioritized COVID-19 resources during this time.

The social determinants of health approach to health care must persist beyond the AHC grant end date

We have also begun development of a sustainability plan with stakeholders to continue AHC efforts after the end of the grant. While funding for the Baltimore AHC grant is for five years, we hope to sustain opportunities to support the social determinants of health model toward improving health care outcomes, cost, and utilization well beyond the grant end date.

[8] "Understand food insecurity." *Feeding America*, 2014, https://hungerandhealth.feedingamerica.org/understand-food-insecurity/hunger-health-101. Accessed 20 Feb. 2020.

Acknowledgements

The Baltimore City Health Department is grateful to the Baltimore Accountable Health Communities team. For years, they have provided expertise to address social needs and social determinants of health in the City. They make Baltimore City a healthier and better place.

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