CONNECTICUT
STATE INNOVATION MODEL (SIM)

HEALTH ENHANCEMENT COMMUNITY INITIATIVE PROPOSED FRAMEWORK

Technical Report

DRAFT FOR HEALTHCARE INNOVATION STEERING COMMITTEE REVIEW

DECEMBER 6, 2018

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The Population Health Council, charged with making recommendations regarding the establishment of Health Enhancement Communities, submits this report to the Healthcare Innovation Steering Committee.

The Health Enhancement Community (HEC) strategy is an initiative of the Connecticut State Innovation Model (SIM), which is jointly implemented by the Office of Health Strategy (OHS) and the Department of Public Health (DPH). The HEC team comprised Mark Schaefer, PhD; Faina Dookh; Mehul Dalal, MD; Mario Garcia, MD; Amy Smart; Kristin Sullivan; and Trish Torruella. Report contributors: Diane Aye, Yongwen Jiang, Celeste Jorge, Laura Hayes, Lloyd Mueller, Laurie Ann Wagner, and Xi Zheng.

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EXECUTIVE SUMMARY

Introduction

Improving the health and well-being of all residents in Connecticut and reducing the rising trends of Connecticut's health care costs depends on improving community health and health equity[1] and preventing people who live, work, learn, and worship in communities from experiencing poor health. The proposed Health Enhancement Community (HEC) Initiative presented in this framework and described in more detail in the accompanying HEC Technical Report, is aimed at supporting the health and well-being of individuals and families in communities across the state by improving community health and healthy equity and preventing poor health. This will be achieved through having Health Enhancement Communities (HECs) form and operate throughout the entire state. The HECs would work collaboratively to improve the social, economic, and physical conditions within communities that enable individuals and families to meet their basic needs, achieve their health and well-being goals, and thrive throughout their lives.

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Community health means that the social, economic, and physical conditions within a community enable individuals and families to meet their basic needs, achieve their health and well-being goals, and thrive throughout their lives.

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Equity in health refers to how uniformly services, opportunities and access are distributed across groups and places, according to the population group. Equity in health implies that ideally everyone could attain their full health potential and that no one should be disadvantaged from achieving this potential because of their social position or other socially determined circumstance. Efforts to promote equity in health are therefore aimed at creating opportunities and removing barriers to achieving the health potential of all people. It involves the fair distribution of resources needed for health, fair access to the opportunities available, and fairness in the support offered to people when ill.

The HEC Initiative is a place-based initiative that will support long-term, collaborative, and cross-sector efforts that improve community health in defined geographies through broad, systemic change. HECs will implement multiple, interrelated strategies to address the social determinants of health[2] that cause or contribute to poor health, health inequities, and health disparities in Connecticut's communities. Social determinants of health are conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks. Social determinants of health include factors such as income and wealth, housing, health systems

[1] Health equity definition adapted from the World Health Organization Concept Paper as cited by the American Medical Student Association.

[2] Healthy People 2020. https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health. Date accessed 10/8/18.

and services, employment, education, transportation, social environment, public safety, and physical environment.[3]

The HEC Initiative also includes pursuing multiple innovative financing strategies to support and sustain HECs over time. The financing strategies would seek to reward HECs for health outcomes, health care savings, and other economic value they produce.

Framework Development

This HEC framework articulates the vision and goals for the HEC Initiative and recommends key priorities and parameters for the initiative and HECs. It does not include all the details or decisions about what the model will be and how it will look in communities. The intent is for communities to make many of the decisions about what HECs are and do so that those decisions reflect the realities of their communities.

This framework is meant to guide a more detailed planning phase in 2019. During this phase, many of the elements of the model will be further developed. Communities will develop plans for becoming HECs through an iterative process that includes involving community members in decision-making for HEC design, formation, and operation.

This HEC framework was created with extensive input during an iterative stakeholder engagement process. That process included input from a diverse set of stakeholders across Connecticut, including more than 225 community members and more than 50 groups, organizations, agencies, and/or individuals. The input from stakeholders was used to develop the framework and/or validate key elements of the framework, including the priorities, parameters, and processes described in this report.

A more detailed description of the planning process approach and stakeholder groups engaged is provided in Appendix 2 of this report. Additional community member and stakeholder engagement will occur in 2019.

HEC Framework Design Principles

Described in more detail in this report, several principles emerged throughout the stakeholder engagement process that guided the development of the HEC design.

- Ongoing involvement of community members and community members in making decisions about what HECs are and do in their communities
- Improving community health and not just preventing poor health a central outcome of the HEC Initiative
- Improving health equity[4] as a central outcome of the HEC Initiative
- Addressing social determinants of health that cause or contribute to poor health, health inequity, and preventable costs

[3] National Academies of Sciences, Engineering, and Medicine. 2017. *Communities in Action: Pathways to Health Equity.* Washington, DC: The National Academies Press. https://doi.org/10.17226/24624.
[4] Disparities, Healthy People 2020. (n.d.). *Office of Disease Prevention and Health Promotion*. https://www.healthypeople.gov/2020/about/foundation-health-measures/Disparities. Date accessed 8/8/18.

- A place-based initiative that will support long-term, collaborative, and cross-sector efforts that improve community health in defined geographies through broad, systemic change
- Upfront focus on sustainability strategies
- Inclusion of components that will be the focus across all HECs balanced with the flexibility for HECs to adapt what they are and do to address the needs of their communities and partners effectively
- Focus on speed to action so that HECs can more readily and effectively advance to the action phase
- Leveraging existing assets that are already working to improve community health and health equity and prevent poor health

The HEC Framework

The Population Health Council proposes the establishment of the HEC Initiative and HECs. The HEC Initiative envisions having sustainable, multi-sector collaboratives in every geography in Connecticut that implement community health, health equity, and prevention strategies in their communities and reduce costs and cost trends for critical health priorities. Specifically, HECs will:

- Be collaboratives that include community members and partners from multiple sectors.
    - Examples: residents, community-based organizations, health care providers, local health departments, local government, social services agencies, schools, housing agencies, and others
- Be accountable for improving prevention, health risk, and healthy equity outcomes and reducing costs and cost trends for the health priorities.
- Have a defined geographic area that they serve.
- Have a formal structure and defined ways of making decisions together.
- Identify and implement strategies that address social determinants of health that cause or contribute to poor health, health inequity, and preventable costs.
- Be sustainable, including through financing that rewards HECs for improving health, preventing poor health, and producing savings and economic value.

Described in detail in this report, at the heart of the recommended HEC Initiative are:

- **Goals** that are ambitious in the potential magnitude of their impact but achievable over the next 5-10 years:
    - Make Connecticut the healthiest state in the country.
    - Make Connecticut the best state for children to grow up.
    - Slow the growth of Connecticut's health care spending.

- **Health priorities** that are focused, can make a significant impact on the health and well-being of individuals and families across the lifespan and for which there are existing or new interventions that work:
    - **Improving Child Well-Being in Connecticut Pre-Birth to Age 8 Years:** Assuring all children are in safe, stable, and nurturing environments[5] by preventing Adverse Childhood Experiences (ACEs) and increasing protective factors that build resilience and mitigate the impact of ACEs
    - **Improving Healthy Weight and Physical Fitness for All Connecticut Residents:** Assuring that individuals and populations maintain a healthy or healthier body weight and have equitable opportunities to do so by preventing overweight and obesity across the lifespan as well as the associated risks of developing serious health conditions
    - **Improving Health Equity**: The HEC framework includes health equity throughout the design, including having specific measures of health equity and interventions that specifically address health equity
- **Key elements** that enable HECs to function; ensure community member ownership of what matters most to them; implement coordinated, multi-pronged strategies among multiple sectors; and achieve defined outcomes
- **Financing** that can support and sustain community prevention strategies and accrue to who produces the savings and other economic benefits through those strategies

Conclusion

The HEC Initiative can create the right combination of conditions for moving the needle on prevention at a state level and help usher in a new era with prevention at the forefront of how Connecticut and the nation pursues—and pays for—the health and well-being of its residents. The HEC strategy is designed to address the complex and multi-factorial needs and challenges facing communities and "monetize" prevention so that activities and interventions that produce results can be sustained. With focused health priorities, effective structures, and appropriate financing, Connecticut can be the healthiest state in the country and the best state for children to grow up, slowing the growth of Connecticut's health care spending.

EXAMPLE OF A HEALTH ENHANCEMENT COMMUNITY

Ultimately, HECs should improve the health and well-being of individuals and families in communities across Connecticut. This hypothetical HEC example illustrates what the vision of an HEC is and what an HEC can do to improve child well-being and healthy weight and physical fitness. Note that this example is to show how the different HEC elements described in this report could operate together. *All details are for illustrative purposes only.*

[5] Centers for Disease Control and Prevention's Essentials for Childhood Framework. https://www.cdc.gov/violenceprevention/childabuseandneglect/essentials.html. Date accessed 8/6/18.

Geography: As a prospective HEC, an existing community collaborative reached out to two neighboring communities and negotiated their inclusion in the HEC based on data analysis that showed some similar patterns of need, community resident listening sessions and key informant interviews, and previous successful joint efforts. Their proposed geography includes urban and suburban rural areas and meets the state's requirements.

Community Assets and Needs: To develop their application to become an HEC and their implementation plan, the prospective HEC collected and collectively reviewed data and information from multiple existing and new quantitative and qualitative sources to gain a detailed and nuanced understanding of assets and needs. These included community activities throughout their proposed geography; recent community needs assessments; and input from community-based organizations, local agencies, health care providers, faith-based organizations, child care providers, and schools. The HEC also used the state data exchange system, CDAS, to identify "hot spots" related to child well-being being and healthy weight and physical fitness indicators as well as indicators related to the root causes of ACEs and overweight/obesity. The data and information were used to identify HEC strategies.

Partnerships: The original community collaborative comprised 30 organizations, including multiple health and health care-related community-based organizations; the local health department; a federally qualified health center that is a Medicaid PCMH+ Participating Entity; two hospitals that are part of a joint Accountable Care Organization; multiple health and health care focused community-based organizations; the YMCA; Planned Parenthood; United Way; and a local a community foundation. Given their analysis and knowledge of what is contributing to ACEs and overweight/obesity in their geography, they expanded their partners to include existing community groups; the Community Action Agency; housing agencies; schools and school districts; community colleges; government agencies and departments; community-based and social service organizations that contribute to community health; social justice organizations and advocates; faith-based, civic, and cultural organizations; economic development offices; Community Development Corporations; elected officials; policy and advocacy organizations; law enforcement agencies; Chambers of Commerce; employers; substance use disorder providers; behavioral health providers; and transit districts. They developed a participant agreement that clarified roles and expectations, including those related to resources from and for each partner. One of the local employers, the two hospitals, and the health center have all agreed to identify ways they can further support community health by contributing to the economic vitality of the communities in which they operate.

Structure: The prospective HEC developed a structure that includes three existing community groups, a management team/backbone organization unaffiliated with an organization, and a formal governance structure. The management team/backbone organization worked with the community groups to provide data to inform their decisions and identify needed resources. Given that they brought many new partners to the table, they recognized the need to develop a governance structure that balanced the need to make decisions quickly with methods for including all their partners in some way to guide good decision-making and keep partners engaged in the HEC process. They formed a governing body with an upper limit of 20 members, which is responsible for oversight of the HEC and routine decisions. They ensured that each sector had balanced representation on the governing body. They also established a full membership committee and other key committees (e.g., finance, performance) that include other participants. The governing bodies and committees, the processes for electing members and officers to that governing body and terms of service, the scope of authorities, the process by which the governing

body makes decisions, the roles and responsibilities of its members, etc., were codified in a partnership agreement and bylaws, which each member had to sign. They contract with one of their local hospitals as a fiduciary agent and contract with a local law firm for as-needed legal support. The management team/backbone organization compiled and shared existing data and information from previous community engagement efforts with the community groups and governance structure to develop an initial plan for HEC interventions, measures, and roles of each arm of the structure and participating partners.

Interventions: The HEC first identifies existing entities, interventions, and efforts to address the root causes of child well-being and healthy weight and physical fitness in their geography and develops a plan to leverage what is already working and fill gaps by implementing new interventions. Led by the community groups, the HEC identifies several interventions. As examples, for child well-being they implemented interventions aimed at:

- **Systems**: Creating an annual community report card for child well-being that is used by all HEC partners to assess progress on goals, determine resource allocation, and raise and maintain the visibility of child well-being.
- **Policy:** Expanding access to legal aid services related to housing quality and discrimination. Community advocacy to ensure enforcement of existing housing policies.
- **Programs**: Aligning existing home visitation programs to create a unified approach and a seamless experience for families. Securing financing to expand affordable housing in a community identified as a "hot spot."
- **Cultural Norm**: Implementing "Breaking the Cycle" social marketing campaign, which helps parents understand and stop the cycle of abuse and addresses the stigma associated with parents needing help in parenting as well as a campaign to promote community and institutional norms for a shared, community-wide responsibility for child well-being. Implementing Partnering with Parents, which is a parent-designed curriculum to help service organizations develop better partnerships with parents.

Measures and Performance Monitoring: Through an iterative process with community groups and HEC partners, the HEC identifies process and outcome measures for each of their interventions, using validated measures where they exist. They also are accountable for performance under the state's prevention and health equity scorecard and benchmarks. The HEC's Performance Committee, which is part of its governance structure, is charged with continually monitoring performance, reporting to the state and supporting community groups in developing corrective action plans. The HEC uses the CDAS dashboards and the data that are stratified across race/ethnicity, socioeconomic status, and other population characteristics to continually identify the needs of their population and assess performance. They also develop specifications and processes for collecting data from their partners and other sources and upload their process and outcome measure data directly to CDAS. They develop and release periodic, easy-to-understand updates about HEC progress and performance throughout their network and communities, including at community meetings where they can get additional design and implementation feedback.

HEC Advisory Committee: The HEC has a member on a statewide HEC Advisory Committee. Among other actions, members create and HECs advocate for a policy to alter SNAP benefits to provide incentives for healthier foods.

State Partnership Support: The HEC also uses the sample agreements and bylaws in the Governance Package released by the State Partnership and receives training and technical assistance from experts on interventions that improve health equity, group facilitation skills, and using CDAS, among other support.

Financing: The HEC is supported by pooled funds from the two hospitals' community benefits funds; braided funding from local, state, and federal sources; local and state foundations; and, later in the lifecycle of the HEC, a portion of shared savings from health care purchasers such as Medicare and Medicaid. The management team/backbone organization distributes funding based on pre-established policies developed by all three arms of HEC structure. The HEC also supported their housing partners in pursuing a Low-Income Housing Tax Credit for low-income housing. The HEC is part of the Multi-Payer Demonstration, which enables the HEC to secure significant long-term financing through the overall HEC Initiative achieving defined prevention and cost benchmarks.

1. BACKGROUND

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[8] National Academies of Sciences, Engineering, and Medicine. 2017. *Communities in Action: Pathways to Health Equity.* Washington, DC: The National Academies Press. https://doi.org/10.17226/24624.

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2. THE NEED FOR HEALTH ENHANCEMENT COMMUNITIES IN CONNECTICUT

Although Connecticut ranks fifth in overall health nationwide—behind Massachusetts, Hawaii, Vermont, and Utah,[9] between 2015 and 2017, Connecticut experienced a downward trend in rankings related to healthy weight, including physical activity and diabetes, as well as measures related to child well-being, including children in poverty, low birthweight births, and infant mortality.[10,11] Across these 5 measures, Connecticut currently ranks well below the top 10 states.[12] Additionally, these rankings represent the population on average and mask the significant health disparities that persist, disparities that start early and carry throughout the lifetime. Connecticut currently ranks 40th in disparities in health status where the higher the ranking the larger the disparities. White residents of the state are approximately 1.5

[9] America's Health Rankings, 2017 Annual Report. https://www.americashealthrankings.org/learn/reports/2017-annual-report/state-summaries-connecticut. Date accessed 8/14/18.
[10] America's Health Rankings, 2016 Annual Report. https://assets.americashealthrankings.org/app/uploads/ahr_annual-report_executive_summary_v1.pdf. Date accessed 8/14/18.
[11] America's Health Rankings, 2015 Annual Report. https://www.americashealthrankings.org/explore/annual/measure/Overall/state/CT?edition-year=2015. Date accessed 10/17/18.
[12] The 2017 Connecticut rankings for the five measures are as follows: Physical Activity – 18, Diabetes – 19, Children in Poverty – 21, Low Birthweight Births – 22, and Infant Mortality – 15.

times more likely to report high health status than Black or Hispanic residents, residents making $75,000 or more annually 2.4 times more likely to report high health status than those making less than $25,000 annually, and college graduates 2.8 times more likely to report high health status than non-high school graduates.[13] These gaps in overall health across population groups result from many Connecticut residents and communities faring poorly across numerous measures of health. The HEC Initiative aims to reverse the downward trend in measures related to physical activity and child well-being, in part by improving health equity and reducing disparities, and move Connecticut's rankings into the top 10 states across these 5 measures within 10 years.

Connecticut is also ranked fifth among the states for children to grow up—behind New Jersey, Massachusetts, Vermont, and New Hampshire.[14] This ranking is based on measures of infant mortality, food insecurity, high school graduation, violence-related injury deaths, and teen birth rates—all measures aligned with the priority aims of the HEC Initiative. One of the three goals of the HEC Initiative is to move Connecticut into first place as the best state for all children to grow up, regardless of background or socioeconomic status, within 10 years.

Connecticut is a higher-cost state in overall health care spending per person relative to the national average, and health care spending has consistently outpaced growth in the state economy. Although the state's health care spending growth was slightly lower than the national average between 2004 and 2014, Medicare spending data show that Connecticut is both high-cost and higher-growth relative to national averages.[15] Connecticut is also the highest cost state for Medicare in New England. Taken together, these historical trends demonstrate the need for Connecticut to control health care spending. In contrast to Medicare, Connecticut Medicaid reduced its per-person spending by a greater percentage (5.7 percent) than any other state in the country.[16] However, the HEC Initiative aims to further reduce Connecticut's health care spending by reducing the prevalence of avoidable health problems and associated health inequities, which predominate in low-income and otherwise vulnerable populations including those covered by Medicaid. One of the three goals of the HEC Initiative is to reduce Connecticut's overall trajectory of health care spending per person.

Two health priority aims have emerged that will help Connecticut achieve those three goals:

- Improving Child Well-Being in Connecticut from Pre-Birth to Age 8 years
- Improving Healthy Weight and Physical Fitness for All Connecticut Residents

These priorities have been identified because achieving these aims would prevent a host of serious health conditions and early death of residents throughout the state. These aims can be achieved by preventing adverse childhood experiences (ACEs) and overweight and obesity for all Connecticut

[13] America's Health Rankings, 2017 Annual Report. https://www.americashealthrankings.org/learn/reports/2017-annual-report/state-summaries-connecticut. Date accessed 8/14/18.
[14] End of Childhood Report 2018. Save the Children. https://www.savethechildren.org/us/about-us/resource-library/end-of-childhood. Date accessed 8/14/18.
[15] Medicare Geographic Variation Public Use File, 2007-2016.
[16] Lassman, D., Sisko, A.M., Catlin, A., Barron, M.C., Benson, J., Cuckler, G.A., Hartman, M., Martin, A.B., and Whittle, L. (2017). Health Spending By State 1991-2004: Measuring Per Capita Spending By Payers and Programs. *Health Affairs, 36*(7). doi: https://doi.org/10.1377/hlthaff.2017.0416.

residents, which, due to their significant contributions to increased morbidity and mortality, diminished quality of life, and increased health care costs of other health conditions, have a compounding impact.

This section will address:

- The need for a place-based approach
- The significance of these two priority aims
- The health burden of ACEs and overweight and obesity
- The cost burden of ACEs and overweight and obesity

2.1. Need for a Place-Based Approach

The HEC Initiative is a place-based initiative because where people live can limit their potential for leading healthy lives and restrain their economic mobility. Achieving the goals of the HEC Initiative requires a multi-faceted strategy rooted in communities and focused on addressing social determinants of health that lead to poor health outcomes and create disparities and inequities across population groups.

One of the most notable and successful place-based initiatives, inspiring the federal Promise Neighborhood grant program, is the Harlem Children's Zone (HCZ). The HCZ project began as one block in the 1990s and was driven by the belief that the needs of children and their community must be addressed together. Examples of these needs included crumbling apartments, rampant drug use, failing schools, violent crime, and chronic health problems. Since its inception, the project has grown to 97 blocks serving more than 10,000 youth and nearly 10,000 adults by providing comprehensive supports, education, and social services; stabilizing families; preventing homelessness; and promoting healthy lifestyles. In fiscal year 2017, 97 percent of HCZ 12th graders were accepted to college, and 100 percent of children enrolled in their pre-Kindergarten program were assessed as school-ready.[17]

The HEC Initiative will take a similar approach but across the entire state. Each HEC will develop and adapt their particular strategies to reflect the specific realities of their communities. The HEC Initiative also will build on local and state work already being done to improve community health and health equity and prevent poor health. Examples of some of that existing work are included in Section 6.3.2 of this report.

2.2. Significance of the Priority Aims

2.2.1. Improving Child Well-Being Pre-Birth to Age 8 years

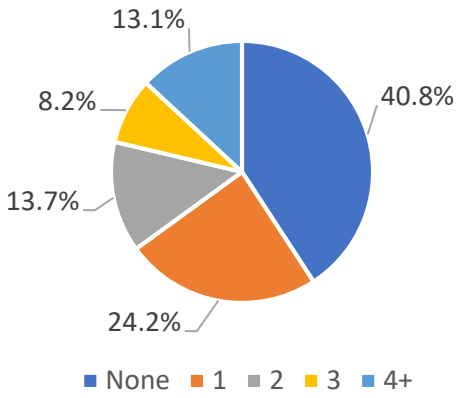
Safe, stable, nurturing relationships and environments in the first five years of life increase a child's opportunity for a healthy adulthood. Achieving this aim for children throughout Connecticut requires preventing Adverse Childhood Experiences (ACEs) and mitigating the impact of ACEs. ACEs are stressful or traumatic events or situations experienced by children. Ample evidence reveals the associations between ACEs and health conditions and indicators leading to adult morbidity and mortality. The Behavioral Risk Factor Surveillance System (BRFSS), a household phone survey of adults, defines ACEs

[17] Harlem Children's Zone. *Changing the Odds for Our Kids and Our Nation*. 2016-2017 Biennial Report. https://hcz.org/wp-content/uploads/2017/10/HCZ-biennial-layout_FINAL.pdf. Accessed 11/14/2018.

based on several types of abuse and adverse experiences: emotional, physical, and sexual abuse; intimate partner violence; household substance abuse; household mental illness; parental separation or divorce; and incarcerated household member.

More than half of adults in Connecticut report experiencing at least one ACE and 13.1 percent report experiencing four or more (Figure 1).[18]

Figure 1. Percent of Adults Who Report Adverse Childhood Experiences, By Number of Adverse Childhood Experiences, Connecticut, 2017



Source: CT DPH, 2017

A 2016 survey of child caretakers in Connecticut found that 19.4 percent of children aged birth to 17 had two or more ACEs.[19] The survey used an expanded definition of ACEs compared to BRFSS with the additions of experiencing the death of a parent, socioeconomic hardship, and being treated or judged unfairly due to race/ethnicity and did not include questions related to sexual or emotional abuse. Notably, 57.4 percent of Hispanic respondents and 53.6 percent of Non-Hispanic, Black respondents reported at least one ACE, compared to 42.2 percent of respondents overall. Additionally, children living in households with incomes over 400 percent of the Federal Poverty Level experienced at least one ACE less frequently (25.6 percent) than respondents overall (42.2 percent). According to the Centers for Disease Control and Prevention (CDC), an estimated one in seven children have experienced child abuse and neglect in the past year, and rates of child abuse and neglect are higher among children in poverty.[20]

[18] CT DPH, 2017

[19] 2016 National Survey of Children's Health. The survey defined adverse family experiences as: (1) socioeconomic hardship, (2) divorce/separation of parent, (3) death of parent, (4) parent served time in jail, (5) witness to domestic violence, (6) victim of violence or witness of neighborhood violence, (7) lived with someone who was mentally ill or suicidal, (8) lived with someone with alcohol/drug problem, (9) treated or judged unfairly due to race/ethnicity.

[20] Fortson, B. L., Klevens, J., Merrick, M. T., Gilbert, L. K., & Alexander, S. P. (2016). *Preventing child abuse and neglect: A technical package for policy, norm, and programmatic activities.* Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. https://www.cdc.gov/violenceprevention/childabuseandneglect/index.html. Accessed 8/14/2018.

A study conducted by Kaiser Permanente in collaboration with the CDC examined the relationship between multiple measures of adult risk behavior, health status, and disease and seven ACE categories: psychological, physical, or sexual abuse; violence against the mother; living with household members who were substance abusers, mentally ill or suicidal, or ever imprisoned.[21] Adults who had experienced four or more categories of childhood exposure compared to those who had none were more likely to have multiple health risk factors. They were seven times more likely to experience alcohol abuse, four times more likely to use illicit drugs, 12 times more likely to attempt suicide, and two times more likely to be a smoker. The study also showed a graded dose-response relationship to ischemic heart disease, cancer, chronic lung disease, skeletal fractures and liver disease. A follow-up assessment of adults surveyed during 1995-1997 was conducted in 2009 and found that individuals with six or more ACEs compared to those who had none died 20 years earlier on average.[22]

Analyses of BRFSS have also shown a relationship between ACEs and health indicators. Similar to previous studies, individuals with four or more ACEs had greater odds of reporting myocardial infarction, asthma, fair/poor health, frequent mental distress and disability, and those with one to six ACEs had greater odds of diabetes.[23] In addition to having a cumulative effect of ACEs on health indicators, individual ACEs have also been found to have differential relationships with risky behaviors and comorbidity.[24] Based on a meta-analysis in 2016, the strongest associations were found for problematic drug use and interpersonal and self-directed violence, potentially leading to greater ACE risk for the next generation.[25]

An initiative led by Chris Kelleher of the Center for Evidence-based Policy in Oregon integrated data from various state agencies and sources to identify characteristics of a mother at the time of a child's birth that increased the risk of child maltreatment and entry into foster care.[26] This list included the maternal/child characteristics of smoking during pregnancy, low birthweight, and teenage pregnancy as well as socioeconomic, educational, correctional, and other characteristics of the caregivers and home life.

Tobacco is used during pregnancy for 3.5 percent of all births, with the highest rates attributable to White, Non-Hispanic mothers, 4.1 percent. An estimated 7.9 percent of Connecticut births classify as low birthweight, weighing less than 2,500 grams, and across the state, disparities persist. Approximately 12.8 percent of births to Black or African American mothers, 8.5 percent of births to Hispanic mothers, and 9.5 percent of births to mothers who have not completed high school classify as low birthweight.

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[21] Felitti, VJ, Anda, RF, Nordenberg, D, et al. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the Adverse Childhood Experiences (ACE) Study. *Am J Prev Med 14*(4), 245-258.

[22] Brown, DW, Anda, RF, Tiemeier, H, et al. (2009). Adverse childhood experiences and the risk of premature mortality. *Am J Prev Med, 36*(5), 389-96.

[23] Gilbert, LK, Breiding, MJ, Merrick, MT, et al. (2010). Childhood adversity and adult chronic disease: an update from ten states and the District of Columbia. *Am J Prev Med, 48*(3), 345-349.

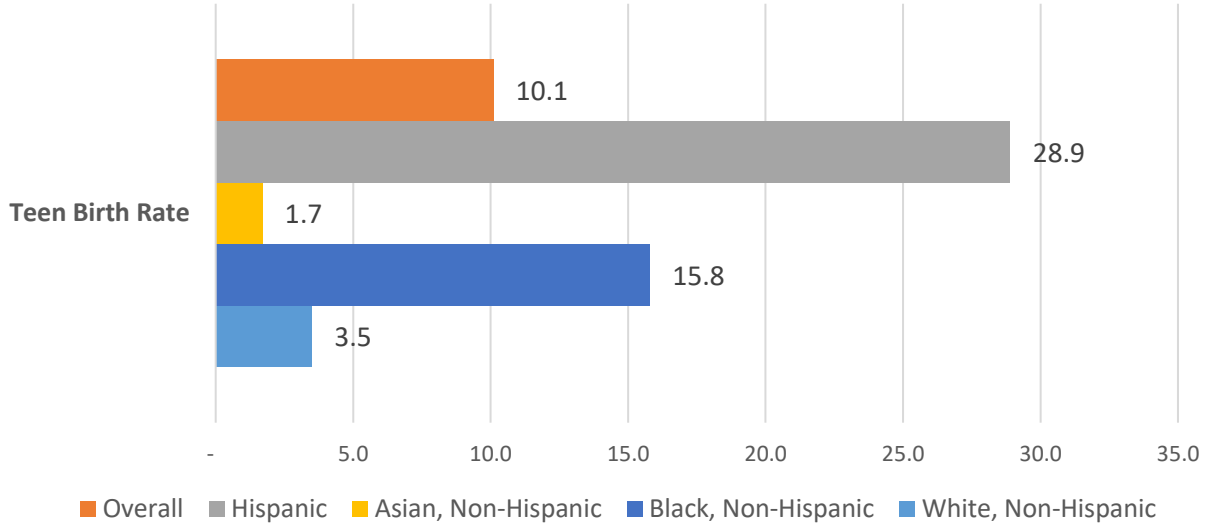
[24] Campbell, JA, Walker, RJ, Egede, LE. (2015) Associations between adverse childhood experiences, high-risk behaviors, and morbidity in adulthood. *Am J Prev Med, 50*(3), 344-352.

[25] Hughes, K, Bellis, MA, Hardcastle, KA, et al. (2017) The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis. *Lancet Public Health, 2*, e356-66.

[26] Data, Evidence, and Modeling: The Oregon Experience. Chris Kelleher. Center for Evidence-based Policy presentation at Southern California Open DataFest. January 24, 2017.

Disparities also exist for teenage births in Connecticut. As shown in Figure 2, the birth rate among White, Non-Hispanic women 15-19 years of age is only 3.5 per 1,000, compared to 28.9 per 1,000 Hispanic women ages 15-19.[27]

Figure 2. Teen (15-19 Years) Birth Rate Per 1,000 Population By Race/Ethnicity, 2015



Source: Connecticut Office of Vital Records 2015

The health effects of early childhood adversity have also been explained by neurobiological factors and the impact of chronic stress on early brain development.[28] Childhood maltreatment has been associated with changes in the amygdala, hippocampus, and the prefrontal cortex, areas of the brain that have been shown to play a role in learning and memory, emotional processing, and ability to adapt to stress. Integrating the evidence of the impact of adversity on physical and mental health, studies have suggested that this early damage could lead to loss of functioning that could lead to chronic diseases, and cognitive and social disruption that could result in risky behaviors.[29,30] Addressing early childhood adversity may have a broader impact on health and life opportunities. While studies on the effect of ACEs on health indicators often control for socioeconomic variables, ACEs have also been shown to be associated with education, unemployment, and poverty status.[31] Individuals with four or more ACEs

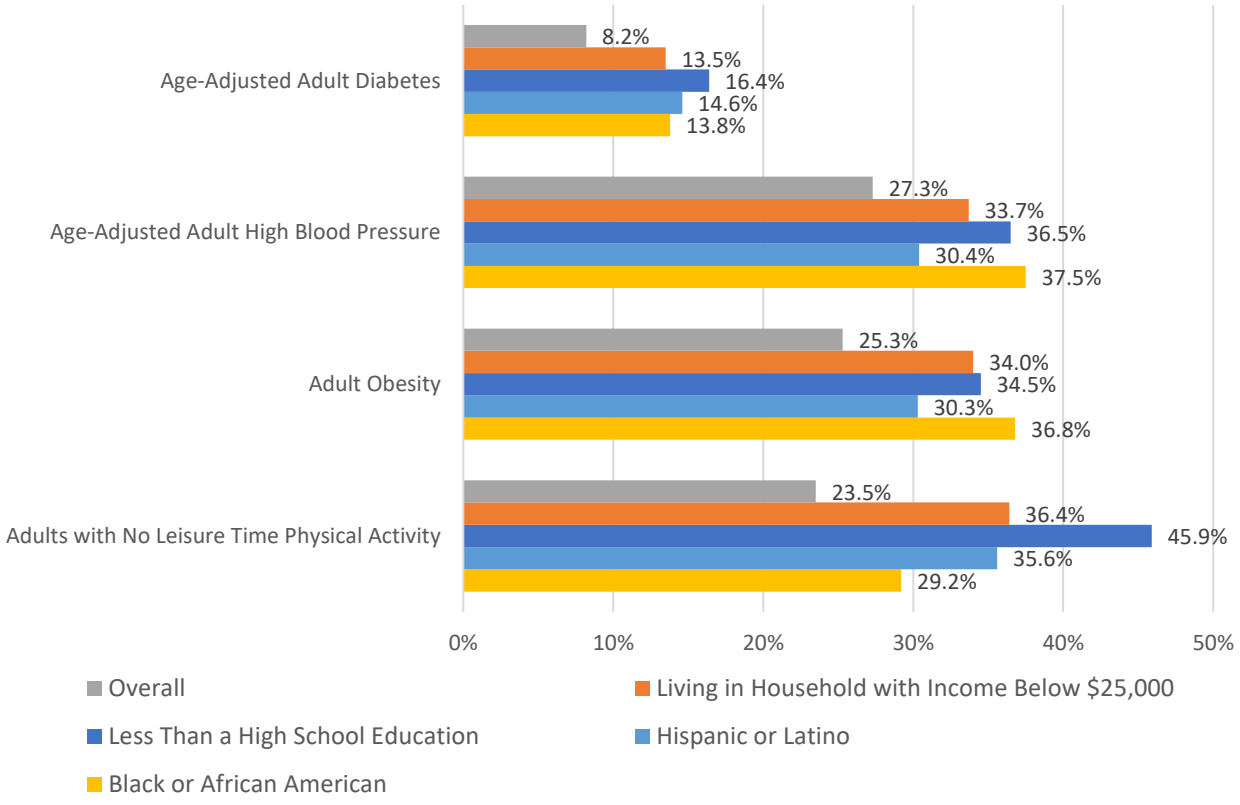
[27] Connecticut Office of Vital Records, 2015.
[28] McCrory, E, De Brito, SA, Viding, E. (2011). The impact of childhood maltreatment: a review of neurobiological and genetic factors. *Frontiers in Psychiatry, 2*(48), 1-14.
[29] Shonkoff, JP, Garner, AS, and The Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, Adoption, and Dependent Care, and Section on Developmental and Behavioral Pediatrics. (2012). The Lifelong Effects of Childhood Adversity and Toxic Stress. *Pediatrics, 129*, e232-e246.
[30] Campbell, JA. (2015) Ibid.
[31] Metzler, M, Merrick, MT, Klevens, J, et al. (2016). Adverse childhood experiences and life opportunities: Shifting the narrative. *Children and Youth Services Review, 72*, 141-149.

were 2.34 times as likely to not graduate high school, 2.3 times as likely to be unemployed, and 1.5 times as likely to live in a household reporting poverty.

2.1.2. Increasing Healthy Weight and Physical Fitness

More than a quarter (25.3 percent) of Connecticut adults are obese, and rates are higher among adults who are Black or African American, Hispanic or Latino, have not graduated high school, or have household income below $25,000.[32] Adults fitting these characteristics also exhibit higher rates of diabetes, high blood pressure, and inadequate physical fitness. Black or African American adults exhibit an estimated age-adjusted diabetes prevalence rate of 13.8 percent compared to the overall Connecticut adult rate of 8.2 percent and exhibit an estimated obesity rate 11.5 percent higher than the overall Connecticut adult rate.[33] (Figure 3)

Figure 3. Connecticut Adult Prevalence by Characteristic, 2015



Source: CT DPH, BRFSS 2015

Body mass index (BMI), although not diagnostic, is used as a screening tool to define adult overweight and obesity.[34] According to the BMI Index Chart, BMI<25 kg/m^2 is the normal or underweight range, BMI

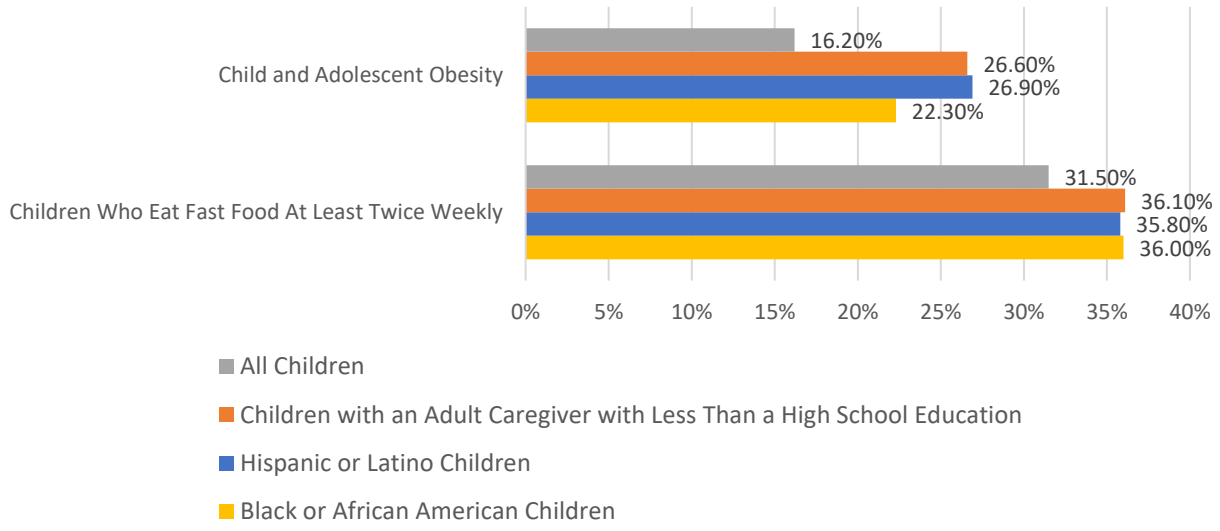
[32] CT DPH, BRFSS 2015
[33] *Ibid*
[34] Defining Adult Overweight and Obesity. (n.d.). *Centers for Disease Control and Prevention*. https://www.cdc.gov/obesity/adult/defining.html. Date accessed 8/14/18.

of 25-30 is the overweight range, and BMI>30 is the obese range. Clinical guidelines for the treatment of the overweight or obese patient include: 1) an assessment of the degree of overweight and overall risk status, and 2) management, which includes both reducing excess body weight and instituting other measures to control accompanying risk factors.[35]

Nationwide, in 2015-2016, an estimated 39.8 percent of adults and 18.5 percent of youth were obese, and Hispanic adults (47 percent) and Non-Hispanic Black adults (46.8 percent) had a higher prevalence of obesity compared to Non-Hispanic White adults (37.9 percent).[36] Of particular concern is that the prevalence of obesity has shown an increasing trend. Obesity prevalence in 2015-2016 had increased 9.3 percentage points for adults and 4.6 percentage points for youth, compared to the 1999-2000 rates.

An estimated 16.2 percent of Connecticut children are obese and consistent disparities are present in data related to healthy weight and physical fitness of children in Connecticut. As shown in Figure 4, of children with an adult caregiver without a high school degree, an estimated 36.1 percent eat fast food at least twice weekly compared to 31.5 percent of all Connecticut children and exhibit obesity rates 10 percent higher than children overall.

Figure 4. Connecticut Child Prevalence by Characteristic, 2011-2015



Source: CT DPH, BRFSS 2011-2015

Additionally, certain behaviors of adult caregivers in Connecticut correlate with child health outcomes. Children living with a parent who does not participate in leisure time physical activities show a greater prevalence of obesity (23.1 percent) compared to children living with a parent participating in leisure

[35] Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: the Evidence Report. (1998). NIH Publication No. 98-4083, Bethesda, MD: National Institutes of Health.
[36] Hanes, CM, Carroll, MD, Fryar, CD, Ogden, CL. (2017). Prevalence of Obesity Among Adults and Youth: United States, 2015-2016. NCHS Data Brief No. 288, Hyattsville, MD: National Center for Health Statistics.

time physical activities (14.3 percent).[37] Infant feeding practices, including nutrition patterns, have also shown longer-term effects on a child's weight and eating habits. One study that assessed infants from the third trimester of pregnancy to age 12 months and then followed up with participants six years later found the following[38]:

- Waiting longer to introduce solid foods or drinks other than breast milk reduces the chances that a child will have ear infections, throat infections, or sinus infections at six years of age.
- Children who breastfeed longer have shown to drink water and eat fruits and vegetables more often and drink fruit juice or other sugar-sweetened beverages less often at six years of age.
- Children who drink sugar-sweetened beverages during the first year of life are twice as likely to drink those types of beverages at six years of age.
- Children who rarely eat fruits and vegetables during the first year of life are more likely to continue this pattern at six years of age.

While the relationship between obesity and income and education is complex, data show a lower prevalence of obesity is observed among individuals in the highest income groups (with incomes greater than 350 percent of the Federal Poverty Level) and among college graduates, although patterns were not consistent across all sex and racial/Hispanic origin subgroups.[39] Data suggest that the cause of obesity involves the integration of multiple factors that include family history and genetics, behavior, and social and environmental factors. Studies have shown evidence of obesity predisposing genes that affect biological pathways and have been associated with food intake in children and adults.[40] However, complex interactions between multiple genes and factors such as age, gender, ethnicity, physical activity, and diet can modulate genetic predisposition to obesity and response to treatment.

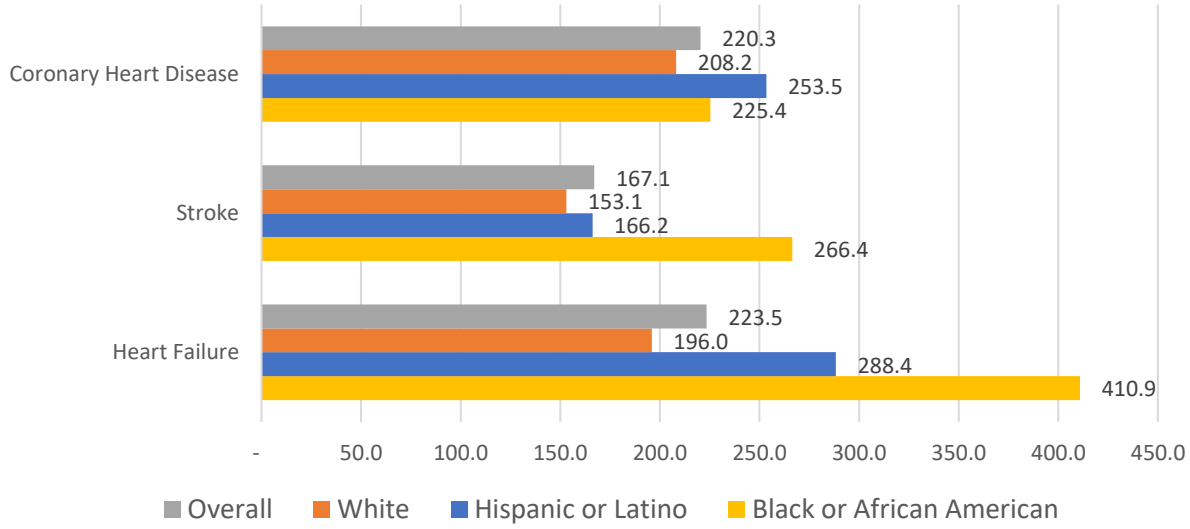
The contribution of overweight and obesity to morbidity and mortality has been well studied. Individuals who have obesity have been shown to have an increased risk for many conditions, including hypertension, Type 2 diabetes, coronary heart disease, stroke, gallbladder disease, osteoarthritis, sleep apnea and respiratory problems, and some types of cancer.[41] An age-adjusted analysis from the Framingham Heart Study showed that BMI was significantly positively associated with multiple risk factors for coronary heart disease, which included systolic blood pressure, fasting glucose levels, plasma total cholesterol, VLDL cholesterol, and LDL cholesterol, and inversely associated with HDL cholesterol

[37] CT DPH, BRFSS 2011-2015
[38] Moreno M. Early Infant Feeding and Obesity Risk. JAMA Pediatr. 2014;168(11):1084. doi:10.1001/jamapediatrics.2013.3379
[39] Ogden, CL, Fakhouri, TH, Carroll, MD, et al. (2017). Prevalence of Obesity Among Adults, by Household Income and Education-United States, 2011-2014. *MMWR Morb Mortal Wkly Rep 2017, 66*, 1369-1373.
[40] Choquet, H, and Meyre, D. (2011). Genetics of Obesity: What have we Learned? *Current Genomics, 12*(3), 169-179.
[41] Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: the Evidence Report. (1998). NHLBI Obesity Education Initiative Expert Panel on the Identification, Evaluation, and Treatment of Obesity in Adults (US), Bethesda, MD: National Heart, Lung, and Blood Institute.

levels.[42] Data from the National Health and Nutrition Examination Survey (NHANES) show that the prevalence of high blood pressure and high blood cholesterol was associated with higher BMI,[43] and the prevalence ratio was found to be highest for Type 2 diabetes and gallbladder disease.[44] In a 10-year study between 1986-1996, developing diabetes, gallstones, hypertension, colon cancer, heart disease and stroke increased with degree of overweight, and women and men with hypertension and high cholesterol had higher risk of developing additional morbidities.[45]

Hispanic and Black or African American adults in Connecticut exhibit higher rates of hospitalizations for obesity-related conditions such as coronary heart disease and heart failure. As shown in Figure 5 below, age-adjusted estimated inpatient hospitalization rates for Black or African American adults for heart failure (410.9 per 100,000) are more than twice as high as those for White adults (196.0 per 100,000).[46]

Figure 5. Connecticut Adult Age-Adjusted Inpatient Hospital Discharge Rate Per 100,000 by Race/Ethnicity, 2014



Source: Connecticut Hospital Inpatient Discharge Database, 2014 data

[42] Lamon-Fava, S., Wilson, P.W.F, and Schaefer, E.J. (1996). Impact of Body Mass Index on Coronary Heart Disease Risk Factors in Men and Women: The Framingham Offspring Study. *Arteriosclerosis, Thrombosis, and Vascular Biology, 16*(12), 1509-1515.
[43] Brown, C.D., Higgins, M., Donato, K.A., et al. (2000) Body Mass Index and Prevalence of Hypertension and Dyslipedemia. *Obesity Research, 8*(9), 605-619.
[44] Must, A., Spadano, J., Coakley, E.H., et al. (1999). The Disease Burden Associated with Overweight and Obesity. *JAMA, 282*(16), 1523-1529.
[45] Field, A.E., Coakley, E.H., Must, A., et al. (2001). Impact of Overweight on Risk of Developing Common Chronic Diseases During a 10-Year Period. *Arch Intern Med, 161*(13), 1581-1586.
[46] Connecticut Hospital Inpatient Discharge Database, 2014 data

An analysis conducted in 1993 to identify the major external factors that contribute to death in the U.S. concluded that a combination of dietary factors and sedentary activity patterns accounted for at least 300,000 deaths (14 percent of deaths) in 1990.[47] In 2000, analysis showed that poor diet and physical inactivity accounted for 365,000 deaths.[48] Although the association between BMI and mortality rates is complex, mortality rates from all causes for individuals with BMI>30 was generally 50-100 percent above individuals with BMI between 20-25.[49]

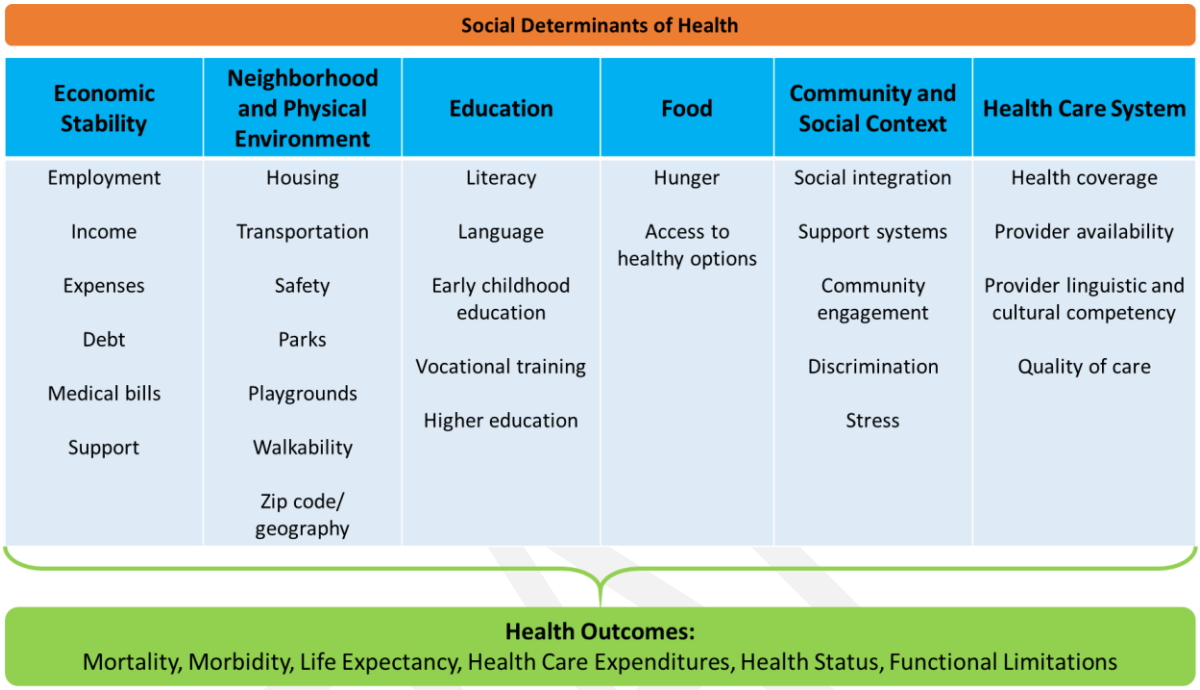
Studies also point to strategies that address the social and environmental factors that contribute to food consumption and physical activity.[50] Interventions that included modifications of the environment to create opportunities for healthier choices around physical activity and food intake have shown effects on physical activity or weight-related outcomes in children and adolescents.[51]

2.3. Social Determinants of Health and Other Root Causes of Priority Aims

HECs will focus on improving community health and health equity and preventing poor health by addressing the root causes that contribute to the prevalence of ACEs and overweight and obesity in Connecticut. Root causes are factors that directly and indirectly influence the health status of individuals within the environment in which they live. They fall into two groups: social determinants of health (Figure 6) and structural inequities, commonly reflected in racial and ethnic disparities. Root causes can include lack of education/educational opportunities, inequities related to culture and language, economic instability/socioeconomic position and inequities, lack of access to healthy foods/food deserts, housing instability, inadequate built environment/residential environment, physical insecurity (e.g., crime, violence), racial and ethnic disparities and inequities, lack of social and community supports, chronic and toxic stress and trauma, and poor access to health care. Community-level health outcomes result from unique combinations of root causes.

[47] McGinnis, J.M., and Foege, W.H. (1993). Actual causes of death in the United States. *JAMA, 270*(18), 2207-12.
[48] Mokdad, A.H., Mark, J.S., Stroup, D.F., and Gergerding, J.L. (2004). Actual causes of death in the United States. *JAMA, 291*(10), 1238-45.
[49] Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: the Evidence Report. (1998).
[50] James, W.P. (1995). A public health approach to the problem of obesity. *Int J Obes Relat Metab Disord, 19*(Suppl 3), S37-S45.
[51] Lipek, T., Igel, U., Gausche, R., et al. (2015). Obesogenic environments: environmental approaches to obesity prevention. *J Pediatr Endocr Met, 28*(5-6), 485-495.

Figure 6: Social Determinants of Health



Source: Recreated, from Kaiser Family Foundation[52]

The subsections below detail select root causes contributing to adverse outcomes related to weight, physical fitness, and child well-being. Although not exhaustive, the following root causes and their relation to poor health speak to the need for HECs to include interventions that address these root causes.

2.3.1. Lack of Education and Educational Opportunities

As previously noted, a higher prevalence of adverse health behaviors associated with chronic diseases, such as limited physical activity and unhealthy diets, is found in individuals with lower educational attainment or lower incomes. Additionally, children of mothers who did not graduate high school show an increased risk for maltreatment and entry into foster care.[53] BRFSS ACEs data show that when compared to participants with no ACEs, those with ACEs are more likely to report high school non-completion, unemployment, and living in a household below the Federal Poverty Level.[54]

Overall, 87.9 percent of Connecticut high schoolers graduate within four years; however, the range of the graduation rates across school districts varies considerably. Some of the largest school districts

[52] Artiga, S, Hinton, E. Beyond Health Care: The Role of Social Determinants in Promoting Health and Health Equity. Kaiser Family Foundation. https://www.kff.org/disparities-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/. Date accessed 11/21/18.
[53] Kelleher, C. (2017). Data, Evidence, and Modeling: The Oregon Experience. *Center for Evidence-based Policy presentation at Southern California Open DataFest*.
[54] Metzler, M., Merrick, M.T., Klevens, J., Ports, K.A., and Ford, D.C. (2017). Adverse childhood experiences and life opportunities: Shifting the narrative. *Children and Youth Services Review, 72*, 141-149.

statewide have significantly lower four-year graduation rates such as Hartford School District (68.8 percent), Bridgeport School District (74.5 percent), and Waterbury School District (75.6 percent). These three school districts represent more than 1,100 students in the 2016-2017 school year cohort that did not graduate within the four-year window.[55]

Across the state, 10.7 percent of students were chronically absent in the 2017-18 school year, meaning they missed more than 10 percent of school days. Hispanic/Latino and Black or African American students exhibited higher rates (16.9 percent and 15.3 percent, respectively) than their White peers (7.2 percent). Additionally, 18.8 percent of students eligible for free lunch were chronically absent compared to 5.8 percent of those ineligible for free or reduced lunch.[56] Statewide, Black or African American students are four times more likely to be suspended than White students and Latino or Hispanic students are more than twice as likely to be suspended as White students despite national research suggesting no difference in misbehavior across racial groups of students.[57]

2.3.2. Economic and Housing Instability

In 2017, Connecticut ranked 48th across all states in income equity, and the measure of inequity in the state has trended upward over the past 25 years at a faster rate than the nation overall.[58] Low socioeconomic status increases risk of diabetes-related mortality.[59] Without access to resources, individuals are limited in the type and level of care they can obtain, the quality and quantity of healthy foods they can eat, and the level of access to and time available for leisure time physical activity, among countless other factors that influence health. The State Health Assessment found that when looking at health characteristics by town, a correlation exists between the wealthy towns and better health and the urban core towns and poor health, despite some wealthy and urban core towns being located side by side.[60]

Across measures of health, poor health outcomes increase as incomes decrease. More than 360,000 Connecticut residents live in poverty and 23.3 percent of residents have incomes below 200 percent of the Federal Poverty Level.[61] The statewide point-in-time count of individuals experiencing homelessness decreased by more than 1,000 individuals since 2014; however, 3,383 individuals experiencing homelessness remain statewide. A total of 5,054 youth under the age of 25 were estimated to be homeless or unstably housed, including 254 counted as homeless in the 2018 point-in-time count. Almost one in five (19 percent) homeless or unstably housed youth indicated that they were parents or expecting a child.[62] Homelessness has been found to impact the health outcomes of children even among children who only experienced homelessness in utero. Young children who only experienced pre-

[55] Connecticut State Department of Education EdSight, 2016-17 school year
[56] Connecticut State Department of Education EdSight, 2017-18 school year
[57] Connecticut Voices for Children. *Candidate Briefing Book*. August 2018.
[58] America's Health Rankings. (2017). https://www.americashealthrankings.org/learn/reports/2017-annual-report/state-summaries-connecticut. Date accessed 6/14/18.
[59] Saydah S, Lochner K. Socioeconomic Status and Risk of Diabetes-Related Mortality in the U.S. Public Health Reports. 2010;125(3):377-388.
[60] Healthy Connecticut 2020 State Health Assessment. (2014). *Health Resources in Action*.
[61] U.S. Census American Community Survey 5-Year Estimates, 2012-2016
[62] Connecticut Counts Annual Point-in-Time Count and Youth Count, May 2018. http://cceh.org/wp-content/uploads/2018/05/CT-Counts-May-2018-v2.pdf Accessed 10/30/2018.

natal homelessness were shown more likely to be in fair or poor health and more likely to have been hospitalized since birth compared to children who never experienced homelessness. Children who experienced homelessness pre- and post-natal were shown to have an increased risk of being hospitalized, having fair to poor health, and experiencing developmental delays and experience these conditions at higher rates than those who were either homeless only before or after birth alone.[63]

Housing instability, along with homelessness, also effects health. Across the state, there are 24 public housing and project-based voucher waiting lists operated by regional housing authorities. As of November 5, 2018, nearly half (11 of the 24) are closed to new entries. Households behind on rent sometime in the previous 12 months have shown increased risk for fair or poor caregiver and child health, maternal depressive symptoms, child lifetime hospitalizations, and household material hardships.[64] The National Low Income Housing Coalition ranks Connecticut as the ninth most expensive state for rental housing.[65] This ranking is based on the estimated full-time hourly wage a household must earn to afford a decent rental home at the Department of Housing and Urban Development Fair Market Rent while spending no more than 30% of their income on housing costs. A household in Connecticut must make $24.90 an hour to afford a two-bedroom rental, more than double the current minimum wage rate of $10.10 an hour. Across the state, 50 percent of renters and 32 percent of owners spend more than 30 percent of their income on housing.[66] In calendar year 2017, Connecticut's 2-1-1 service, the phone line for individuals and families experiencing a housing crisis or homelessness, fielded more than 70,000 calls. Of that total, 24 percent were families.[67]

The Eviction Lab at Princeton University compiled and published a dataset of evictions in America, ranking cities by the percentage of renter homes evicted per year. Three Connecticut towns made the top 40: Waterbury at number 22 with an eviction rate of 6.1 percent, Hartford at number 29 with an eviction rate of 5.7 percent, and Bridgeport at 39 with an eviction rate of 5.0 percent.[68]

[63] Sandel M, Sheward R, Sturtevant L. Compounding Stress, The Timing and Duration Effects of Homelessness on Children's Health. June 2015. http://media.wix.com/ugd/19cfbe_07b13c8e56a14337a316e2e991aa0bf7.pdf Accessed 10/29/2018.

[64] Unstable Housing and Caregiver and Child Health in Renter Families
Megan Sandel, Richard Sheward, Stephanie Ettinger de Cuba, Sharon M. Coleman, Deborah A. Frank, Mariana Chilton, Maureen Black, Timothy Heeren, Justin Pasquariello, Patrick Casey, Eduardo Ochoa, Diana Cutts
Pediatrics Feb 2018, 141 (2) e20172199; DOI: 10.1542/peds.2017-2199.
http://pediatrics.aappublications.org/content/pediatrics/141/2/e20172199.full.pdf Accessed 10/29/2018.

[65] National Low Income Housing Coalition (2018), Out of Reach The High Cost of Housing.
https://nlihc.org/sites/default/files/oor/OOR_2018.pdf Accessed 10/29/2018.

[66] Partnership for Strong Communities 2018 Housing Data Profiles.
http://www.pschousing.org/files/PSC_2017HsgProfile_Connecticut.pdf Accessed 10/30/2018.

[67] Connecticut Coalition to End Homelessness Coordinated Access Data Dashboard.
http://cceh.org/data/interactive/can/ Accessed 10/30/2018.

[68] Eviction Lab at Princeton University. https://evictionlab.org/ Accessed 10/5/2018.

Housing insecurity has shown correlation with intimate partner violence even when controlling for age, family income, race/ethnicity, education, and marital status.[69] Witnessing intimate partner violence meets the definition of an ACE.

In 2016, 40 percent of Connecticut households were unable to afford necessities such as housing, child care, food, transportation, healthcare, and technology, an increase of 11 percent since 2010, the end of the Great Recession. Approximately 10 percent of households live in poverty and the remaining 30 percent fall into the United Way classification of Asset Limited, Income Constrained, Employed (ALICE). Within all cities in Connecticut with more than 25,000 households, at least 40 percent are ALICE or in poverty; Bridgeport has the highest proportion with 72 percent of households meeting the ALICE definition or in poverty. Between 2010 and 2016, Black and Hispanic households below the ALICE threshold increased by 24 percent and 34 percent, respectively, and increased across all age cohorts. Due in part to the rise in the basic cost of living between 2010 and 2016, an average family of two adults, one infant, and one preschooler, would have to earn an estimated $38.92 an hour in full-time wages to support the average cost of these basic needs; the cost of this family's estimated budget increased by 23 percent from 2010 to 2016.[70]

Households receiving aid from the Low Income Home Energy Assistance Program have shown less risk of undernutrition, no evidence of increased overweight, and lower odds of acute hospitalization from an emergency department visit among young children in low-income renter households compared to those in comparable household not receiving the assistance.[71]

Across the state, 18.8 percent of households have at least one of four severe housing problems: incomplete kitchen facilities, incomplete plumbing facilities, more than 1.5 persons per room, and a ratio of housing costs to household income greater than 50 percent.[72] The Connecticut Department of Public Health's Healthy Homes Initiative was developed to achieve the vision that "Every Connecticut resident lives in a healthy and safe environment." Healthy Homes Assessments were conducted across the state to collect data on the prevalence and persistence of hazards and health-related issues. The assessments showed 31.2% of homes visited contained evidence of mold growth, 42.6% lacked a functioning stove exhaust fan/vent in the kitchen, 54.1% did not have a carbon monoxide (CO) alarm or had one without power or battery present, and 21.8% had an unvented combustible appliance present which is a direct source of CO in the home.[73]

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[69] Breiding, M.J., Basile, K.C., Klevens, J., Smither, S.G. (2017). Economic Insecurity and Intimate Partner and Sexual Violence Victimization. *Am J Prev Med, 53*(4), 457-464.

[70] Alice: A Study of Financial Hardship in Connecticut. Connecticut United Ways, 2018.

[71] Heat or Eat: The Low Income Home Energy Assistance Program and Nutritional and Health Risks Among Children Less Than 3 Years of Age. Deborah A. Frank, Nicole B. Neault, Anne Skalicky, John T. Cook, Jacqueline D. Wilson, Suzette Levenson, Alan F. Meyers, Timothy Heeren, Diana B. Cutts, Patrick H. Casey, Maureen M. Black, Carol Berkowitz. Pediatrics Nov 2006, 118 (5) e1293-e1302; DOI: 10.1542/peds.2005-2943. http://pediatrics.aappublications.org/content/118/5/e1293. Accessed 10/29/2018.

[72] U.S. Department of Housing and Urban Development Comprehensive Housing Affordability Strategy, 2011-2015

[73] Connecticut Department of Public Health Healthy Homes Surveillance Report, 2017. https://portal.ct.gov/-/media/Departments-and-Agencies/DPH/dph/environmental_health/HH/HH-Surveillance-Report/Healthy-Homes-Surveillance-Report_2017.pdf?la=en Accessed 10/29/2018,

2.3.3. Lack of Access to Healthy Foods and Physical Inactivity

Access to low-cost, healthy foods is a concern across the state. Connecticut ranks low relative to the rest of the nation in terms of fruits and vegetables eaten each day (39th in average number of fruits eaten each day and 34th in vegetables consumed). [74] Improving access to healthy foods for children has shown linkages to healthier students and better achievement.[75]

As shown in Figure 4, 31.5 percent of Connecticut children eat fast food more than twice a week and are more likely to be obese if a parent participates in no leisure time physical activity. An estimated 29.9 percent drink soda or other sugar-sweetened beverages at least once per day. An estimated 43.2 percent of children aged 2-17 exceed the threshold of excessive screen time (more than two hours) daily.[76]

An estimated 23.1 percent of adults report no leisure time physical activity.[77] Rates are even higher for those without a high school degree (46.1 percent) and those with household income of less than $25,000 (35.7 percent).[78]

2.3.4. Neighborhood, Environment, and Physical Insecurity

Housing quality and exposure to harmful environments also impact child well-being. In calendar year 2015, more than 3,000 Connecticut children under age 6 tested positive for some level of lead in their blood. More than 900 children were at levels two to four times the baseline at which a child is considered poisoned. Further, those numbers may be underestimated due to significant gaps in screening across the state. The health disparities for lead poisoning between races and between Hispanic and Non-Hispanic ethnicities remain significant. Black children (5.0 percent) were found more than twice as likely to be lead poisoned than White children (2.2 percent), and Hispanic children (3.9 percent) were found 1.6 times as likely to be lead poisoned than Non-Hispanic children (2.5 percent).[79]

Many school-aged children feel unsafe on the way to/from and at school, creating a barrier to obtaining an education. Approximately 6.9 percent of Connecticut high school students who did not go to school on one or more days in the past 30 days did not attend because they felt they would be unsafe at school or on their way to/from school. Additionally, 5.4 percent of high school students reported carrying a weapon on school property and 7.1 percent reported being threatened or injured with a weapon on school property.[80] In the 2015 DataHaven Community Well-Being survey, 29 percent of Connecticut residents reported feeling unsafe walking in their neighborhood at night.[81]

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[74] America's Health Rankings. (2017). https://www.americashealthrankings.org/learn/reports/2017-annual-report/state-summaries-connecticut. Date accessed 6/14/18.
[75] Bradley, B., Green, A.C. (2013). Do Health and Education Agencies in the United States Share Responsibility for Academic Achievement and Health? A Review of 25 years of Evidence About the Relationship of Adolescents' Academic Achievement and Health Behaviors. *Journal of Adolescent Health, 52*(5), 523–532.
[76] BRFSS. (2011-2015). CT DPH.
[77] CT DPH, BRFSS 2015
[78] *Ibid*
[79] Connecticut Department of Public Health Childhood Lead Poisoning Prevention and Control 2015 Annual Disease Surveillance Report. (2017).
[80] Connecticut YRBS. (2017).
[81] Communities and Neighborhood Profiles. http://ctdatahaven.org/communities. Date accessed 8/7/18.

2.3.5. Chronic and Toxic Stress and Trauma

Across the state, children and adolescents continue to experience stress and trauma at home and in their social lives. In state fiscal year 2016, Connecticut saw 9.66 unique substantiated victims of maltreatment per 1,000 children.[82] In calendar year 2015, Non-Hispanic, Black or African American children were 1.9 times as likely and Hispanic children were 2.6 times as likely to be substantiated victims as compared to Non-Hispanic, White children.[83]

More broadly, even when accounting for socioeconomic differences, Black or African American individuals have shown to experience earlier deterioration of health than White individuals related to the erosion of the body's systems resulting from repeated adaptation to stressors. This repeated exposure to stress has shown to be cumulative with differences widening beginning in young adulthood. Black women, known to experience both gender and racial discrimination, are also shown to suffer the highest probability of experiencing high cumulative wear and tear on the body associated with adapting to stress.[84]

As of April 2016, 53.67 percent of those currently incarcerated in Connecticut reported being a caregiver, totaling over 17,000 dependents in the state with a caregiver behind bars. Over 12,000 of those dependents are from single-parent homes.[85]

Data also suggest linkages between childhood trauma and increased risk of severe obesity later in life, providing a connection between the two health priorities.[86]

2.4. Current Cost of Health Care

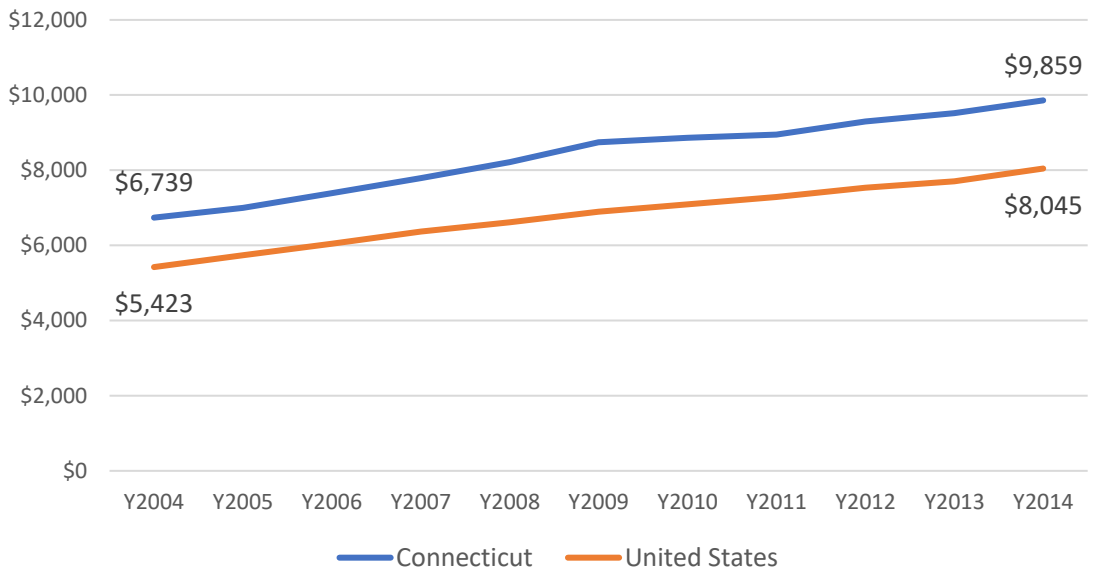
Improving child well-being in Connecticut from pre-birth to age 8 years and healthy weight and physical activity for all Connecticut residents will reduce the trajectory of health care cost increases. The economic cost of child abuse and neglect in the U.S. in 2008 has been estimated at $124 billion, with an estimated lifetime cost per victim at $212,012.[87] Estimates of the economic cost of obesity total $149.4 billion in 2014 dollars nationally.[88] Estimates of the economic cost of obesity total $149.4 billion in 2014

[82] Connecticut State Department of Children and Families 2016 Abuse and Neglect Data
[83] Connecticut Department of Children and Families Report Card. https://portal.ct.gov/DCF/RBA/Report-Cards. Date accessed 8/7/18.
[84] Geronimus AT, Hicken M, Keene D, Bound J. "Weathering" and age patterns of allostatic load scores among blacks and whites in the United States. *Am J Public Health*. 2006;96(5):826-33.
[85] A Shared Sentence: Incarceration of Caregivers and Its Impact on Connecticut's Children. https://d3n8a8pro7vhmx.cloudfront.net/ctassetbuilding/pages/167/attachments/original/1476997702/CIP-State-Specific-Presentation_FINAL.pdf?1476997702. Date accessed 8/14/18.
[86] Richardson, A.S., Dietz W.H., Gordon-Larsen, P. (2014). The association between childhood sexual and physical abuse with incident adult severe obesity across 13 years of the National Longitudinal Study of Adolescent Health. *Pediatric obesity, 9*(5), 351-361. doi:10.1111/j.2047-6310.2013.00196.x.
[87] Fang X, Brown DS, Florence CS, Mercy JA. (2012). The economic burden of child maltreatment in the United States and implications for prevention. *Child Abuse Negl. 36*(2), 156–165.
Child Abuse and Neglect: Consequences. (n.d.). *Centers for Disease Control and Prevention*. https://www.cdc.gov/violenceprevention/childabuseandneglect/consequences.html. Date accessed 8/14/2018.
[88] Kim, David, D. et al. (2016). Estimating the Medical Care Costs of Obesity in the United States: Systematic Review, Meta-Analysis, and Empirical Analysis. *Value in Health, 19*(5), 602 – 613. doi: 10.1016/j.jval.2016.02.008

dollars nationally.[89] In 2014, an estimated $1.36 billion in medical expenditures in Connecticut were attributable to obesity in the 855,000 obese adult residents, $439 million of which were attributable to Medicare and $140 million to Medicaid.[90]

Connecticut is a higher-cost state in overall health care spending per person relative to the national average. This reveals an opportunity to reduce costs.

Figure 7. Total All-Payer Per Capita Personal Health Care Spending, 2004-2014 [91]



Source: CMS National Health Expenditure Data

However, the Connecticut health care spending growth rate was slightly lower than the national average between 2004 and 2014.

Table 1. All Payer Per Capita Spending Growth

Compound Annual Growth Rate, 2004-2014	
Connecticut	3.88%
United States	4.02%

Source: Bureau of Economic Analysis, U.S. Department of Commerce

[89] Kim, D.D. et al. (2016). Estimating the Medical Care Costs of Obesity in the United States: Systematic Review, Meta-Analysis, and Empirical Analysis. *Value in Health, 19*(5), 602 – 613.
[90] Wang YC, Pamplin J, Long MW, et al. (2015). Severe obesity in adults cost state Medicaid programs nearly $8 billion in 2013. *Health Affairs, 34*(11), 1923-1931.
[91] CMS National Health Expenditure Data; available at https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData. Date accessed 8/6/18.

During this same period, growth in the Connecticut economy, measured by Gross Domestic Product, was 2.0 percent.[92] Health care spending is outpacing growth in the Connecticut economy by a significant margin.

While Connecticut is a comparatively high cost Medicaid state, Connecticut's Medicaid program led the nation in controlling cost trends on a per enrollee basis for the period from 2010-2014.[93] Connecticut reduced its per-person spending by a greater percentage (5.7 percent) than any other state in the country. Overall and in Connecticut, Medicaid tracked lower than private health insurance and Medicare.[94] This is likely due to Medicaid's innovative efforts to control costs through their managed fee-for-service model and PCMH initiatives, maintaining regulatory control over provider rates, and changes in case mix related to the Medicaid expansion.

Medicare spending data for Connecticut, by contrast, shows a state that is both high-cost and higher-growth relative to national averages. Figure 8 shows each state's 2016 per capita Medicare costs and its 2007-2016 Medicare spending compound average growth rate (CAGR) relative to the national average. Connecticut had among the highest per capita cost as well as higher than average growth.[95]

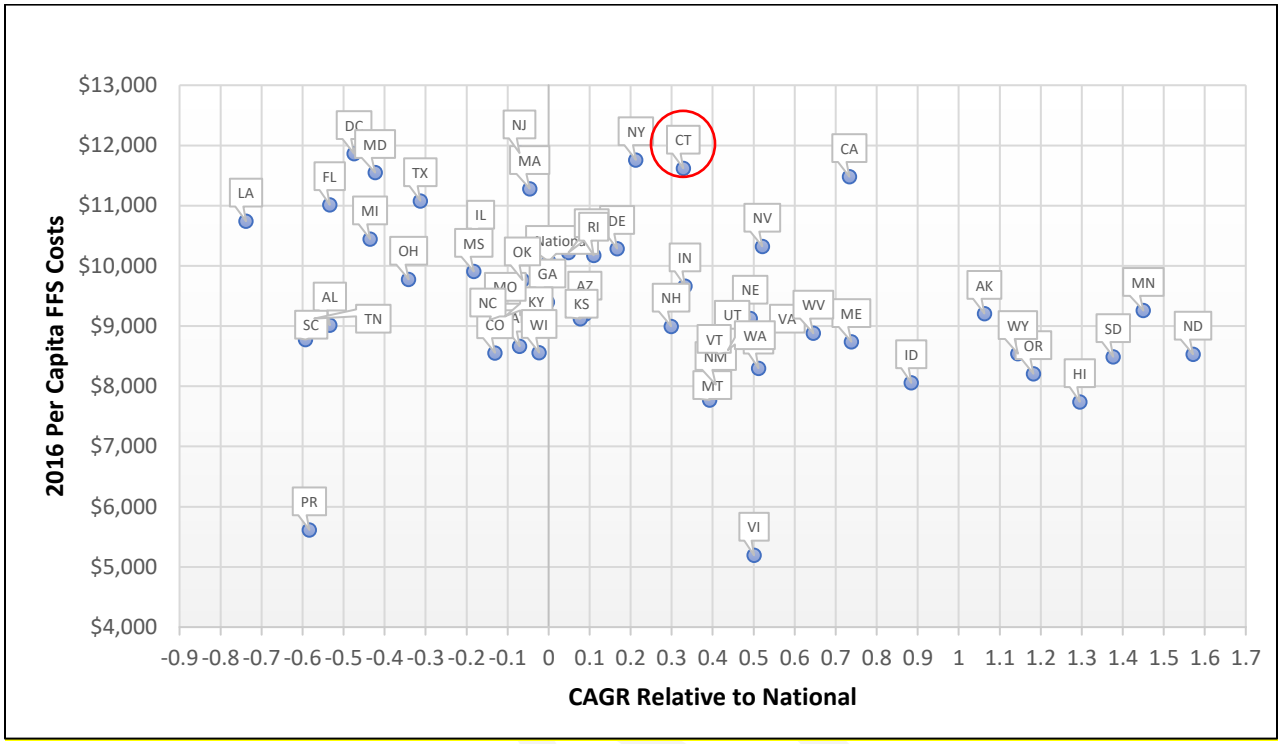
[92] Bureau of Economic Analysis, U.S. Department of Commerce; data available at https://www.bea.gov/iTable

[93] Lassman, D., Sisko, A.M., Catlin, A., Barron, M.C., Benson, J., Cuckler, G.A., Hartman, M., Martin, A.B., and Whittle, L. (2017). Health Spending By State 1991-2004: Measuring Per Capita Spending By Payers and Programs. *Health Affairs, 36*(7). doi: 10.1377/hlthaff.2017.0416.

[94] Health Affairs, June 2017

[95] Medicare Geographic Variation Public Use File, 2007-2016.

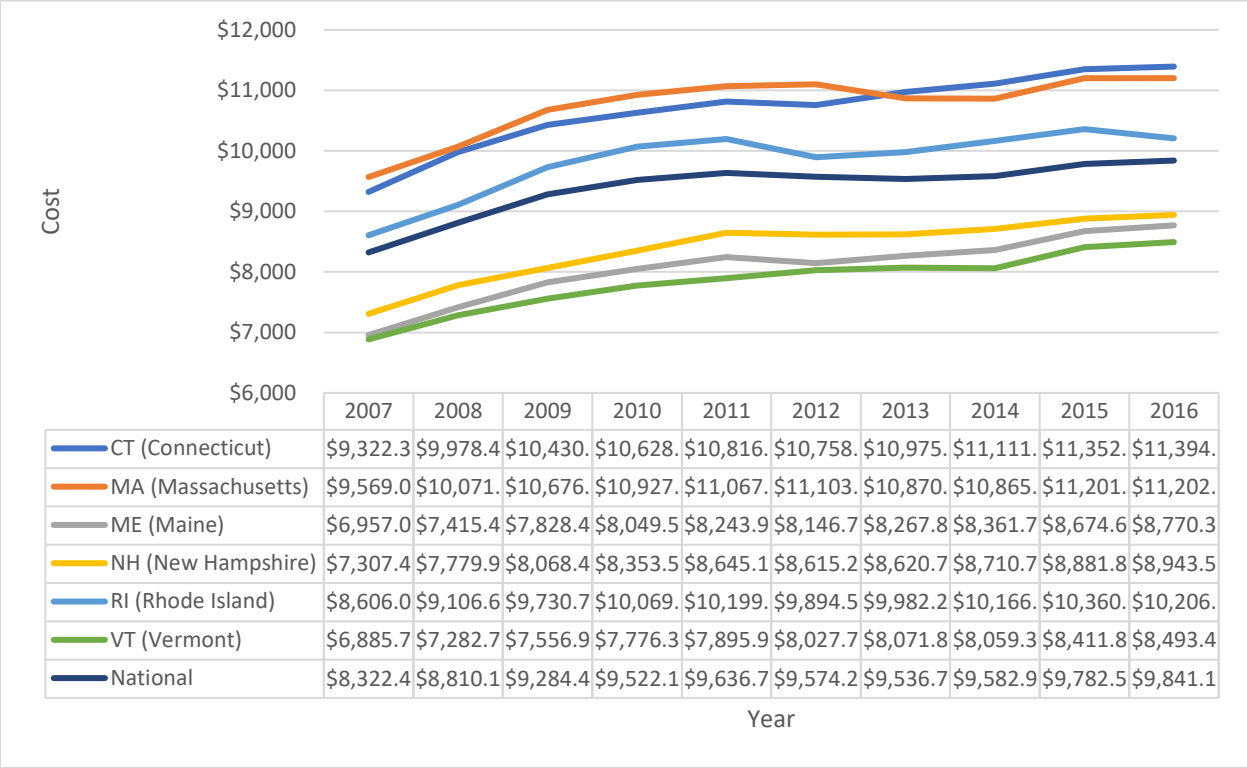
Figure 8. State Per Capita Medicare Fee-For-Service Costs Relative to National



Source: Medicare Geographic Variation Public Use File, 2007-2016

Connecticut is also the highest-cost state for Medicare in New England. Figure 9 shows Connecticut Medicare Parts A and B per capita spending alongside other New England states and the national average.

Figure 9. Annual Medicare Fee-For-Service Per Capita Costs by State: Over 65 (2007-2016)



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
CT (Connecticut)	$9,322.3	$9,978.4	$10,430.	$10,628.	$10,816.	$10,758.	$10,975.	$11,111.	$11,352.	$11,394.
MA (Massachusetts)	$9,569.0	$10,071.	$10,676.	$10,927.	$11,067.	$11,103.	$10,870.	$10,865.	$11,201.	$11,202.
ME (Maine)	$6,957.0	$7,415.4	$7,828.4	$8,049.5	$8,243.9	$8,146.7	$8,267.8	$8,361.7	$8,674.6	$8,770.3
NH (New Hampshire)	$7,307.4	$7,779.9	$8,068.4	$8,353.5	$8,645.1	$8,615.2	$8,620.7	$8,710.7	$8,881.8	$8,943.5
RI (Rhode Island)	$8,606.0	$9,106.6	$9,730.7	$10,069.	$10,199.	$9,894.5	$9,982.2	$10,166.	$10,360.	$10,206.
VT (Vermont)	$6,885.7	$7,282.7	$7,556.9	$7,776.3	$7,895.9	$8,027.7	$8,071.8	$8,059.3	$8,411.8	$8,493.4
National	$8,322.4	$8,810.1	$9,284.4	$9,522.1	$9,636.7	$9,574.2	$9,536.7	$9,582.9	$9,782.5	$9,841.1

Source: Medicare Geographic Variation Public Use File, 2007-2016

Taken together, these historical trends demonstrate why it is important for Connecticut to control health care spending. From the federal government's perspective, Connecticut is a high-cost state for Medicare and that problem is being exacerbated by higher growth relative to national trends. From the state's perspective, health care spending has consistently outpaced growth in the state economy.

Rising health care costs affect both employers, who are purchasers of health insurance, and families, who are assuming a larger share of the burden of health care costs and earning depressed wages. From 2006 to 2016, consumer out-of-pocket spending rose by 54 percent from an average of $525 in 2006 to $806 in 2016. Wages, meanwhile, rose by only 29 percent during the same period.[96] Employers focus on total compensation costs, meaning both benefits and wages, and health care costs are an important factor in slowing wage growth. Average wages net of insurance premiums grew by only 0.7 percent from 2000 to 2009.[97]

[96] Claxton, Levitt, Rae, and Sawyer, Kaiser Family Foundation, *Increases in Cost-Sharing Payments Continue to Outpace Wage Growth*, Peterson-Kaiser Health System Tracker. https://www.healthsystemtracker.org/brief/increases-in-cost-sharing-payments-have-far-outpaced-wage-growth/#item-start. Date accessed 6/15/18.

[97] Komisar, *The Effects of Rising Health Care Costs on Middle-Class Economic Security*, AARP Public Policy Institute, January 2013. https://www.aarp.org/content/dam/aarp/research/public_policy_institute/security/2013/impact-of-rising-healthcare-costs-AARP-ppi-sec.pdf. See also DeNavas-Walt, Proctor, and Smith, *Income, Poverty, and*

There are many different possible explanations for why Connecticut is a higher-cost state for health care, and the impact of health care spending on the overall Connecticut economy is complex and surely includes the important role that hospitals and other providers play as employers. For the purposes of this report, it is important to establish baseline data concerning overall Connecticut spending and to understand that it will be important to assess and interpret potential changes on the economy, employers, and consumers as the state advances goals under this initiative.

Health Insurance Coverage in the United States: 2011, U.S. Census Bureau, Current Population Reports, P60-243 (Washington, DC: U.S. Government Printing Office, 2012). https://www.census.gov/prod/2011pubs/p60-239.pdf.

3. HEALTH ENHANCEMENT COMMUNITY DEFINTION AND KEY ELEMENTS

3.1. Health Enhancement Community Initiative Goal

The HEC Initiative has three ambitious but achievable goals:

- Make Connecticut the healthiest state in the country.
- Make Connecticut the best state for children to grow up.
- Slow the growth of Connecticut's health care spending.

To achieve these goals, the Population Health Council recommends developing HECs across Connecticut that will focus on two health priority aims:

- **Improving Child Well-Being in Connecticut Pre-Birth to Aged 8 Years:** Assuring all children are in safe, stable, and nurturing environments
- **Improving Healthy Weight and Physical Fitness for All Connecticut Residents:** Assuring that individuals and populations maintain a healthy or healthier body weight, engage in regular physical activity, and have equitable opportunities to do so

Improving Health Equity: In addition to the health priorities, the Population Health Council recommends that the HEC Initiative include improving health equity as a central focus and outcome of HEC Initiative. This is because much of what is driving poor health outcomes for these priorities is related or due to health inequities. Because improving health equity requires targeted strategies, health equity will be woven into all aspects of the initiative, including at the state and community levels. The HEC framework includes health equity throughout the design, including having specific measures of health equity and interventions that specifically address health equity.

This section will define and describe the key recommended elements of HECs, including:

- The definition of an HEC
- The core principles of HEC design
- How the geography of HECs will be defined
- What health priorities HECs will address
- The intervention framework HECs will use
- Potential roles for key sectors
- HEC governance structures

3.2. HEC Definition

HECs will have these essential features, described in greater detail in Section 3.3:

- HECs will be collaboratives that include community members and partners from multiple sectors that could contribute to community health and prevention.

  - Examples of sectors include community members, community-based organizations, health care providers, local health departments, local government, social services agencies, schools, housing agencies and providers, transportation agencies and providers, and others.

- HECs will be accountable for improving community health, health equity, and prevention and reducing costs and cost trends for the health priorities.
- Each HEC will have a defined geographic area that it serves.
- HECs will have formal structures, defined ways of making decisions together, and multiple methods for ensuring community member ownership and involvement.
- HECs will select and implement strategies that address social determinants of health that cause or contribute to poor health, health inequity, and preventable costs.
- HECs will be sustainable, including through financing that rewards HECs for improving health, preventing poor health, and producing savings and economic value.

3.3. HEC Key Design Elements and Structure

3.3.1. Design Principles

The HEC Initiative continues to be designed with extensive stakeholder input. Out of that process thus far, key principles emerged that guided the development of the HEC design in this section. (See Appendix 2 for detail.)

3.3.1.1. Community Ownership and Involvement

Given their unique and essential perspectives and insights about their communities, HECs' success depends on the ongoing involvement of community members and community members in making decisions about things that matter most to them. It is also essential that there is a balance of power within the HEC structure so that community members have a real voice in HECs and that community members reflect the diversity of the populations within the HEC geographies. (See Section 3.3.5.)

3.3.1.2 Community Health

Improving community health is a central outcome of the HEC Initiative. Although preventing poor health is a key outcome of this effort, it is not sufficient to achieve the goals of the HEC Initiative. Rather, the HEC Initiative also focuses on improving the social, economic, and physical conditions within a community enable individuals and families to meet their basic needs, achieve their health and well-being goals, and thrive throughout their lives.

3.3.1.3. Health Equity

Because much of what is driving poor health outcomes is related to health inequities, improving health equity[98] will be a central outcome of the HEC Initiative. To that end, HECs and the state will embed a focus on health equity throughout the HEC Initiative. The HEC Initiative overall and each HEC will be accountable for demonstrating improvements in health equity based on specific measures of health

[98] Disparities, Healthy People 2020. (n.d.). *Office of Disease Prevention and Health Promotion*. https://www.healthypeople.gov/2020/about/foundation-health-measures/Disparities. Date accessed 8/8/18.

equity. The state and HECs also will implement specific strategies and interventions that specifically address health equity.

3.3.1.4. Social Determinants of Health and Upstream Interventions

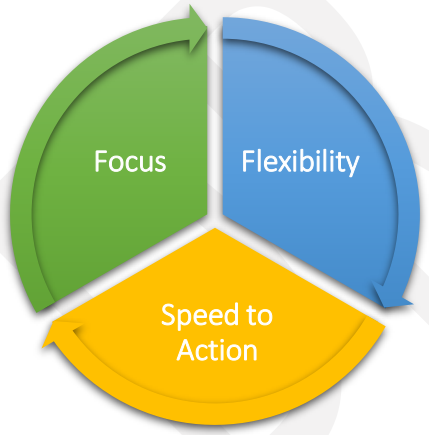
Unlike clinical initiatives, HECs will focus on improving community health and healthy equity and preventing poor health by addressing social determinants of health. HECs will focus on implementing "upstream" interventions that factors that causes or contribute to poor health, health inequity, and preventable costs. HECs may also implement "midstream" interventions that prevent health risks or mitigate the impact of poor health.

3.3.1.5. Place Based

The HEC Initiative is a place-based initiative that will support long-term, collaborative, and cross-sector efforts that improve community health in defined geographies through broad, systemic change. Place-based initiatives are built on recognition that where people live can limit their potential for leading healthy lives and restrain their economic mobility. Although Connecticut ranks fifth in overall health nationwide, these rankings represent the population on average and mask the significant health disparities that persist—disparities that start early and carry throughout the lifetime.

3.3.1.6. Sustainability

The HEC Initiative began developing and pursuing sustainability strategies as it developed this framework rather than waiting until the initiative is underway. This enables options and considerations for how HECs would be sustained to influence framework decisions, thus creating a clearer path to sustainability.



3.3.1.7. Focus

The HEC framework includes components that will be the focus across all HECs. Requiring all HECs to be aligned in key areas increases the likelihood of achieving state-level outcomes that will be required under long-term financing strategies. It also enables the state to better coordinate and support HECs and fosters cross-HEC collaboration.

3.3.1.8. Flexibility

The framework balances that focus with flexibility for HECs in several areas. The design reflects the need for HECs to have the flexibility to adapt how they are structured and what they do to address the needs of their communities and partners effectively.

3.3.1.9. Speed to Action

The framework reflects the desire to have HECs established and implementing interventions as quickly as possible. Although some planning and ramp up time is essential, the intent of the design is to build on previous collaborations and efforts and provide targeted support so that HECs can more readily and effectively advance to the action phase.

3.3.1.10. Leveraging Existing Assets

Communities and efforts by the state have created a strong foundation of community members, state and local agencies, community collaboratives, providers, other stakeholders, and groups committed to improving community health and health equity and preventing poor health. Each HEC and the HEC Initiative will leverage these key assets, connecting, improving, or expanding existing efforts to maximize benefit while implementing new interventions to fill gaps. They also will leverage existing efforts to improve health outcomes, such as existing Medicaid Person-Centered Medical Home Plus (PCMH+)[99] Participating Entities and Medicare Accountable Care Organizations, organizations that are focused on population health improvement and community integration as a means to succeed in these shared savings programs.

3.3.2. Defining HEC Geographies

HECs will have defined geographies for which they are accountable. In defining those geographies, a central objective of this initiative is to have every geography in Connecticut included in an HEC. Establishing geographic boundaries for each HEC is necessary to determine a service area for:

- Implementing interventions
- Establishing clear accountability for populations and outcomes
- Measuring health outcomes
- Financing for achieving outcomes[100]

The final number of HEC geographies will be defined during an iterative state procurement process (See Section 3.3.7 for detail); however, the provisional intent is to designate between 8 to 12 HECs. The Population Health Council recommends that prospective HECs propose geographies based on criteria defined by the State Partnership and provide a rationale for their proposed geography.

3.3.2.1. Minimum Criteria for HEC Geographies

The Population Health Council recommends that the minimum criteria for HEC geographies include:

- An HEC will not overlap boundaries with another HEC.
- Each HEC will need to demonstrate that their proposed geography meets both of the following minimum population thresholds:[101]
    - At least 20,000 Medicare beneficiaries
    - At least 150,000 people

[99] **Medicaid's PCMH+** provides person-centered, comprehensive and coordinated care to HUSKY members. The PCMH+ program works to improve HUSKY member's overall health and assists with access to services like access to healthy food, transportation to appointments and assistance in finding community agencies that support housing or employment.

[100] See Section 7 for proposed attribution model related to potential financing arrangements.

[101] The purpose of these thresholds is to have enough Medicare beneficiaries for a potential Medicare financial arrangement.

- Each HEC shall provide justification for their proposed geography and demonstrate how the boundaries are rational, do not exclude high-need geographies, and are functional from a governing perspective.

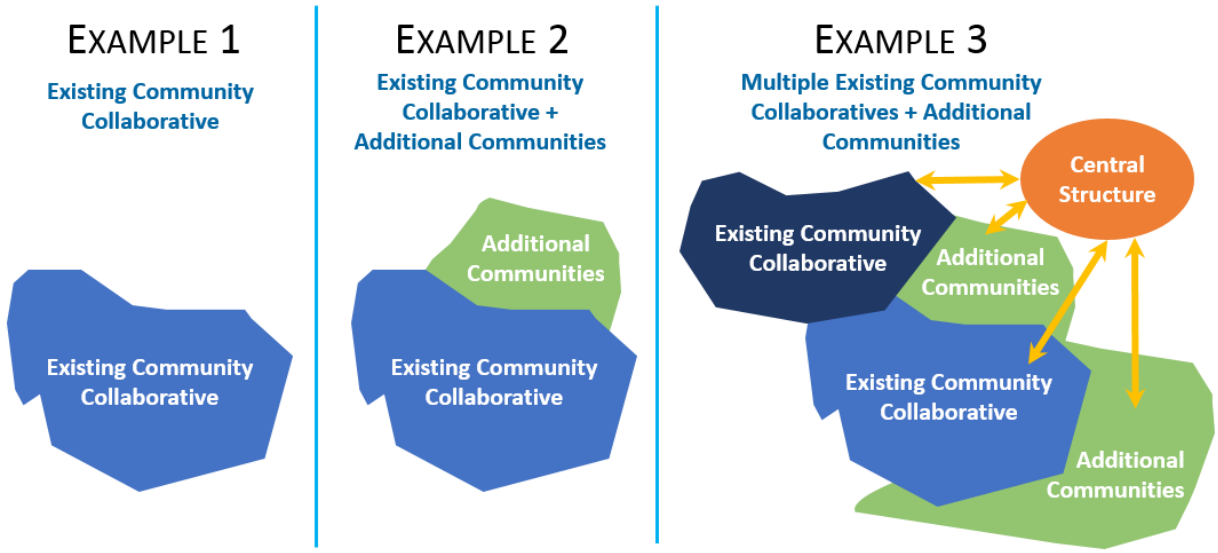
In some instances, existing community collaboratives may already meet the geographic criteria for HECs stated above. For others, collaboratives may need to join other regions or include a geographic area that has not been included previously. There are some parts of the state that may need to create new collaborations to form an HEC.

The Population Health Council recognizes that many rural communities will not meet the population thresholds yet may have compelling reasons to define their HEC based on a geography that only includes rural areas. Therefore, the Population Health Council recommends that rural areas may request that the population threshold criteria be waived for the purpose of forming an HEC so long as there is alternative methodology for reliably measuring the population for the purpose of assessing performance (e.g., establishing agreements with other rural areas to be measured jointly).

3.3.2.2. HEC Geographic Configurations

The Population Health Council recommends that HECs will have the flexibility to determine the configuration of their proposed geography relative to their existing collaborations and partnerships. As illustrated below, some existing community collaboratives may apply for HEC designation and propose their existing service area (Example 1). Other existing community collaboratives may propose including additional communities in their geography because, for example, an adjacent community has similar needs or has requested inclusion, or the existing collaborative does not meet the minimum population threshold without including additional communities, or for other reasons (Example 2). In a third scenario, existing community collaboratives may decide to apply jointly to be a single HEC and include other communities. They may also decide to develop a central structure that can coordinate activities among them, provide services, and/or govern the HEC. In this example (Example 3), the communities may retain some independence in governance and work together on all or some interventions. For example, rural communities may propose to form HECs using this structure and include geographies that are not in contiguous geographies. In addition to these examples, other configurations may also be proposed and will be considered under the HEC procurement process.

Figure 10. Possible Health Enhancement Community Geographic Configurations



3.3.3. HEC Health Priorities: A Focused Approach

As stated, the likelihood of achieving state-level outcomes increases by having all HECs focused on the same prevention aims while ensuring that each HEC has the flexibility to adapt to best achieve the outcomes in their communities.

All HECs will focus on two aims:

Improve Child Well-Being in Connecticut Pre-Birth to Age 8 Years

Increase Healthy Weight and Physical Fitness for All Connecticut Residents

HECs may also decide to focus on other priorities in addition to these two. For example, a community group may decide that there is a more pressing priority that they want to address. HECs can choose to do that. That said, the financing models that the state will pursue to sustain the HECs will focus on these two priorities.

3.3.3.1. Improving Child Well-Being in Connecticut Pre-Birth to Age 8 years

For the HEC Initiative, the goal for child well-being is **assuring safe, stable, nurturing relationships and environments.** The CDC defines these three characteristics as follows:

- **Safety:** The extent to which a child is free from fear and secure from physical or psychological harm within their social and physical environment
- **Stability:** The degree of predictability and consistency in a child's social, emotional, and physical environment
- **Nurturing:** The extent to which a parent or caregiver is available and able to sensitively and consistently respond to and meet the needs of their child[102]

The Population Health Council recommends that HECs will implement interventions to prevent Adverse Childhood Experiences (ACEs) and increase protective factors that build resilience and mitigate the impact of ACEs. This priority will focus on pre-birth to age 8 years and interventions on one or more of the following ACEs:

- Physical, sexual, and emotional abuse
- Emotional and physical neglect
- Mental illness of a household member
- Problematic drinking or alcoholism of a household member
- Illegal street or prescription drug use by a household member
- Divorce or separation of a parent
- Violence in the household and/or community
- Incarceration of a household member

HECs may also implement interventions that address other types of trauma or distress such as death of a parent or guardian, separation from a caregiver, poor nutrition, food insecurity, housing instability, poor housing quality, bullying, and discrimination.[103] HEC interventions may focus on families, children, parents, and expectant parents to prevent ACEs.

3.3.3.2. Improving Healthy Weight and Physical Fitness

For the HEC Initiative, the goal for healthy weight and physical fitness is **assuring individuals and populations maintain a healthy or healthier body weight, engage in regular physical activity, and have equitable opportunities to do so.**

Healthy weight and physical fitness are defined as:

[102] Essentials for Childhood Framework: Creating Safe, Stable, Nurturing Relationships and Environments for All Children. (n.d.) *Centers for Disease Control and Prevention.* https://www.cdc.gov/violenceprevention/childabuseandneglect/essentials.html. Date accessed 8/6/18.

[103] Examples of ACEs adapted from The Adverse Childhood Experiences (ACE) Study. Atlanta, Georgia: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention. May 2014, the Center for Youth Wellness (https://centerforyouthwellness.org/health-impacts/#hi-sec-1), and stakeholder feedback.

- **Healthy Weight:** Maintaining a healthy or healthier body weight[104]
- **Physical Fitness:** At least 150 to 300 minutes of moderate-intensity activity per week to prevent weight gain[105]

The Population Health Council recommends that HECs implement interventions to improve community health and health equity, prevent overweight and obesity across the lifespan, and prevent the associated risks of developing serious health conditions. Interventions will target:

- Improving access to and consumption of healthy, affordable foods and beverages
- Improving access to safe physical activity space
- Reducing deterrents to healthy behaviors

HECs could implement interventions that increase access to and consumption of healthy, affordable foods and beverages and physical activity space and reducing deterrents to healthy behaviors. Interventions can target food insecurity and inadequate nutrition in communities. Interventions can also support individuals who are already overweight or obese but who lose weight and retain the weight loss as it still reduces their risk of developing or delays the onset of serious health conditions such as diabetes, heart disease, and stroke.

3.3.4. HEC Interventions: Focus and Flexibility

Moving the needle on improving child well-being and healthy weight and physical fitness for all Connecticut residents requires HECs to coordinate and implement multi-pronged strategies and interrelated "upstream" interventions addressing the social determinants of health that cause or contribute to poor health, health inequity, and preventable costs associated with ACEs and overweight and obesity.

Based on feedback from Reference Communities and other stakeholders, the Population Health Council recommends

ALIGNING EXISTING RESOURCES

In addition to implementing new interventions, HECs would also focus on "connecting the dots," improving, or expanding existing resources and interventions. For example, there are existing programs that do home visits—often to the same families. Better alignment among these programs could create a more satisfying and seamless experience for families and ensure that new resources are used to fill gaps, not duplicate what it already in place.

[104] A healthy weight for adults means having a Body Mass Index (BMI) below 25 kg/m^2. A BMI at or greater than 25 kg/m^2 is overweight and at or greater than 30 kg/m^2 is obese. For children and teens, a BMI at or above the 85th percentile and below the 95th percentile for children and teens of the same age and sex. Obesity is defined as a BMI at or above the 95th percentile for children and teens of the same age and sex. https://www.cdc.gov/obesity/adult/defining.html and https://www.cdc.gov/obesity/childhood/defining.html. Date accessed 8/6/18.

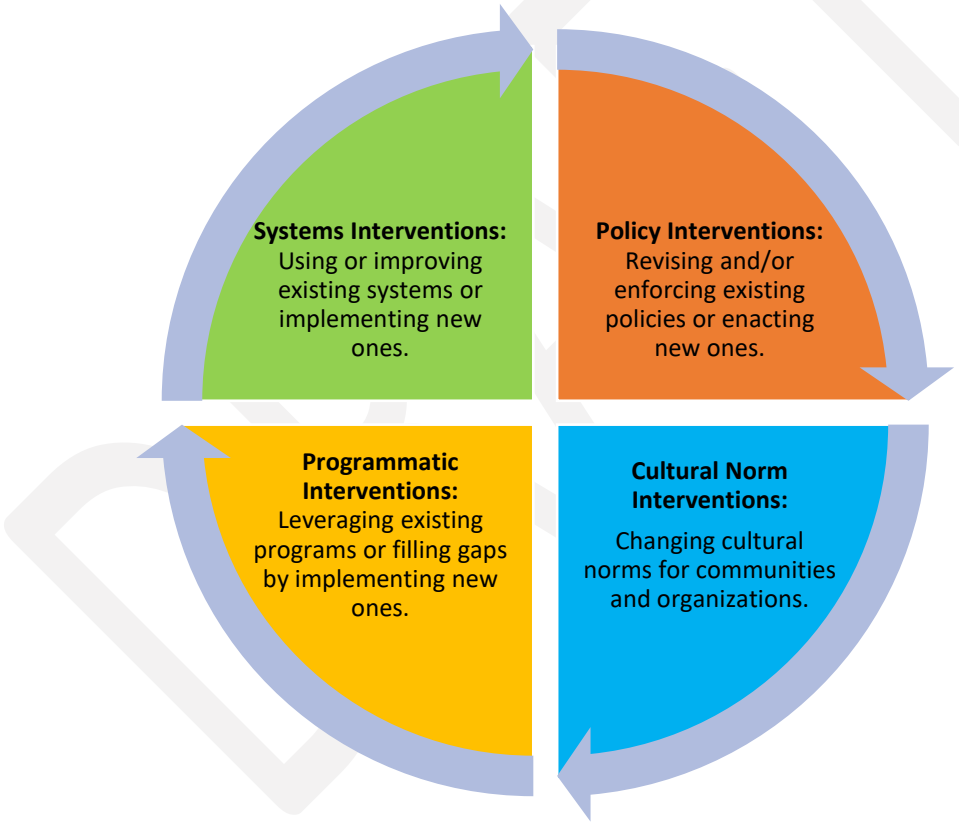
[105] Or could engage in 150 minutes of vigorous-intensity aerobic physical activity per week or an equivalent combination of moderate- and vigorous-intensity activity. https://www.cdc.gov/cancer/dcpc/prevention/policies_practices/physical_activity/guidelines.htm. Date accessed 8/6/18.

that HECs be required to select and implement interventions that span four key areas (Figure 11):

- Systems
- Polices
- Programs
- Cultural norms[106]

While HECs will identify and implement interventions in each of these areas, HECs will have the flexibility to select interventions that are most relevant in their communities and among their partners. The expectation is that HECs will connect, improve, and/or expand existing interventions and implement new interventions to fill gaps.

Figure 11. HEC Intervention Framework



Interventions will be required in each of the four categories with some interventions mutually reinforcing each other. (See Figure 12 for an example).

3.3.4.1. Systems Interventions

HECs will develop new systems or change or leverage existing systems to support interventions and sustain the improved outcomes. Examples of systems changes that HECs could implement:

[106] "Cultural norms" are intended to include cultural norms in communities and organizations/institutions.

- Coordination among various home visiting programs operated by different organizations, including developing systems and common trainings to have people conducting home visits implement multiple interventions (e.g., lead and/or mold remediation, weatherization, healthy feeding, and parent training. parent training)
- Common training and systems that enable Community Health Workers, care coordinators, or Community Care Teams[107] working for various HEC partners to assist community members in accessing healthy, affordable food options through a partner agency that works with local farmers and urban agriculture programs

3.3.4.2. Policy Interventions

HECs will advocate for local and state policy changes that are necessary to successfully implement and/or sustain their strategies, for example:

- Policies that reduce eviction, which increases housing instability for families (e.g., amending the state's eviction prevention program policies so that is does not require that the renter receive a notice to quit before being eligible for assistance, new polices to guarantee all low-income tenants a right to legal counsel)
- Competitive pricing policies at schools, worksites, grocery stores, other food retail outlets, cafeterias, and vending machines with lower costs through subsidies, incentives, or discounts for healthy foods and beverages[108] coupled with zoning measures to decrease outdoor advertising for unhealthy foods and beverages that are more common in low-income communities

3.3.4.3. Program Interventions

HECs will coordinate, improve, expand, or implement programs aimed at improving community health and healthy equity and preventing or mitigating the impacts of ACEs and overweight and obesity. Examples of programs that HECs could implement:

- Expanded early childhood home visitation programs provide services and support focused on child development, health, and well-being, and parental support to expectant parents, parents, and children in their homes.
- Faith-based organizations and community centers across a community create social support networks for healthy eating combined with opportunities for physical activity.

3.3.4.4. Cultural Norm Interventions

HECs will assess cultural norms and implement strategies to enhance or create positive values, beliefs, attitudes, and behaviors among community members, organizations, and agencies related to the needed improvements. Examples of cultural norm interventions that HECs could implement:

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[107] A Community Care Team (CCT) is a team comprising hospital staff, local community providers, and other stakeholders organized to meet the specific needs of individuals with a behavioral health diagnosis who are frequent visitors to the Emergency Department, high users of other behavioral health care services, or any other identified population. Building A Community Care Team: A Webinar Guidebook. Connecticut BHP. Fall 2015.

[108] Competitive pricing for healthy foods. (n.d.). *Robert Wood Johnson Foundation*. http://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/policies/competitive-pricing-for-healthy-foods. Date accessed 8/6/18.

- Social marketing campaigns to promote community and institutional norms for a shared responsibility for child well-being and/or a campaign to change behaviors related to child abuse and neglect
- Cross-sector campaigns to increase awareness and perceived value of local options for healthy eating and physical activity, increase food and nutrition literacy, and provide direct experiences with healthy eating and activities

3.3.4.5. Portfolio of Interventions

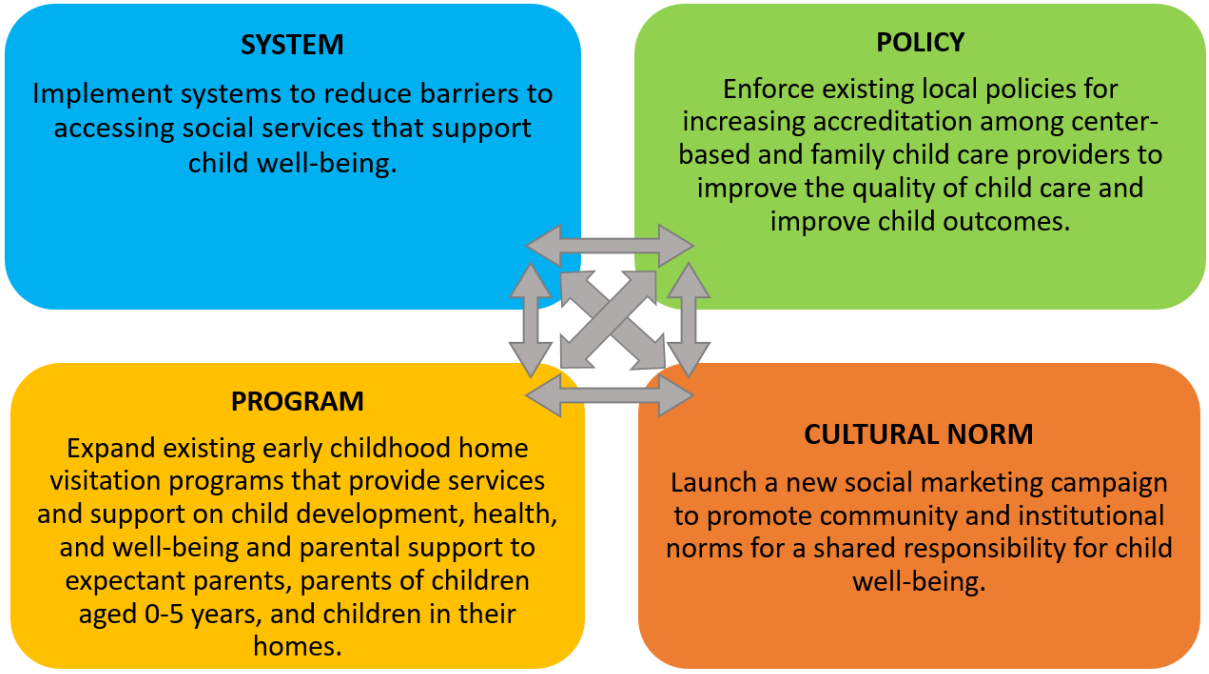
HECs will be expected to have a balanced portfolio of interventions that span the four categories. This includes interventions that are already working in their communities; better connected, improved, or expanded interventions; and new interventions to fill gaps.

The Population Health Council proposes that the State Partnership provide a sample menu of interventions that includes interventions that are evidence based or evidence informed and have evidence of a return on investment (ROI) in distinct timeframes. This would be intended to help HECs select interventions with an ROI that can be achieved over different time periods will be critical to securing dollars throughout the lifespan of HECs and from potential financing sources. (See Section 7 for detail). However, HECs may also implement interventions that do not appear on the menu.

It is important to note that the expectation is not for HECs to only implement new interventions and no new intervention should duplicate what is already working in communities. HECs should first seek to leverage existing interventions. Structured with the right partners at the table, HECs will facilitate connections and alignment among existing work and leverage existing efforts, infrastructures, and funds.

As illustrated in Figure 12, as part of their planning process, HECs will develop strategies that ensure their interventions—whether new or existing—mutually reinforce each other.

Figure 12. Example of Interrelated Interventions



3.3.4.6. Statewide Interventions

Some interventions may not be specific to individual HECs, and the State Partnership or agencies within it may wish to implement or sponsor interventions seeking to obtain statewide impact through HECs. For example, social marketing campaign development and implementation is often a labor-intensive, costly endeavor. Given that, the State Partnership or specific agencies may be in the best position to develop the campaigns, as it has with other topics such as the opioid crisis.[109] HECs could then implement and, as needed, adapt campaigns in their communities.

3.3.5. HEC Structure

Each HEC will need to develop a structure to direct and oversee what it does in its geography. Although each HEC will need to develop a structure that reflects the realities of its community, all HECs should have a defined structure that:

- Ensures that community members have ownership of and decision-making authority about what matters most to them in their communities
- Reflects the diversity within the HEC communities and includes diverse voices in all aspects of HEC formation and operation, including in decision-making roles
- Includes multiple sectors, including in decision-making roles
- Can effectively make decisions, manage the HEC, and achieve outcomes

Illustrated and described in detail below, the Population Health Council recommends that HECs adopt a three-arm, mutually reinforcing structure that can achieve these aims. The three arms are: 1)

[109] "Change the Script" Campaign to combat the prescription drug and opioid misuse crisis.

community groups, 2) management team/backbone organization, and 3) governance structure. *Note that although this framework recommends the following structure, there are also many aspects of the model that would need further refinement in 2019.*

3.3.5.1. Community Groups

These groups will comprise community members that come together to organize around the issues and interventions that matter most to them in their communities or specific neighborhoods. This aspect of the structure acknowledges that HEC success depends on community members shaping what HECs are and do and having decision-making authority for the things they care about and are best able to address. Community members are defined as people who live, learn, work, and worship in communities. For the purpose of community member involvement, community members should largely include people who are *not* leaders or staff of organizations or agencies.

> The guiding principle should be "nothing for us without us."
>
> *From a Hartford Community Member*

Community members have unique perspectives about their lived experience within communities, including nuanced insights about needs and opportunities, informal and formal resources and networks that can support HEC activities and lasting change in their communities, and real-world experience with what has worked and not worked in the past. Community groups across Connecticut have been and should remain at the forefront of efforts to improve community health and health equity.

Given that, the structure includes community groups in an equal role to a governance structure. They would lead the selection and implementation of key interventions in their communities. As examples, they may decide they want to advocate for the enforcement of housing policies or changes to zoning laws to support better access to healthy, affordable food. They may decide to work on developing better systems for formerly incarcerated community members to get jobs or help service providers improve how they work with parents.

These groups would receive resources (e.g., community organizers hired by the HEC, other staff such as Community Health Workers, training, and data analysis) to support and sustain their efforts. In some cases, community groups may work with each other on issues that matter to multiple groups. In other cases, they may choose to work with organizations that support their efforts.

While there are existing community groups in some Connecticut communities or neighborhoods, HECs may also need to support new groups or groups that need assistance changing or evolving what they do today.

3.3.5.2. HEC Management Team/Backbone Organization - Executive Director, Staff, and Funds

Each HEC would have an Executive Director leading the initiative and staff supporting the HEC. This arm would be the management team or "backbone organization" that is responsible for HEC operations, including but not limited to managing and directing the daily activities of the HEC; collecting, compiling, and sharing data to support HEC decision-making and performance; managing the input among all HEC arms and partners and ensuring the use of input in decision-making; providing support for interventions;

staffing the governance body; managing pooled funds; fundraising; monitoring and managing performance; strategic planning; and reporting.

They would provide resources to support the community groups and HEC participating organizations that are leading or participating in interventions. In some cases, the staff within this arm may lead or support interventions directly.

This arm would also be responsible for a pool of funds that support their HEC. Initially, the funds could come from multiple sources, including funds from partner organizations; braided and blended funding from local, state, or federal agencies; and grants. In the long term, this pool would include funds from the long-term financing being pursued under this initiative. The HEC likely will include other funding that is not under the direction of this arm. However, having a funding pool would enable this arm to make decisions about funding that support the overall HEC and are independent of any single HEC partner. This arm also would propose the use and funds flow of financing from the long-term strategies that the state is pursuing, develop agreements among the other arms of the HEC, and manage the relationship with the fiduciary agent if one is needed.

The Executive Director would be hired by the executive governing body of the governance structure (e.g., Executive Committee) and have defined authority to make decisions on behalf of the HEC.

3.3.5.3. Governance Structure

Each HEC would have a formal governance structure. The governance structure will have clearly defined decision-making roles, authorities, and processes. The governance structures must enable HECs to perform key functions, including but not limited to providing oversight of the HEC's performance against state health and health equity benchmarks and HEC intervention metrics; fiscal planning and performance; and mitigating risks (e.g., related to performance under financing models). Although some partner organizations within the governance structure will also select, lead, or collaborate on interventions, the governance structure itself would provide oversight of but not lead interventions. For example, if a group of organizations that are part of the governance structure are working on an intervention to align all the different home visiting programs, the management team/backbone organization would support and/or work with them on the intervention.

To be effective, the governance structure should include a balance of membership, including community members that represent the HEC diversity within HEC communities and multiple sectors that address community health, health equity, prevention, and social determinants of health. In addition to community groups, HECs will need to identify multiple methods for involving various sectors, including in decision-making, as HECs form and operate. In particular, HECs should implement multiple strategies to ensure that community members are meaningfully involved in the governance structure, including in making decisions about what HECs are and do. HECs should:

- Seek out and use what community members have said in previous community engagements to reduce the burden of asking communities members what they have been asked before.
- Directly involve community members in designing and making decisions about how assets and needs are assessed, how HECs are structured, strategies for leveraging assets and addressing needs, and evaluating interventions and success.

- Have multiple mechanisms to make it easy for community members to provide input and exercise their decision-making roles, including conducting work in community settings and afterhours; providing support (e.g., payment, transportation, food, and child care), and providing training and leadership development.
- Respond to and meaningfully use the input that community members provide.
- Implement ongoing multi-directional communication strategies, including:
    - Community members communicating to the HEC governance structure and partners what matters to them, what they want to accomplish, and what they are doing in the community
    - Communications from the HEC governance structure and partners that show how community members' input shaped what the HEC is and what it does
    - Communications that are easy to understand, in plain language, and in languages that communities speak and read

The governance structures that HECs create also need to be effective within each HEC's unique context (e.g., geographies, populations, partners, infrastructures) and be nimble enough to adapt if circumstances change. At the same time, the intent is to enable HECs to quickly progress from making governance structure decisions to identifying and implementing strategies. Given the need for a balance among those needs, the state will have some requirements for HEC governance structures that will ensure a degree of functionality while allowing flexibility for HECs where it supports their effectiveness and speed to action. Table 3 indicates the HEC governance structure elements the state will require versus what HECs can determine.

Table 3. Minimum Governance Structure Elements Required by the State and Determined by HECs

Governance Structure Element	FOCUS Required by State	FLEXIBILITY Determined by HECs
Partnership agreements	• HECs will need to have formal partnership agreements among organizations that will be part of governance structures and decision making.	• HECs will determine the form of the formal agreement, who will be included in it, and how entities outside of the agreements will be involved in HECs. • HECs will not be required but may decide to form a new legal entity
Bylaws	• HECs will need to have bylaws with clearly defined roles, governance bodies, terms of	• HECs will determine their structure and the determine the roles,

Governance Structure Element	FOCUS Required by State	FLEXIBILITY Determined by HECs
	service, decision-making parameters and processes, etc.	authorities, parameters, and processes in their bylaws.
HEC management team/backbone organization	• HECs will need to have a defined HEC management team/ backbone organization that can perform or contract for the key functions required to operate an HEC.	• HECs will select/hire the management team/backbone organization, including the Executive Director, and define the scope of their responsibilities and authorities.
Formal contracts for services	• HECs will need to have formal contracts with the entities providing significant administrative or other services.	• HECs will select the administrative service provider(s), determine their roles, and develop the contract(s).

3.3.5.4. Mutually Reinforcing Structure

While each arm of the structure will have specific roles and authorities, the intent is for the three arms to operate as a unified structure. To achieve maximum impact in their communities, what each arm does should be reinforce what the other arms do. The process by which this happens requires ongoing coordination, trust building, and practice. The management team/backbone organization will be responsible for developing and managing that process. The management team/backbone organization also will coordinate with the state regarding opportunities for the state to reinforce and support what the HEC is doing

3.3.6. Role of Key Sectors in HECs

3.3.6.1. Multi-Sector Inclusion and Engagement

To be effective in achieving state-level improvements, the Population Health Council recommends that HECs address the multiple, interrelated social determinants of health that cause or contribute to poor health in their communities. That necessitates having multiple sectors involved in HECs, including some sectors that can address those root causes but have not been at the table among many community collaboratives to date. These may include community members; government agencies and departments, community-based organizations, and social service organizations that are outside the health and health care sectors; housing agencies and organizations; schools and school districts; school-based health centers; academic institutions; social justice organizations and advocates; faith-based, civic, and cultural organizations; economic development offices; Community Development Corporations; elected officials; policy and advocacy organizations; law enforcement agencies; Chambers of Commerce; employers; substance use disorder providers; behavioral health providers; transit districts; and health plans.

Beyond just being at the table, the roles of the different sectors and the entities must be clearly defined. While the design process thus far has proposed that HECs are in the best position to define those roles based on what the ultimate geography will be and what interventions they will connect, improve,

expand, and/or implement, there are important options and examples that should guide how HECs define those roles.

3.3.6.2. Potential HEC Roles Among Key Sectors

All sectors that will be part of the HEC governance structure (See Section 3.3.6 for detail) should, at minimum:

- Champion improving child well-being and healthy weight and physical fitness, HECs, and HEC interventions within their spheres of influence
- Participate in the HEC formation process and the design, implementation, evaluation, refinement, and, if appropriate, expansion of HEC interventions through multiple engagement options
- Increase awareness and encourage engagement in HECs among community members and community institutions and organizations
- Provide guidance on program, systems, policy, and cultural norm needs, opportunities, priorities, and strategies
- Provide guidance on how to align HEC strategies with existing interventions, infrastructures, funding streams, and advocacy activities
- Advocate for local, state, and federal policies that support and advance HECs and HEC interventions specifically and community health, prevention, and healthy equity generally
- Lead, participate in, and/or be a recipient of HEC interventions

Table 4 below provides examples of potential additional roles that key sectors can play to engage in and support HECs.

Table 4. Additional Potential Key Sector Roles

Key Sector	Additional Potential Roles in Supporting HEC Success
Community Members	• Form or participate in community groups to identify and lead interventions • Provide input and insights from the community perspective to guide and prioritize HEC strategies, including selecting, designing, and/or adapting interventions • Consider HEC career opportunities such as community organizers, Community Health Workers, or Peer Support Specialists
Community-Based and Social Service Organizations	• Provide input and insights from the community service perspective to guide HEC decisions • Potential structure to house an unaffiliated backbone organization

Key Sector	Additional Potential Roles in Supporting HEC Success
Health Departments/ Districts	• Provide guidance on how to align HEC strategies with local, state, and federal programs and funding streams • Potential structure to house an unaffiliated backbone organization

Health Care Providers	• Implement primary care-based patient incentive programs to engage patients in healthy behavior and an active lifestyle
	• Develop systems to routinely screen for social factors that influence health and use data to inform HEC interventions and systems
	• Develop systems to link to care coordination and care management
	• Embed social determinants of health into population health management strategies, including to predict future costs and address rising risk[110]
	• Link patients with needs related to social determinants of health to HECs or HEC-affiliated resources (e.g., have a Community Health Worker assist them in accessing those resources)
	• Use contracting and community benefit dollars to support HECs directly and to align with HEC interventions
	• Implement anchor institution strategies within communities:
	  ○ Invest in HECs and community efforts that support child well-being and healthy weight and physical fitness
	  ○ Work with HEC partners to improve economic conditions in HEC communities and among HEC populations (See Section 3.3.5.4 for detail)
	• Potential structure to house an unaffiliated backbone organization

Non-Health Sectors Agencies and Organizations	• Provide input and insights from the non-health care perspective to guide HEC decisions

[110] Medical Home Network, a Chicago-based Medicaid ACO comprising nine federally qualified health centers and three health systems with a Medicaid membership of 118,000, routinely queries its member panel in a health risk assessment for the presence of social risk factors. They found social risk factors to be predictive of future cost and Emergency Department (ED) and inpatient utilization in the Medicaid expansion population over the ensuing 12 months, including among already high utilizers of the ED and inpatient care but also among the rising risk population.
Jones A, et al. (2017). Predictive Value of Screening for Addressable Social Risk Factors. *J Community Med Public Health Care, 4*, 030. doi: 10.24966/CMPH-1978/100030

Key Sector	Additional Potential Roles in Supporting HEC Success
Examples: Child Welfare, Schools, Housing, Criminal Justice, Transportation	• Potential structure to house an unaffiliated backbone organization
Faith-Based, Civic, Academic, Cultural, and Other Community Institutions and Organizations	• Promote HEC career opportunities among members/constituents • Potential structure to house an unaffiliated backbone organization
Local Government Officials and Agencies	• Allocate resources to HECs • Support new or enforce existing policies that promote child well-being and healthy weight and physical fitness
Policy Organizations and Advocacy Groups	• Provide input and insights on policy and other advocacy needs, opportunities, and strategies • Lead or contract with HECs to lead policy and advocacy efforts

Local Businesses/ Employers	• Implement value-based insurance designs or non-insurance incentive programs to engage employees in healthy eating, an active lifestyle, and participation in preventive health care
	• Introduce direct-to-provider savings incentives that reward achievement of prevention benchmarks aligned with interventions adopted by the HEC
	• Adopt family-friendly policies (e.g., on-site childcare, flexible work schedules, flexible emergency leave)
	• Implement strategies to support health at worksites (e.g., on-site fitness centers, subsidized reduced pricing for healthier foods in workplace cafeteria)
	• Implement anchor institution strategies within communities
	  ○ Invest in HECs and community efforts that support child well-being and healthy weight and physical fitness
	  ○ Work with HEC partners to improve economic conditions in HEC communities and among HEC populations (See Section 3.3.5.4 for detail)

Funders, Financial Institutions, and Investors	• Invest in HECs, particularly upfront start-up funds to enable financing options (See Section 7.2 for detail)
Health Plans	• Implement value-based insurance designs to engage members in healthy eating, an active lifestyle, and participation in preventive health

Key Sector	Additional Potential Roles in Supporting HEC Success
	• Enhance value-based payment models by addressing social determinants of health, community health, and preventive care aligned with interventions adopted by the HEC

3.3.6.3. Community Economic Vitality and Anchor Institutions

The economic health of a community and its residents is essential to both child well-being and healthy weight/physical activity. The HEC Initiative could be a catalyst for existing or emerging anchor institutions to implement or expand strategies that improve the economic vitality of their communities. Anchor institutions are businesses, health care organizations, academic institutions, cultural institutions, and other organizations rooted in their surrounding communities that work outside their own walls to contribute to the health and well-being of their communities. Anchor institutions can have significant economic impacts through employment, revenue generation, and spending. The Population Health Council recommends that the State Partnership encourage and, if feasible, incentivize anchor institutions to develop and implement mutually beneficial strategies that can foster economic development and provide new opportunities for people in HEC communities and publicly report on their anchor institution activities.

Case Studies

Kaiser Permanente, a national health care organization headquartered in Oakland, CA, has taken on an anchor institution role by thinking about how it does business from a community development lens and considering how it could use all its assets—beyond community benefit—to improve the conditions for health in the neighborhoods it serves. "If we're going to have a measurable impact on population health, we need to move everything we've got. Not just the $2 billion that's community benefit. The other $58 billion is the rest of the enterprise," said Tyler Norris, Vice President of Total Health Partnerships at Kaiser Permanente in a Public Health Institute web forum.[111]

This includes providing good jobs, purchasing locally and diversely, building for impact, and engaging in policy.[112] Examples of activities include:

- *Reducing barriers for people with a criminal history.* Kaiser limits background check inquiries, consistent with California law, to criminal convictions from the past seven years and mostly serious offenses rather than lesser offenses such as disorderly conduct.[113]
- *Promoting education.* In Alameda County, Kaiser has made large investments in Oakland Unified School District for school-based health, African-American Male Achievement, and strategic plan

[111] Growing Healthcare's Anchor Mission. *CommunityWealth.org*. https://community-wealth.org/content/growing-healthcare-s-anchor-mission. Date ccessed 10/21/18.
[112] Rosenberg, J. (2018). Health Systems Take on Role as Anchor Institutions, Enhance Community Development. *Public Health Institute*.http://www.phi.org/news-events/1472/health-systems-take-on-role-as-anchor-institutions-enhance-community-development. Date accessed 10/21/18.
[113] Rubin, V. and Rose, K. (n.d.). Strategies for Strengthening Anchor Institutions' Community Impact. *PolicyLink*. https://www.policylink.org/sites/default/files/pl_brief_nola_institutional_FINAL3.pdf. Date accessed 10/21/18.

implementation, and manages summer youth and internship programs to support career pipeline development.[114]

- *Investing in housing.* Kaiser made a $200 million investment through its Thriving Communities Fund to support the preservation and expansion of affordable housing nationwide. [115]
- *Prioritizing local and diverse procurement.* In Alameda County, a Supplier Diversity Group looks at the economic benefits of its contracts and, as a result, ended the contract with its laundry provider for the 17 million pounds of laundry it does annually to procure laundry services locally. It also has incentives to procure minority- and women-owned businesses, and businesses employing veterans and disabled workers.[116]

Prudential Financial is a public corporation that serves as an anchor institution in Newark, NJ, where it has been headquartered since it was founded in 1875. Prudential is one of multiple anchor institutions in Newark that are using their purchasing power to support local businesses and invigorate the surrounding community. Prudential has a buy-local plan that aims to keep procurement dollars in Newark. According to a 2017 marketing piece:

- Prudential's goal was to direct at least 7 percent of its total procurement spending to diverse vendors. This includes Newark-based firms as well as firms owned by minorities, women, veterans, disabled, or LGBTQ individuals.
- It increased spending on Newark-based organizations by 131 percent between 2014 and 2016, in part by using local construction companies to build the new Prudential Tower.
- It is supporting and seeking sustainable local business relationships such as Newark-based Gateway Security, with which Prudential increased its business by more than 50 percent from 2014 to 2016.[117]

Other Examples

Examples of what anchor institutions can do to improve the economic vitality of communities include but are not limited to:

[114] Anchor Institution Initiative Research Report. (2015). *Alameda County Social Services Agency*. http://alamedasocialservices.org/acwib/info-research/documents/display.cfm?folder=documents&filename=Anchor_Institutions_Alameda_County4.pdf. Date accessed 10/21/18.

[115] Rosenberg, J. (2018). Kaiser Permanente Investing $200 Million to Address Housing Instability, Improve Health. https://www.ajmc.com/newsroom/kaiser-permanente-investing-200-million-to-adress-housing-instability-improve-health. Date accessed 10/21/18.

[116] Anchor Institution Initiative Research Report. (2015). *Alameda County Social Services Agency*. http://alamedasocialservices.org/acwib/info-research/documents/display.cfm?folder=documents&filename=Anchor_Institutions_Alameda_County4.pdf. Date accessed 10/21/18.

[117] By Supporting Local Businesses, Anchor Institutions Grow Communities. (2017). *The Atlantic Re:think Original marketing article paid for by Prudential*. https://www.theatlantic.com/sponsored/prudential-2017/newark-buy-local/1308/. Date accessed 10/10/18.

- Directing a significant portion of their purchasing power toward local vendors and enacting policies to pay local vendors in advance
- Partnering with local economic development corporations to provide small-business training
- Providing capital or a housing loan fund to promote home ownership and affordable housing
- Providing low- to no-interest loans to spur social enterprise among nonprofit organizations
- Providing job training and entry-level opportunities for local workers
- Targeting community benefit dollars to produce specific community benefits
- Contracting with local community-based organizations to provide services, including services targeting social determinants of health

4. HEC MEASUREMENT AND PERFORMANCE

At the heart of this initiative is HEC accountability for preventing poor health outcomes, improving health equity, and reducing costs. That requires having clear goals, aims, and measures to drive all HECs toward the same definition of success at the state and community levels.

This section will discuss the:

- Goals and aims of the HEC Initiative
- Performance and outcome measures for which HECs will be held accountable

4.1. HEC Goals and Health Priority Aims

The HEC Initiative has three ambitious but achievable goals:

- Make Connecticut the healthiest state in the country.
- Make Connecticut the best state for children to grow up.
- Bend Connecticut's health care cost curve.

To accomplish these goals, the HEC Initiative will focus on two priority aims:

- **Improving Child Well-Being for Connecticut Pre-Birth to Children Aged 8 Years:** Assuring all children are in safe, stable, and nurturing environments
- **Improving Healthy Weight and Physical Fitness for All Connecticut Residents:** Assuring that individuals and populations maintain a healthy or healthier body weight, engage in regular physical activity, and have equal opportunities to do so

HECs will also address populations who are at risk for poor outcomes by implementing interventions that 1) build resilience in children who may have adverse childhood experiences and 2) assist people who are overweight or obese maintain or lose weight.

4.2. Statewide Prevention Measures and Benchmarks

To measure progress (through an attribution methodology[118]), the Population Health Council recommends that HECs be held accountable for a core set of prevention health measures based on outcomes that relate to the two health priority aims. These prevention measures will be consistent statewide and will be assessed at both the HEC and statewide levels. For each priority aim, designated primary prevention measures will carry the most weight in evaluating the performance of each HEC. Secondary prevention measures will serve to complement the goals of the primary measures (safety, stability, and school readiness and reduced obesity).

In addition to the statewide prevention measures and benchmarks, each HEC must individually choose process and outcome measures to target and track related to each of their chosen programmatic,

[118] Attribution determines the population for whose health the HEC is accountable. All or a sub-population within the attributed population will serve as the denominator for performance measurement. For more details on the proposed HEC attribution model, see Section 7.

systems, policy, and cultural norm interventions. These requirements are discussed further in Section 4.3 of this report.

4.2.1. Provisional Measure Selection

The sections below describe the provisional measures lists for each health priority aim. The provisional measures were chosen based on stakeholder input, evidence connecting them with the two priority aims, and identified data sources. This list is not final and will continue to evolve through the collaborative HEC design process prior to procurement. As discussed in further detail in Section 4.4 of this report, the final measurement data selected must meet the following criteria: significantly meaningful to the HEC goals, specific to the attributed population within each HEC, collected and reported on with minimal lag time, stratified to the extent possible by population characteristics, and easily accessible to each HEC. The total number of measures may also change to achieve the optimal balance between developing a comprehensive set of targets and avoiding an overly burdensome HEC design.

Although research supports ties between additional characteristics and adverse outcomes under the priority aims, measures that would create perverse incentives were excluded. For example, children of parents who have accessed public assistance programs such as Women, Infants, and Children (WIC), Temporary Assistance for Needy Families (TANF), and Supplemental Nutritional Assistance Program (SNAP), have shown an increased risk for entry into foster care or child maltreatment.[119] However, determining the success of an HEC using a measure of decreased utilization of public assistance programs may create a perverse incentive for individuals to forgo assistance programs for which they are eligible based on need.

It is understood that some provisional measures may contain biases. For example, rate of school suspensions is included as a secondary measure under the child well-being priority aim. However, as previously noted, statewide, Black or African American students are four times more likely to be suspended than White students and Latino or Hispanic students are more than twice as likely to be suspended as White students despite national research suggesting no difference in misbehavior across racial groups of students.[120] Identifying and addressing these biases to the extent possible will be a component of the next stage in the design process as the measures are finalized.

In addition to the measures listed below, as baseline data is collected, sub-categories of measures will be added to address observed health disparities. Health equity/inequity measures will also be incorporated into the provisional measures list based on the results of a concurrent project under the Health Information Technology Program Management Office. The purpose of that project is to identify health equity data and collect and incorporate those key data elements into the state's emerging health analytics architectures.

Additional provisional measures may include relevant Medicaid HEDIS measures to ensure alignment with primary care, and additional measures related to health behaviors shown to correlate directly with the priorities may be added if a timely data source is identified or state reporting requirements are expanded to capture this data at the provider level. Discussions with state agencies and other potential

[119] Data, Evidence, and Modeling: The Oregon Experience. Chris Kelleher. Center for Evidence-based Policy presentation at Southern California Open DataFest. January 24, 2017.
[120] Connecticut Voices for Children. *Candidate Briefing Book*. August 2018.

partners and stakeholders related to the availability and appropriateness of measures are ongoing. More comprehensive detail on the provisional measures lists, including identified data sources, is included in Appendix 1.

4.2.2. Child Well-Being Prevention Measures

As detailed in Section 2, the presence of ACEs in a child's first eight years of life significantly increases their risk for certain health behaviors and conditions and shortens their expected lifespan. To capture both causes and outcomes of children experiencing ACEs, a composite measure of a child's safety, stability, and school readiness will serve as the primary prevention measure for evaluating progress under the child well-being priority area. This composite measure will comprise three individual measures:

- Rate of substantiated child abuse/neglect cases per 1,000 for children age 0 to 8 years
- Rate of chronic absenteeism
- Performance level on all six domains of the Kindergarten Entrance Inventory[121]

The provisional list of prevention measures shown in Table 4 below includes two types of secondary prevention measures: measures related to children at risk for or already having experienced ACEs and measures related to parents found to correlate with increased risk for maltreatment or entrance into foster care. The secondary measures relating to children represent a range of causes and outcomes related to ACEs, including child involvement with the Department of Children and Families, acting out in or difficulty completing school, housing instability, victim or self-infliction of violence, and adverse environments. In addition, combining and tracking multi-sector data has shown that certain adverse caretaker/child characteristics have an effect on a child's risk for maltreatment and foster care, including smoking during pregnancy, incarceration of a caretaker, and low birthweight births.[122] Measures related to children will focus on pre-birth to age 8 years but will also include secondary measures related to older children to capture the impact of early interventions over the long term.

In the future, an additional measure may be added to assess the percentage of students in kindergarten and first grade who need special education but had not received an early intervention prior to starting kindergarten. The use of this measure will require the integration of data on existing early intervention programs with HEC intervention utilization data. Additional measures of child protective factors may also be added as sources are identified in order to underscore the importance of building resilience among children.

[121] The Kindergarten Entrance Inventory includes six domains: literacy skills, numeracy skills, physical/motor skills, creative/aesthetic skills, and personal/social skills.

[122] Kelleher, C. (2017). Data, Evidence, and Modeling: The Oregon Experience. *Center for Evidence-based Policy presentation at Southern California Open DataFest*.

Table 5. Child Well-Being Provisional Measures

Measure Level	Child Well-Being Provisional Measures
Primary Composite Measure	*Composite measure of a child's safety, stability, and school readiness:* • Substantiated child abuse/neglect cases per 1,000 population ages 0 to 8 years • Rate of chronic absenteeism • Performance level on all six domains of the Kindergarten Entrance Inventory
Secondary Measures—Related to Children	Children in placement with the Department of Children and Families per 1,000 population under 18 years
	Infants removed from mother at birth
	Children referred to Juvenile Court per 1,000 population under 18 years
	Rate of school suspensions
	Rate of non-graduates no longer enrolled in a four-year graduation cohort[123]
	Children who moved schools more than once in the past two years per 1,000 population under 18 years
	Hospital emergency department visits for children with injuries per 1,000 population under 18 years
	Hospital emergency department visits for children related to substance abuse per 1,000 population under 18 years
	Hospital emergency department visits for children related to mental health issues per 1,000 population under 18 years
	Hospital emergency department visits for children with asthma per 1,000 population under 18 years
	Hospital inpatient admissions for children related to substance abuse per 1,000 population under 18 years
	Hospital inpatient admissions for children related to mental health issues per 1,000 population under 18 years
	Percent of babies breastfed
	Disruptive behavior disorder prevalence among population under 18 years
	Composite measure: Population screened for elevated blood lead levels under 6 years of age and population testing positive for elevated blood lead levels

[123] Data is collected at the school district level and as such, students no longer enrolled may include students enrolled in another school or GED program.

Measure Level	Child Well-Being Provisional Measures
Secondary—Related to Parents	Percent of births to a mother who smoked during pregnancy
	Percent of births to parents who have not completed high school
	Percent of births born with low birthweight
	Percent of births preterm (< 37 weeks gestational age)
	Teen birth rate per 1,000 female population ages 15 to 19
	Incarcerated caregiver per 1,000 population under 18 years
	Percent of mothers screened for maternal depression
Future Secondary Measures	*Percent of students starting Kindergarten and first grade who need special education but had not received an early intervention before Kindergarten*
	Additional measures protective factors

4.2.3. Healthy Weight and Physical Fitness Prevention Measures

Also detailed in Section 2, a high BMI increases an individual's risk for developing many types of serious medical conditions, including diabetes and cardiovascular disease. As such, the prevalence of adult and child obesity will serve as the primary prevention measures for evaluating progress under the healthy weight and physical fitness priority aim.

The provisional list of prevention measures shown in Table 6 below includes secondary prevention measures. These measures include both measures of physical aptitude and prevalence of chronic conditions associated with obesity. Additionally, two secondary measures are included for future consideration. As technology continues to progress and become more affordable and accessible, the hope is to add a secondary measure of activity levels tracked through portable and/or wearable technology devices that measure data such as the number of steps walked by an individual. A measure of hunger is also desired to highlight inadequate access to nutritious food sources to achieve and maintain a healthy weight; however, research is ongoing to identify an appropriate data source for this measure.

Table 6. Healthy Weight and Physical Fitness Provisional Measures

Measure Level	Healthy Weight and Physical Fitness Provisional Measures
Primary Measures	Adult obesity prevalence
	Child obesity prevalence
Secondary Measures	Students reaching Health Standard on Connecticut Physical Fitness Assessment • Grade 4 • Grade 6 • Grade 8 • Grade 10
	Adult hypertension prevalence • Age-adjusted • Non-age-adjusted
	Adult diabetes prevalence • Age-adjusted • Non-age-adjusted
	Congestive heart failure prevalence
	Coronary heart disease prevalence
	Stroke prevalence
	Chronic kidney disease prevalence
	Rheumatoid Arthritis/Osteoarthritis prevalence
Future Secondary Measures	*Activity levels, potentially:* • *Average number of steps walked*
	Prevalence of hunger

4.2.4. Prevention Benchmarking

For each primary and secondary measure, prevention benchmarks will serve as the targets for HECs. The State Partnership and their payer partner(s) will establish these ambitious but achievable benchmarks through an assessment of baseline state data, historical and projected trends, and national quality standards. Additional sub-categories of measures will be added to address any health disparities observed in the baseline data. These health disparities may relate to granular race/ethnicity, age, sex, gender identity, language spoken and English-language fluency, disability, educational attainment, insurance status, and/or household income.

As each community contains unique strengths and challenges, HECs' baselines for each measure will vary. To address this, progress to benchmark goals will rely on two components: 1) how does the HEC compare with the state overall and its HEC peers and 2) how is the HEC improving. Over time, HECs will be measured based on an outlined minimum level of progress toward the benchmark targets. This minimum progress level will be consistent statewide. Once an HEC meets a benchmark, success will be measured based on at least maintaining that benchmark level.

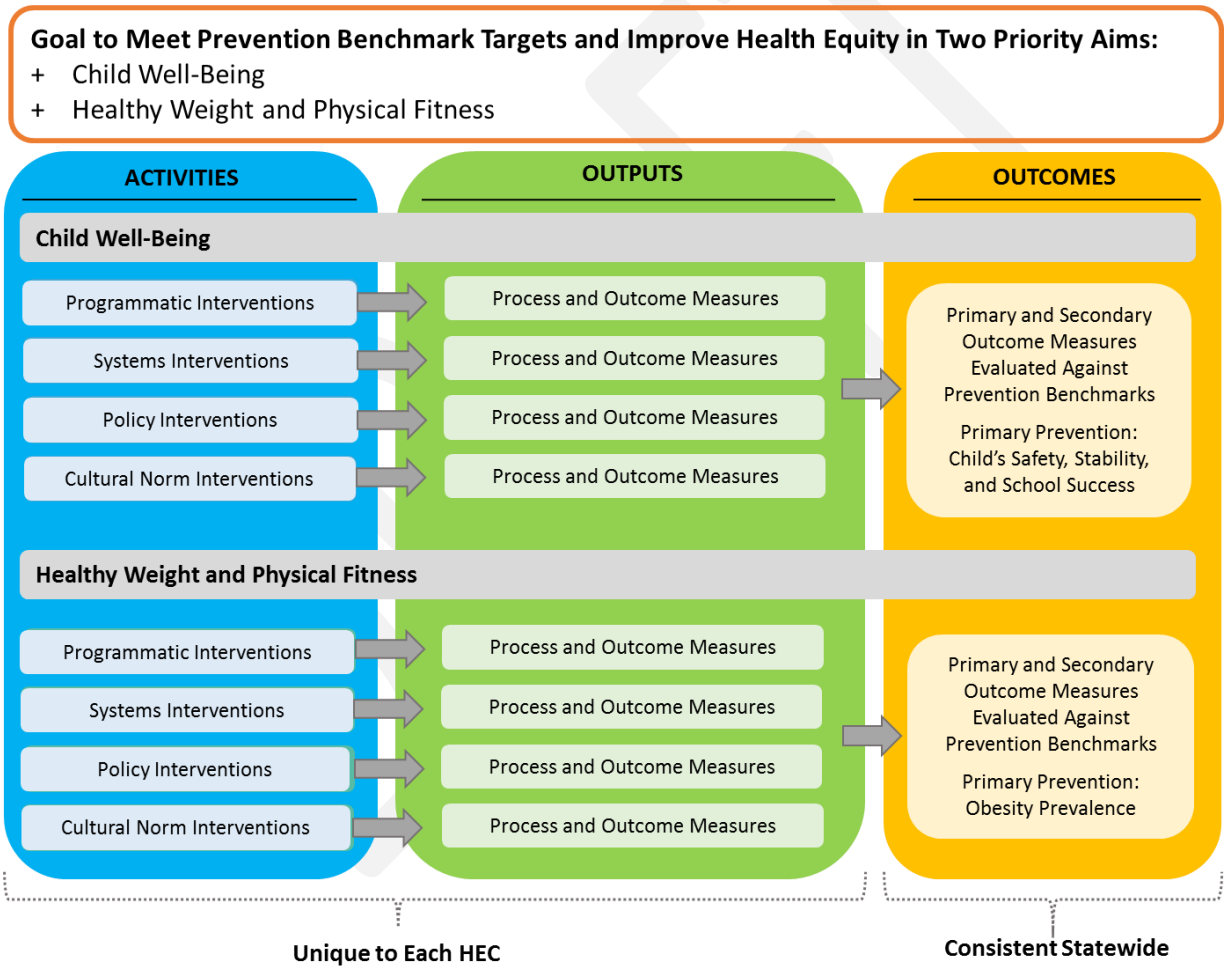
4.3. HEC Outputs

To track the progress of activities aimed at influencing the prevention measures, HECs will also report on process and outcome measures related to their chosen interventions. Unlike the prevention

benchmarks, this set of measures will be unique to each HEC. Because the success of the HEC Initiative will require more than just programmatic activities, each HEC must choose process and outcome measures for each of the four types of interventions: systems, policy, programmatic, and cultural norms. Examples of process and outcome measures related to each of the four types of interventions are included in the sections below.

All HEC-level interventions, process measures, and outcome measures will serve to advance the objective of meeting the prevention benchmarks as well as provide HECs with actionable information as they are implementing and evaluating their progress and achievement. HECs must demonstrate the alignment of their intervention choices with the state outcome goals using a logic model based on the structure provided below.

Figure 13. HEC Activities, Outputs, and Outcomes



HEC intervention-specific process and outcome measures will ensure that HECs understand and are accountable for the steps needed to implement and track their chosen interventions. HECs will be accountable to the state for completing process measures and reporting on outcome measures. Process measures may include required intervention milestones to ensure HECs implement and scale activities in a timely manner.

4.3.1. HEC Process and Outcome Measures Related to Programmatic Interventions

Programmatic interventions include prevention programs aimed at addressing the root causes of the poor health associated with the HEC health priorities and health inequity. Multiple programmatic interventions may have overlapping process and outcome measures. Some interventions may be specific to a subset of the population and some may be targeted to the entire attributed population of the HEC. Examples of programmatic intervention measures include:

- Reporting on the number of programmatic intervention participants
- Implementation of programmatic interventions by a certain date
- Measuring changes in targeted health behaviors throughout the intervention

4.3.2. HEC Process and Outcome Measures Related to Systems Interventions or Development

Implementing and measuring the success of the programmatic interventions will require systems interventions and development. Measures for these interventions will ensure HECs aim to successfully implement the intervention components. Examples of systems intervention or development measures include:

- Implementing data use sharing agreements to share data across systems with the same eligibility criteria
- Building a network of community resources to address inequities within the HEC

4.3.3. HEC Process and Outcome Measures Related to Policy Interventions

In addition to systems development, programmatic interventions may require complementary policy changes. Examples of a policy intervention measures include:

- For a community garden intervention, working with a school district to create new policies to allow access to school grounds after hours and during the summer
- Creating a statewide advocacy group to promote policy changes related to a programmatic intervention or the overall priority areas (e.g., required calorie posting)

4.3.4. HEC Process and Outcome Measures Related to Cultural Norm Interventions

The success of HECs may also require changes in cultural norms related to the way the community thinks about health and accesses services. Examples of cultural norm intervention measures include:

- Using social media to promote child well-being as a shared responsibility through communities
- Measuring changes in attitudes, knowledge, perception/self-efficacy, exposure, liking, and willingness related to fruit and vegetable consumption among participants using a validated individual questionnaire[124]

[124] Example: Tool: Knowledge, Attitudes, and Consumption Behavior ("KA") Survey. https://www.cias.wisc.edu/foodservtools14/7-evaluate-your-work/knowledge-attitudes-consumption.pdf. Date accessed 8/14/18.

4.4. Measurement and Reporting

The provisional prevention measures lists contain indicators derived from a variety of sources including claims data, electronic health records, vital statistics, and other government agencies, including the Department of Children and Families, the Judicial Branch, and the Department of Education. Statewide, community-level data for measurement will come directly from the source agencies, and HECs will not hold responsibility for individually collecting or requesting access to this data. In contrast, tracking HEC-specific process and outcome measures unique to each HEC's chosen interventions will be the responsibility of the HEC. Infrastructure and data reporting requirements must be in place to ensure HECs can collect and report on the necessary data components. A statewide data solution will serve to collect, aggregate, and provide the necessary data to HECs and to the state to monitor and evaluate HEC performance.

Under a complementary SIM initiative, Connecticut is in the process of developing a Core Data Analytics Solution (CDAS). As currently envisioned, CDAS will aggregate data from multiple sources such as claims data from the All Payer Claims Database (APCD) and transactional and clinical health care data directly from providers and will have the ability to accept and incorporate datasets from other state agencies and organizations. Using this data, CDAS will have the ability to produce HEC-specific dynamic dashboards containing measures data stratified across race/ethnicity, socioeconomic status, and other population characteristics to provide HECs with timely data demonstrating the needs of their population. CDAS will also have the ability to accept process and outcome measure data directly from the HECs.

In addition to the HEC-facing dashboards, CDAS will allow for the state to monitor HEC- and state-level progress related to the process and outcome measures and progress toward the prevention benchmarks. CDAS will also allow for the development of reporting templates to create comparisons across communities implementing the same intervention models.

Collection of consistent and accurate data across HECs will play a critical role in determining the effect of HEC activities on the statewide prevention benchmarks. Measurement data must meet the following criteria:

- Specific to the attributed population within each HEC to isolate measurement to the targeted population
- Include geographic markers to allow for hot spotting analysis[125] to best target interventions
- Collected and reported on with minimal lag time (i.e., at most annually, preferably three to six months) to allow for HECs to review the data and adjust efforts accordingly through rapid cycle improvement[126]
- Stratified, to the extent possible, by granular race/ethnicity, age, sex, gender identity, language spoken and English-language fluency, disability, educational attainment, insurance status, and household income to allow for the identification and targeting of health inequities

[125] Hot spotting analysis uses statistical analysis to identify geographic areas of high prevalence compared to areas of low prevalence.

[126] Rapid cycle improvement is a quality improvement method by which system and process changes are identified, implemented, and measured over short periods of time.

- Eventually uploaded into and viewable through CDAS

To properly use CDAS for reporting and monitoring, HECs will require training and technical support. Additional information related to CDAS is included in Section 6.1 of this report.

4.5. Evaluation

Prior to implementation, the Population Health Council recommends that each HEC will create a formative and outcomes evaluation plan. The evaluation plan will include a logic model similar to Figure 13, outlining needs, activities, short-term outputs, intermediate and long-term outcomes, and vision.

The formative evaluation will help funders and stakeholders identify all aspects of the interventions, environment, participants, and other HEC characteristics that can communicate the HEC's success. The formative evaluation assesses the way the initiative will be operationalized and tailored to the environment, including the HEC's rollout, evolution, outcomes, and sustainability. Data gathered during the formative evaluation will be useful in keeping funders and external stakeholders apprised of the HEC's progress. The information is particularly useful to people external to the HEC who may not fully understand its context. Results from the formative evaluation will help provide course correction to an HEC, potentially requiring additional technical assistance to ensure each HEC is able to achieve its intended outcomes.

One of the most difficult components of any evaluation is demonstrating cause and effect. Without an experimental design, it is often impossible to state with certainty that an initiative caused positive outcomes such as better quality of life. In the absence of an experimental design, the evaluation must document activities, measure both short-term and longer-term outcomes, and make logical assertions that the activities undertaken may be associated with the outcomes. To do this, the evaluation will develop a clear articulation of the logic behind activities; strong arguments for a theory of change; and a plan to measure activities, progress, challenges, changes, and outcomes to uncover linkages between what is being undertaken and changes that are observed. The evaluation plan will identify the kinds of data to be collected to answer key evaluation questions. The evaluation will ensure that data collection efforts are mindful of existing resources and capacity for evaluation, and together will produce credible results that are reliable, valid, and sufficiently sensitive to detect changes in outcomes.

4.6. Challenges and Mitigation Strategies Regarding Measures

It is likely that HEC populations will vary in size and characteristics, including demographic, medical, and social risk factors. HECs will also vary across other key characteristics that impact health care costs and overall population health, including access and capacity of local health care providers, social service agencies, and other community-based organizations. Holding HECs accountable will require the development of reliable methodologies to calculate baseline measurements and projected outcomes absent the HEC Initiative. This is important because, over time, certain demographic, environmental, technological, and health innovation changes and advancements will affect population health independent of HEC interventions and impacts. Ongoing advances in clinical care and health innovation (e.g., new pharmaceuticals and therapies) may potentially reduce the negative health outcomes associated with certain chronic conditions and epidemics or other environmental factors may increase negative health outcomes.

Because HECs will be geographically based initiatives and will cover the entire state, an analysis that includes a true control group may not be possible. As a result, the determination of HEC benchmarks will require statistical adjustments and modeling that accounts for changes that may have occurred irrespective of HEC interventions. Use of data from other states or localities may be necessary to accomplish this modeling, however, this may limit the use of more innovative measures that are not widely adopted.

One potential byproduct of increasing awareness related to the two priority areas is increased detection of conditions such as childhood trauma or obesity-related conditions such as diabetes, potentially resulting in measures of increased adverse outcomes in the early years of the initiative. A reporting period (e.g., 18-months or 2 years) at the onset of the HEC Initiative would allow for the establishment of accurate benchmarks including the potential previously unengaged population.

CDAS has the potential to create a large-scale, multi-sector data repository that would provide invaluable comprehensive profiles of the HEC communities. To achieve this goal, appropriate data use agreements across state agencies and HECs must be put in place requiring strong buy-in from state partners and reasonable timelines.

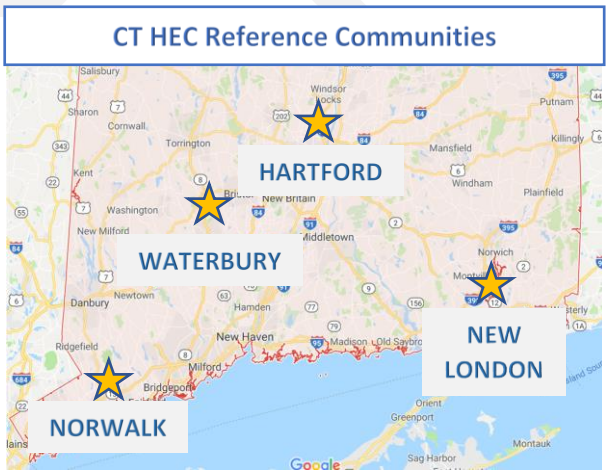
5. REFERENCE COMMUNITIES ENGAGEMENT IN HEC DESIGN

5.1. Participating Reference Communities

It was important to ensure that the HEC model is ambitious in its goals and methods while still being realistic and achievable. To this end, the state engaged four existing community collaboratives to serve as "Reference Communities" and contribute to HEC model design and inform the development of a feasible implementation plan. Reference Communities gave the broader community a voice in the design of the HECs, validated or modified underlying design assumptions, validated or modified key design elements from their community's perspective, and provided feedback on the resources that would be needed to support the implementation of an HEC in their communities.

The state selected the four Reference Communities through a competitive application process. Applicants had to demonstrate that they were well organized, high-functioning, had significant multi-sector partnerships and representation, and a solid plan for direct engagement of community members. As a result, the following four were selected:

5.1.1. Greater Norwalk Health Improvement Collaborative



The Greater Norwalk Health Improvement Collaborative works to assess and improve the region's health and implement improvement strategies by engaging and partnering with multiple stakeholders throughout the Greater Norwalk region. The work of this collaborative is guided by the region's periodic Community Health Assessment (CHA) and Community Health Improvement Plan (CHIP), the most recent iteration of which was completed in 2016. Involving more than 200 community partners, members of the collaborative work together to address community health in Norwalk and its surrounding towns, including Westport, Weston, Wilton, New Canaan, Darien, and Fairfield. The collaborative understands and seeks to strengthen partnerships among community groups, which adds richness, cultural relevance, and expertise to any project while leveraging resources and building capacity.

5.1.2. Greater Waterbury Health Partnership (GWHP)

Founded in 2013, GWHP was established to fund and coordinate the first local collaborative Community Health Needs Assessment. Since then, its mission has evolved to provide access to quality, culturally sensitive, and evidence-based health information to greater Waterbury residents and organizations, and to coordinate local health care services to improve overall community health. Its mission is based on community collaboration as a critical element to meet the needs of its diverse communities and is supported by data. GWHP consists of 6 founding partners from the Waterbury community and 46 multi-sector organizations.

5.1.3. Health Improvement Collaborative of Southeastern Connecticut (HIC)

The vision of the HIC is to ensure that Southeastern Connecticut is a community healthy in body and mind that promotes access, health equity, social justice, inclusiveness, and opportunities for all. The HIC includes representation from over 100 community agencies, and one third regularly participate in meetings and Action Teams. In particular, the HIC has advanced work through its Opioid Action Team, its Access to Care Team, and its Healthy Lifestyles Team, all of which have received funding to implement evidence-based strategies to further the health of the community.

5.1.4. North Hartford Triple Aim Collaborative (NHTAC)

The NHTAC has served as a hub for a broad array of health and human services leaders citywide to collaborate across agencies on issues affecting North Hartford and the City. The NHTAC also serves as the health and wellness workgroup for the North Hartford Promise Zone. In that capacity, it has convened a diverse set of local leaders that work together to address the triple aim of improved population health/life expectancy, community well-being, and value of investment (impact per dollar spent) measured at the neighborhood level. The core of the NHTAC's work is addressing social determinants of health. The NHTAC Leadership Council consists of representation from eight community organizations and involvement of numerous other multi-sector agencies and community stakeholders. For their Reference Community engagement, they expanded their geographic scope to include the entire City of Hartford.

A list of participating organizations by Reference Community is contained in the HEC Stakeholder Engagement summary in Appendix 2.

5.2. Reference Community Engagement Process

Reference Communities were tasked with providing input into specific design questions related to the HEC model. These included:

- **Accountability:** What appropriate expectations should be for HECs
- **Boundaries:** What criteria and processes should be established to determine geographic boundaries; what flexibility HECs should have versus what should be required
- **Focus and Activities:** What HECs will do to prevent poor health and improve health equity; what flexibility HECs should have versus what should be required
- **Health Equity:** How to define health equity and what approaches could ensure that health equity is embedded in the HEC Initiative
- **Infrastructure:** What systems, supports, and resources are needed to advance HECs (HIT, data, measurement, workforce)
- **Governance and Partnerships:** How HECs will organize themselves to implement strategies; what flexibility HECs should have versus what should be required
- **Sustainability:** Considerations for the HEC financing model
- **Regulations:** What regulatory levers could help advance HECs
- **Engagement:** How to ensure meaningful engagement and involvement from community members and stakeholders

- **State Role:** How the state can support the success of the HECs

Health Management Associates (HMA) and the state worked closely with each individual Reference Community to educate participants on the HEC model goals and structural elements. The foundation for this work was the Reference Community Engagement Framework (Appendix 3), which describes specific HEC elements, key questions, information inputs/sources, and outcomes to be documented in a final report. Over the course of a six-month period, Reference Communities were offered six topic-focused webinars and two day-long, in-person work sessions to solicit input and feedback on specific HEC design elements. The topic-specific webinars included:

- Introduction to the HEC Model
- Potential Menu of HEC Interventions
- Examples of HEC-like Models from other States
- Data and Measurement for HECs
- Financing Model for HECs
- Community Engagement and Final Report

Throughout the process, input from Reference Communities contributed significantly to HEC model design as it evolved.

In addition to the webinars, each Reference Community convened their partners for two day-long interactive Deep Dive sessions[127] in which they collectively were presented with HEC design element concepts and provided feedback that was captured and integrated into the HEC model as it evolved.

To further support the Reference Communities, HMA provided technical assistance to each Reference Community to ensure that unique issues and needs were addressed. Coaching calls were held with Reference Community project staff. As a final step in the process, Reference Communities were asked to complete a report documenting specific decisions or recommendations they had for the HEC model. For this work, HMA provided a template report to the Reference Communities along with summaries of feedback, discussion, and outcomes documented from each group deep dive session.

Reference Communities also either included community members in the planning activities and/or did outreach to get their input on the HEC design. Community residents provided meaningful feedback that influenced or validated the design of the model and/or will inform the planning and implementation of HECs and the HEC Initiative. Thus far, community members have shown interest/enthusiasm in priority areas of child well-being and healthy weight/physical fitness and were especially interested in the focus on root causes of poor health. They also were eager to talk about what they think the root causes are, including issues related to the impact of housing instability/access to affordable housing, lack of transportation, limited financial resources that impede the ability to prioritize healthy food purchases/choices, and a low awareness of existing resources in the community that are currently available to help address root causes and health priority areas. Other community members validated the intervention framework and said that many different types of interventions should happen to change poor outcomes and suggested that geographies for HECs be either determined by or guided by the State Partnership so that boundary decisions do not take a long time. As indicated below, they also gave

[127] Due to scheduling timing, Hartford held one day-long session, one half-day in person session, and two 90-minute webinars

specific feedback on how community member engagement and involvement should be part of the HEC planning and implementation. See Appendix 2, Table 15 for a full list of community engagement events implemented by the Reference Communities. Also see Appendix 2, Table 14 for a summary of Reference Community resident feedback as well as feedback from other direct community engagements implemented and how the feedback influenced the HEC model design.

5.3. Reference Community Input and Feedback

Input from the Reference Community deep dive sessions and community engagement contributed significantly to the HEC model design as described in this report. Several key themes emerged collectively from the Reference Communities.

Meaningful community member involvement. Community members said that the HEC model should adopt the community involvement philosophy of "nothing for us without us" and gave input on multiple ways to ensure that community involvement is meaningful, including directly involving community members in all aspects of HEC formation, implementation, and evaluation; having multiple mechanisms for community members to exercise their decision-making roles, including options in community settings and other than daytime meetings; making it easier for community members to meaningfully engage in HECs, including providing financial support, training, and leadership development; and having what community members said reflected in what the HEC is and does.

Focus on health equity. Reference Communities were all passionate about the concept of health equity. They emphasized that this concept should not be lost in the HEC effort and suggested several ways to ensure its inclusion. Reference Communities specifically noted that measures for health equity/inequity should be included in order to be able to monitor and demonstrate improvement.

Need for a balance between focus and flexibility. Reference Communities agreed that having focus across all HECs was important to achieve state-level outcomes but that each HEC needed flexibility to make decisions about HEC design and implementation that worked best in their circumstances and among their communities and partners. They wanted the flexibility to select and target interventions in their communities to areas of most need and greatest impact. Reference Communities also wanted the flexibility to ensure that they are able to build upon and integrate existing successful efforts into the HEC model. However, they recognized that leaving the model completely open would actually limit their speed to action (e.g., by having to dedicate significant up-front time to set up structure and parameters).

Geography. Reference Communities expressed the need for flexibility in how geographic boundaries of HECs are determined. As Reference Communities considered what their proposed geographic boundaries would be should they become an HEC, all four Reference Communities had unique issues with determining the answer. All expressed strong reservations toward the state mandating another service area for the HEC, given that the state is already divided up into different geographies for multiple other initiatives, which already is a challenge to track and reconcile. In addition, a few Reference Communities expressed reservations regarding defining geography to combine urban, suburban, and rural areas to meet critical mass, noting that it may not achieve the right mix of similar interventions needed to make the HEC successful. Reference Communities also identified that policy changes that span different geographic and municipal entities are likely to be more challenging and require longer time horizons. For example, public school systems may be key to some intervention strategies. However, coordination of changes within different school systems is a complex and significant challenge. Finally,

Reference Communities that were served by more than one hospital discussed the need to consider boundaries relative to catchment areas for data collection and service purposes. Given these issues and considerations, this led to the recommendation that the state allow each HEC to determine their own geographic boundaries with some parameters.

Alignment of existing initiatives with HEC model. Reference Communities all emphasized that HECs should not be considered a new, separate project but one that has the capability to create a unifying framework to align existing community efforts and resources. Each Reference Community identified existing partners and programs that are implementing effective interventions in the identified HEC priority areas that could be leveraged to create the foundation for a successful HEC. Reference Communities saw the opportunity for HECs to create an overarching structure to work collaboratively, acknowledging that approaching HECs in this manner will help foster and deepen collaboration among partners. Some Reference Communities even identified it as a potential barrier if a new system is established when there may be one that partners already have invested significant time and resources to build (e.g., new IT/data collection system).

Role of key sectors. The Reference Communities thought there needed to be flexibility in determining the roles of key sectors if they were designing an HEC. Reference Communities all had multi-sector partnerships in place. However, the role of each partner varied depending on the circumstances and level of engagement unique to each community. Reference Communities recommended that they be allowed to determine the roles of key sectors based on their unique circumstances, the geographies they propose, and interventions they select. Reference Communities were opposed to having a mandate from the state for specific roles or contributions that any category of sector would have to make in the HEC Initiative although they recognized the need to have multiple sectors at the table, including some that are not yet participating in existing community collaboratives.

Desire for technical assistance. All Reference Communities expressed a desire for centralized support and technical assistance to design and implement the HEC. Multiple participants thought it would be beneficial in particular to provide templates and tools for key governance documents that would be similar among all HECs (e.g., partnership agreements, bylaws) that could be adapted or modified as needed. These types of items would save valuable start-up time and costs. In addition, the Reference Communities also requested establishing an effective forum to work across HECs to share strategies, challenges, and best practices and to learn from experts.

Funding. Reference Communities understood the HEC model funding concept. Several noted the limitations of traditional program-based funding and philanthropy, stating that without new funding models to support HECs, “we run the risk of creating or accumulating traditional funding streams to support an innovative model, a situation we are concerned is not sustainable.” Another Reference Community stated, "If only 'traditional' healthcare payers are engaged, then the result will be similar to what we have now. Bold ideas...need to be prioritized. We must make this process human-centered and not payment-centered for it to be successful." Many discussed the need for access to start up funds. One Reference Community indicated that local sources have all been tapped to fund existing programs, and if it appeared the HEC would also pursue funding from those sources to support HEC efforts it would undermine their ability to partner. Also Reference Communities discussed the need for a fiscal agent and were open to the option of creating a centralized resource that could be regionally shared with other HECs. Reference Communities also felt strongly that they should maintain control regarding how

to distribute implementation-related funds and shared savings in their communities, guided by their representative governance structures and partnership agreements.

Other support needs. Given this stage of HEC development, Reference Communities were not able to provide specific details regarding HEC start-up needs. However, they did identify areas in which they anticipated they would need support. These areas include addressing policy disincentives at the state and federal level; measure selection and standardization; centralized support regarding data collection, storage, and reporting; access to relevant data collected by state agencies on residents that would help inform strategy and monitor performance relative to HEC goals; and marketing and branding of the HEC model.

6. SUPPORT FOR HECs

6.1. Data Infrastructure: IT and Data Infrastructure to Support HECs

6.1.1. IT Infrastructure Needs

A robust IT and data infrastructure is critical for HECs to achieve their goals and collect and report on provisional statewide measures highlighted in Appendix 1 as well as measures related to the specific interventions selected by the HEC. HECs must understand what data is necessary to achieve transformation, the best vehicles for collecting and aggregating the data, and how to analyze and report it in such a way that it is meaningful and actionable. To optimize the use of data to drive transformation, the state and the HECs must:

- Select the best measures to monitor performance (including outcome, process, and financial measures)
- Clearly define measures (including risk stratification adjustments)
- Identify sources of data to be used
- Create/improve mechanisms for acquisition of data
- Share data in easy-to-understand formats
- Increase the capacity of the HECs to translate data into action

The Health Enhancement Communities will need to be able to conduct analytics activities that track the health and wellness of their populations across multiple interventions.

HECs will need to use an IT and data infrastructure that will both extract and receive data feeds from various sources, including clinical sources to which partners within an HEC may not have previously had access. These sources may include but are not limited to electronic medical/health records (EMRs/EHRs), and other health information technology (HIT) solutions, pertinent registries (i.e., federal and state registries), and administrative systems including financial and operations management systems. Moreover, they will need an infrastructure that can aggregate and validate these data and support multiple additional analytics-intensive functions. The functions may include, but are not limited to:

- Population health management, including at the individual, system, and regional levels
- Continuous evaluation of program and service effectiveness/value
- Evaluation of compliance with a wide variety of requirements specific to federal, state and local programs, laws, and regulations
- Data reporting, both pre-programmed and ad-hoc
- Analytics and reporting to support applications for private, state, and federal funding opportunities

A robust IT and data infrastructure can help an HEC achieve goals related to performance improvement. This infrastructure can assist HECs with the following:

- Tracking and reporting on quality measures

- Analyzing health indicators for the population
- Aggregating data from similar data sources, such as integrating EHR data from two separate providers
- Aggregating data from dissimilar data sources, for instance, synchronizing immunization data from a state registry with immunization data from an EHR for the same individual

Validation of data prior to import is key to any successful data initiative. If end users do not trust the data once it has left the system in which it is collected and has been imported into a centralized HEC system, there will be limited use of the data, and HEC leadership will have difficulty using the data to prove efficiency and reduce variation in outcomes. Therefore, the infrastructure itself should include tools to assist in data validation including transparent mapping tools and proactive identification of out-of-bounds data values.

6.1.2. Key Activities to Establish HEC IT and Data Infrastructure

To accelerate the process of developing an infrastructure that will best support the HECs, the Population Health Council recommends that the HEC Initiative leverage the Core Data Analytics Solution (CDAS) currently in development by OHS, with analytics resources at the University of Connecticut (UConn) Analytics and Information Management Solutions (AIMS) group. The team is focused on the design and development of advanced, innovative, person-centered analytics and information management solutions to support the accountability to promote healthier people, smarter spending, and health equity. The goal is to move away from current *retrospective* reaction to events and towards *prospective* analysis and management of events to improve outcomes. Hence, the team is providing a complete solution in CDAS where they work with stakeholders to understand their needs and work collaboratively towards innovations on how to transform, enrich, and enhance data to share information and insights that can guide decisions about community interventions.

6.1.3. CDAS Overview

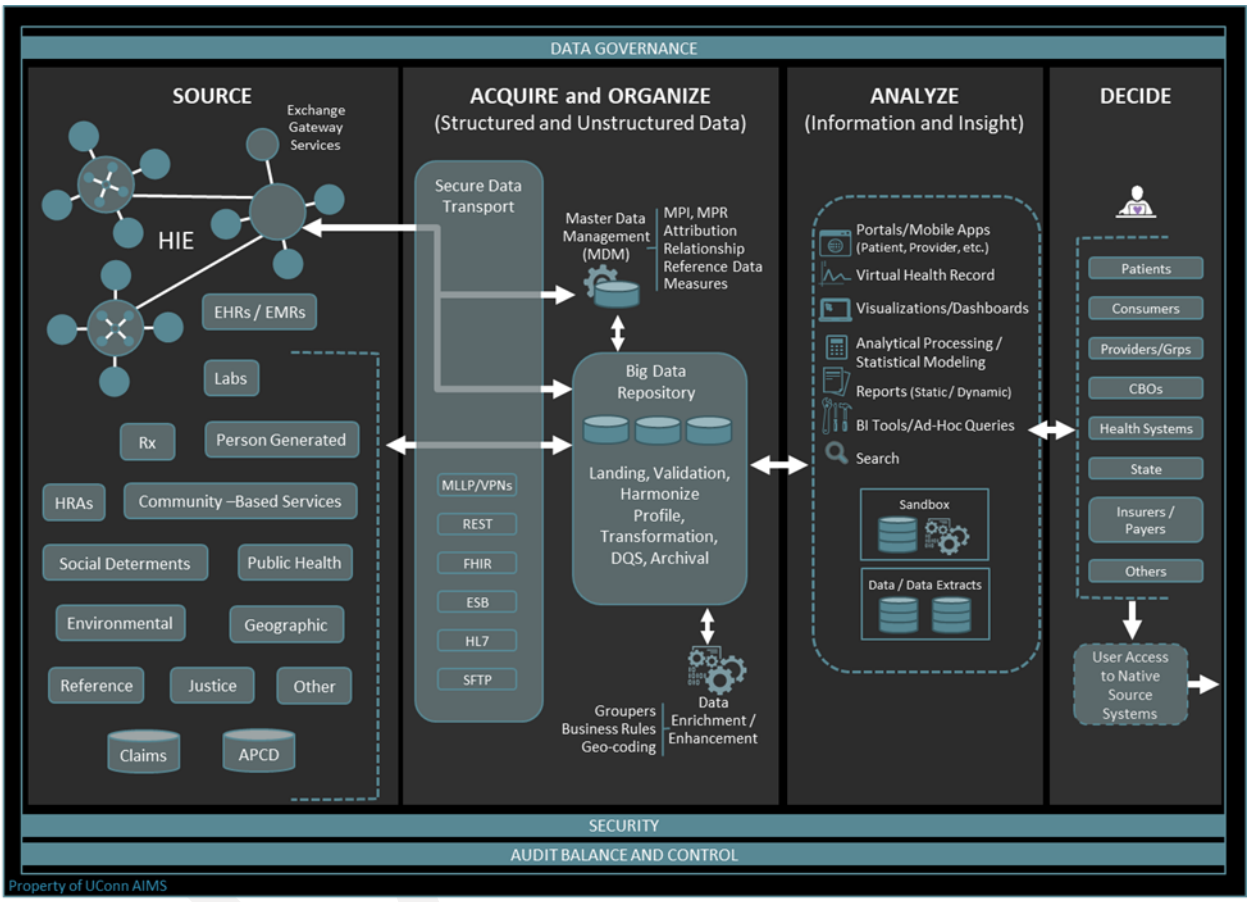
The goal of CDAS is to create an innovative, open architecture solution that will open the lines of communication across the state among multiple stakeholders, including community members, community-based organizations, health care and service providers, payers, and employers.

CDAS will acquire a sizable foundation of the state's health data, such as the All-Payers Claims Database (APCD), clinical data, medical and pharmacy claims data, and social determinants of health data. The data within the CDAS will be used to create advanced innovative analytics to provide information and insights to guide and support HEC interventions. CDAS will also provide information to people/community members that will enable them to make informed health decisions. It will provide information to stakeholders, like HECs, so that they can proactively monitor and manage programs, interventions, and outcomes. The advanced analytics will be important to quantify the potential return on investment in populations in support of value-based, multi-payer strategies.

CDAS is an innovative solution that is and will continue to leverage leading open source and commercial off the shelf (COTS) based technologies (such as Hadoop Big Data platform, Informatica MDM, and Tableau visualization/dashboards) implemented in a secure cloud-based environment in Microsoft Azure. The CDAS architecture is designed to expedite data capture, transformation, enhancement, and analytics in a secure HIPAA-compliant environment to enable information-based decisions (Figure 14).

The Big Data design provides the ability to capture unlimited data, which will enable programs to analyze the data as required. The design is an open architecture where the solution components are interfaced through open secure web-based services instead of traditional closed proprietary connections. This provides the flexibility to introduce and enhance the solution with new solution components to meet the needs of stakeholders, such as the ability to capture data at the point of service and use online survey tools.

Figure 14. Data Governance Architecture

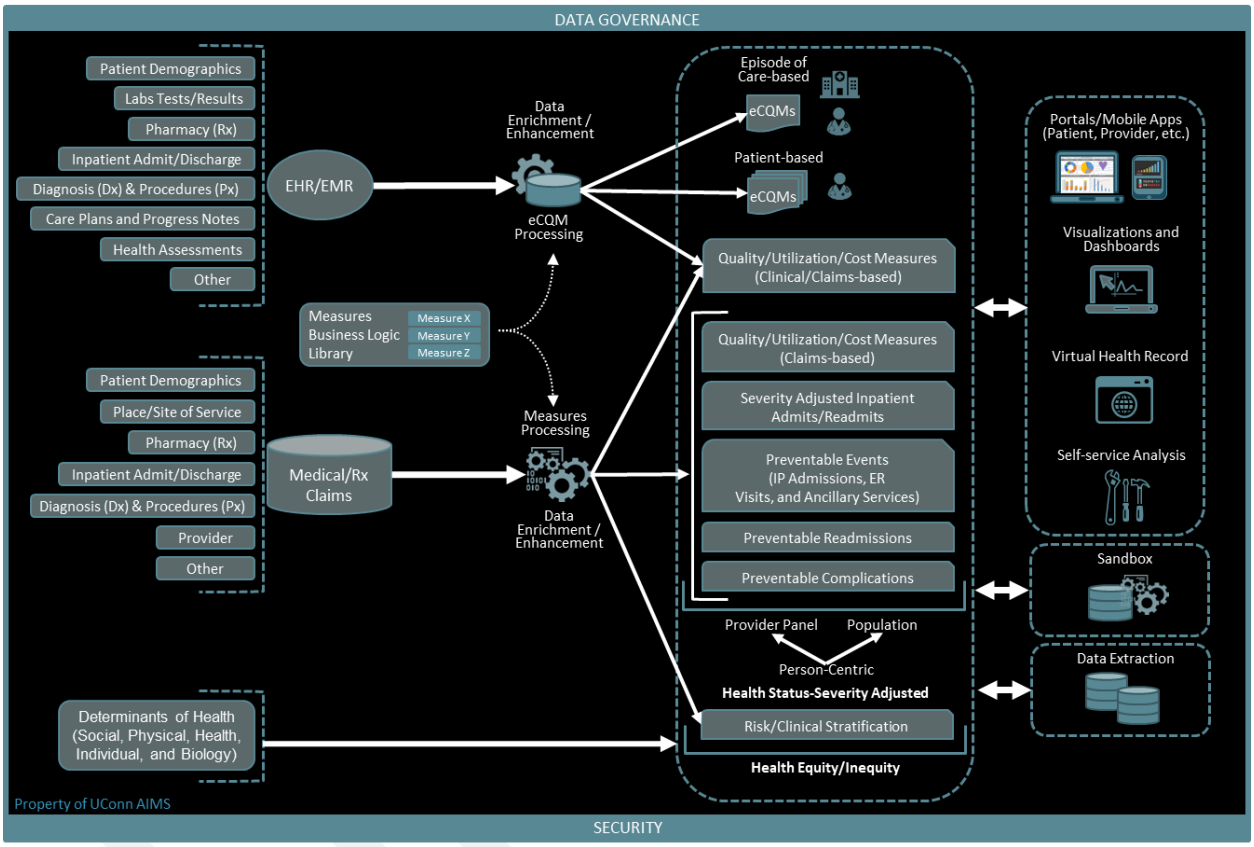


Source: UConn AIMS

Data Capture and Processing will focus on the acquisition of data from various source systems and the processing of the data to transform, harmonize, normalize, enhance, enrich, and organize prior to calculating various measures and Key Performance Indicators (KPIs). CDAS is designed to dynamically capture numerous measures' business logic, such as electronic clinical quality measures (eCQMs) and Healthcare Effectiveness Data and Information Set (HEDIS) measures. The data enhancement and enrichment will include person-centric stratification to determine current health and wellness status and provide progression trends as well as potentially preventable events. This enrichment will enhance the analysis of the measures and KPIs by providing visibility into a person's overall health and wellness status and progression trend, to understand the effectiveness of the HEC interventions not only from a performance measurement perspective but also to understand if the outcome combined with services are improving the health and wellness of that individual.

The CDAS Information Delivery will be in the form of various dynamic, filterable, and configurable visualizations and dashboards accessible through the CDAS web portal and mobile application frameworks. These dashboards will provide self-service capabilities to the stakeholders without having to have a detailed technical background. CDAS information delivery enables front-line stakeholders to have access to data, information, and insight to guide decisions when required.

Figure 15. CDAS Measures Process



Source: UConn AIMS

As shown in the CDAS Measures Process (Figure 15), data capture and processing will focus on the acquisition of data from various source systems and the processing of the data to transform, harmonize, normalize, enhance, enrich, and organize prior to calculating various measures and KPIs.

The provisional measures and interventions, as described in Sections 3 and 4 of this report, will be difficult for the HECs to achieve and sustain without accurate, timely and actionable information. CDAS will support HEC innovation by:

- Reducing the analytics burden and costs on individual HECs
- Being flexible and extendable to include data elements such as social determinants of health, family history, and medical and surgical history
- Accepting data formats from most sources (e.g., Excel, Access, dBASE) to accommodate most HEC entities, including those who do not currently have robust technologies

- Allowing for the segmentation of all its reports, metrics, and analytic tools by any number of markers or factors; an example would be the segmenting of prediabetes values by race, ethnicity or socio-economic factors

6.1.4. Recommendations Related to HEC IT and Data Infrastructure Development

6.1.4.1. Using CDAS to Support HEC Best Practices

The CDAS can include pre-built reports and analytic tools that can provide HECs with the ability to meet known reporting requirements such as the measures listed in Section 4. CDAS will allow for additional report creation to support specific needs of each HEC as well as ad-hoc analysis. Combined, these reports and analytics will support the HECs as they move to address the measures through targeted interventions in their communities.

Each HEC will be able to have their own "bucket" within CDAS. This will allow the HECs to not only do specific reporting on the recommended measures but also to do ad-hoc reporting. CDAS will allow users to filter, slice, and dice the data to look at trending as well as conduct comparative analysis on control groups. Such analysis will show which interventions are working and which are not. HECs will be able to use this data to inform adjustments needed in the interventions or to promote to other HECs how specific interventions worked in their community and better classify "best practices" to share throughout the state.

6.1.4.2. HEC User Requirements

Many HECs may identify staffing challenges as a key difficulty related to effective use of CDAS. Many HECs may only have one staff person who knows how to develop ad hoc reports in existing data aggregation platforms, and some do not have this capability at all. To support HECs, there will be a train-the-trainer approach as well as online training modules, a help desk, and a blog site to initiate users on the functionality and uses of CDAS.

While it may not be necessary to have a dedicated data analyst on staff for the HEC, this skill set is important and should not be ignored when preparing for the adoption of CDAS for HEC data use. Opportunities should be explored in terms of sharing "super user" resources across the HECs.

6.1.4.3. HEC Technology Requirements

To further support the recommendation of using CDAS for HECs is the reduced burden on HECs for the implementation and launch of CDAS. As described previously, CDAS is a cloud-based platform that will only require an internet connection to access the HEC CDAS assigned site. HEC users will be given a role-based username and password to access their community's site.

6.2. Workforce

6.2.1. HEC Administrative Workforce

As noted in Section 3, HECs must have a defined backbone organization that can perform or contract for the key functions required to operate an HEC. Included in these key functions is the role of HEC Director. The HEC Director will assume responsibility for the HEC and oversee operations and fundraising. Beyond the HEC Director, the HEC must identify resources to perform the following proposed administrative functions:

- Manage the governance structure

- Oversee and coordinate collaboration across HEC partners and programmatic staff implementing interventions and communications, including accounting of funds
- Ensure compliance with reporting requirements and appropriately train and manage staff and partners to collect and upload data
- Align existing interventions and infrastructures, and resources with HEC interventions
- Design and manage interventions
- Develop and manage a multidirectional communication plan

6.2.2. HEC Community Workforce

Central to the HEC Initiative is deploying a non-clinical workforce with the skills and knowledge to help support community action and address social determinants of health and health inequities. Evidence supporting many of the interventions included in the provisional lists in Appendix 4 and Appendix 5, relies on using non-clinical, entry-level jobs in the health and social services sector such as community organizers and Community Health Workers (CHWs).[128] Local collaboratives already realize the value of utilizing this type of community-based workforce. For example, Community Action Agencies in Connecticut deploy CHWs, funded by community services block grants, to identify safety needs and prevent falls in the elderly population.

A complementary SIM initiative, the CHW Advisory Committee, currently operates a website that includes a list of training resources as well as information about career advancement. It is in the process of creating a centralized CHW certification program for Connecticut. Once implemented, this certification process could provide a critical pipeline of sufficiently trained CHWs to staff the HECs statewide. CHWs will be key supports to ensuring effective clinical and social service integration and to assuring individuals have linkages to and follow up with key social support providers and services.

The number of CHWs and other non-clinical workers deployed will depend on interventions chosen by each HEC and the size of the attributed population. Some interventions may require oversight by an individual with a specific clinical licensure such as a community nurse.

6.2.3. Leveraging Existing Workforce Supply

Alignment of current resources is critical to building a sustainable, effective, and efficient program. An initial step in building the HEC infrastructure will require assessing and quantifying available workforce resources within the community for potential redeployment or alignment with the HEC activities. For example, if a policy-focused organization already serves the HEC community, the HEC may capitalize on that established infrastructure and subcontract with the organization to perform the function of coordinating policy interventions.

Forming a basis for the programmatic workforce, existing community collaboratives within the HEC may presently run interventions aligned with the HEC priority aims but disconnected from other HEC resources and partners. Aligning that workforce by creating data sharing policies and better coordination across the HEC could best leverage the work currently performed by this partner agency.

[128] Other examples of potential non-clinical workforce resources include Peer Support Specialists and Peer Recovery Specialists.

Additionally, through this improved coordination, HECs may avoid duplication of efforts or placing excess burdens on the community members. For example, one family may participate in multiple interventions that incorporate home visits. Through better alignment and coordination, the HEC could combine the activities of multiple home visits into one longer session, saving time and resources for both the workforce conducting the visits and the family receiving the visits.

6.2.4. New Hires and Illustrative Economic Impact

Following the assessment of available resources, an HEC will then require additional new hires to fulfill the remaining administrative and programmatic roles. The challenge for HECs will be to obtain enough near-term funding to hire new staff and ramp up operations. If done sufficiently, HECs will have the ability to make a significant impact on the prevention measures and earn sustained funding via the shared savings model.

Based on the division of HEC labor among administrative positions and intervention roles, most of the new hires will have intervention roles, creating entry-level, community-based jobs across Connecticut. These jobs could provide increased economic stability to HEC communities in need, and as CHWs generally represent the communities in which they serve, increased culturally relevant services, further addressing root causes of poor health outcomes.

ILLUSTRATIVE EXAMPLE

A hypothetical example of an HEC: The Greater Healthville HEC (GHHEC) is accountable for a geographic area with a population of 360,000 Connecticut residents. GHHEC includes community members, community groups, and community organizations and agencies who focus on child well-being and healthy weight/physical fitness. They designate a backbone organization and hire an Executive Director. The Executive Director hires four additional administrative staff, repurpose two staff as in-kind to support the GHHEC operations, and hires six community organizers to work with community groups. The Executive Director of GHHEC plays a key role in creating strong partnerships within the HEC, is responsible for identifying and obtaining funding to support interventions and collaborates with the state on statewide funding and shared savings initiatives. GHHEC also hires additional staff, including a contracts and data manager, a financial officer, and managers to oversee interventions.

In addition to connecting, improving, or expanding existing programs, GHHEC identifies critical gaps in child well-bring programs. GHHEC's community groups identify the need to implement several evidence-based interventions focused on child well-being. The first is a home visiting intervention called ***Minding the Baby***. GHHEC redeploys one pediatric community nurse and hires three more. They hire six social workers to conduct home visits starting from the third trimester of pregnancy through the child's second birthday. GHHEC also implements the ***Nurse Family Partnership*** and hires four additional community nurses and redeploys four Community Health Workers. GHHEC implements the ***Circle of Security Parenting*** (COS P) training and ***A New Lens*** workshop for all teachers in elementary schools in district with highest needs children. GHHEC trains six facilitators, three of which are new hires and three are redeployed staff, to conduct the trainings with parents, caregivers, and teachers. GHHEC creates a partnership of home visiting programs called the ***Starting Children Off Right*** program. The partnership includes the ***Healthy Homes*** program, which provides inspections and connections to remediation for a variety of home health toxins and hazards and a program on healthy feeding. CHWs are trained on

multiple interventions and build trust with families to implement multiple interventions that promote child well-being.

Community groups that are part of GHHEC identify two food deserts in their defined geographic area and advocates for policies to address barriers to accessing healthy, affordable foods. Other community groups identify two open spaces within the food deserts to create ***community and school gardens***. One of the community organizers they hire is a master gardener who implements and introduces gardening to children and coordinates and organizes volunteers to care for the garden. GHHEC expects that in year three, they will be able to support the position through a Community Supported Agriculture (CSA) strategy where residents will pre-purchase discounted annual memberships and receive weekly food boxes of healthy foods from the garden. The community organizers work with childcare, schools, community colleges, workplaces, and senior centers to introduce policies for ***healthy eating and increased opportunities for exercise.*** GHHEC also hires two personal trainers and six CHWs to create programming to encourage and develop ***physical activity regimens*** based on readiness and level of ability.

Based on the above example, GHHEC would need a total of 6 community organizers, 10 Community Health Workers, 8 community nurses, 6 social workers, 6 trained facilitators, and 2 personal trainers for a total of 38 programmatic staff. Of that total, 4 CHWs, 3 trained facilitators, and 1 community nurse are redeployed; all others are new hires.

Table 7. Hypothetical GHHEC Workforce

Potential Workforce	Administrative Roles	Programmatic Roles	Total
Existing Aligned or Redeployed	2	8	**10**
New Hires	4	30	**34**
Total	**6**	**38**	**44**

6.3. Opportunities for Leveraging Existing Assets

Connecticut contains a strong foundation of community groups and organizations, community collaboratives, state and local agencies, providers, and other stakeholders committed to improving population health and health equity. The HEC Initiative has built on and will continue to leverage these key assets.

6.3.1. Existing Community Collaboratives and the Reference Communities

Throughout the initial design process, a broad range of stakeholders were engaged to shape the design of the HEC model so that it can best meet the needs of the diverse and unique communities in Connecticut. As part of that process, the state selected four existing community collaboratives as "Reference Communities." The Reference Communities provided input on the HEC model and, through an iterative process, helped further refine the model presented in this report. (See Section 5 for detail).

Reference Communities and other existing collaboratives are essential building blocks of the recommended HEC model. Many collaboratives are currently serving communities across the state

through initiatives consistent with the HEC goals. The collaboratives include multiple sectors such as community members; health departments; health care providers; governmental agencies; and community, human, and social service providers. Based on a 2017 survey, current collaborative strategic priorities include the following:

- Addressing specific health issues
- General community health/well-being
- Decreasing health disparities
- Priority populations
- Cross-sector collaboration and relationship-building
- Data-sharing/data use
- Decreasing preventable readmissions
- Community health needs assessments

Critical to HECs continuing to leverage these strong community assets will be providing a vehicle for coordination. Many of the collaboratives in place today do not have the resources and capabilities to align related efforts in their communities for maximum impact; to collect and share data across agencies; to widely and comprehensively communicate findings and best practices; or to reliably sustain prevention efforts that are now supported by grant dollars. Through the HEC Initiative, collaboratives within communities will have the ability to better build off the strengths among HEC members.

6.3.2 Community Groups and Supporting Organizations

Community groups and organizations across Connecticut have been and should remain at the forefront of efforts to improve community health. A few examples are highlighted below:

- The Caring Families Coalition provides low- and moderate-income Connecticut families with the resources and organizational strength to effectively influence and change public health care. The United Connecticut Action for Neighborhoods (UCAN), provides support to the Caring Families Coalition and other community organizing groups to help them build powerful community organizations that can solve the problems and change the structures that affect their lives. They have developed over 20 community organizing groups and provided assistance and training to dozens more coalitions and community organizing groups.
- The Coalition for New Britain's Youth, a citywide collaborative committed to improving the lives of New Britain's youth (birth through age 24), organizes community members and partners to provide children and youth with the tools and resources they need to be successful in school, their careers, and life. Through a collaborative process across multiple strategy groups, they have analyzed data, developed a structure, and created detailed frameworks to drive their work forward. Drawing on this wealth of understanding and experience in their communities, HECs will rely on these established groups to identify and lead interventions in their communities.
- Norwalk ACTS, a partnership of over 100 civic leaders, educators, and organizations in the Norwalk region, works collectively to enrich and improve the lives and futures of all Norwalk's children from cradle to career, including through home visiting and early childhood health and

development initiatives. They focus on building partnership infrastructure and capacity, convening cross-sector community teams, and collecting and analyzing community-level data and turning it into information and insights that leads to evidence-based decision making. They bring together educators, parents, clergy, business leaders, investors, health providers, elected officials and residents who are committed to building a community infrastructure to support children cradle to career.

- The Middletown Working Cities Challenge is an initiative that includes 20 cross-sector organizations and aims to reduce the number of single parent families living at or below the federal poverty level from 35 to 20 percent over 10 years. They work to develop a better system to identify meaningful employment opportunities for single parents and provide them with the training and resources to obtain living wage, career-sustaining work. They have built partnerships with schools, neighborhoods, faith-based groups, and additional stakeholders to craft polices that are advantageous to low-income community members.

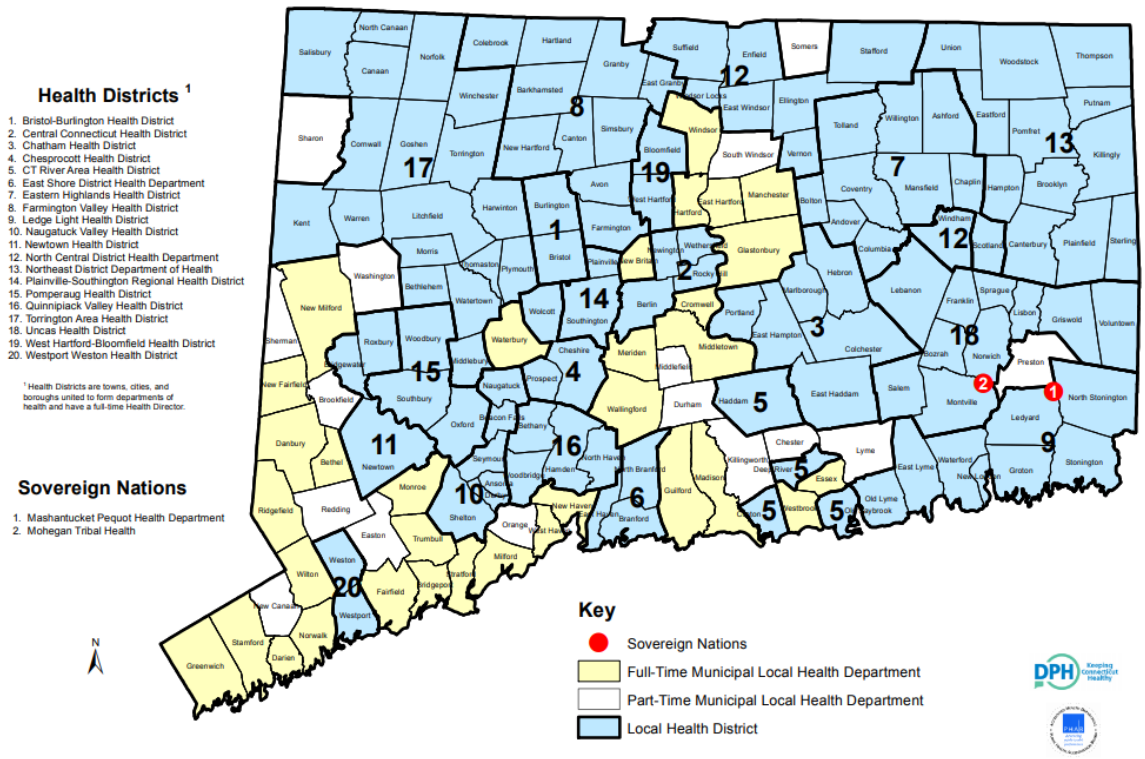
- The Stamford Vita Collaborative, a multi-payer initiative that comprises Stamford Hospital and the local public housing agency Charter Oak Communities, operates the Vita Health and Wellness District, a health-focused neighborhood in the historically impoverished west side of Stamford. Vita's more than 20-member organizations coordinate to implement strategies to address housing, health care, nutrition, education, jobs, and social cohesion.

6.3.3. Local and State Public Health and Development Infrastructure

6.3.3.1. Local Health Departments and Health Districts

Connecticut's local public health system is decentralized and contains 69 local health departments and health districts of varying size in terms of workforce, budget, and geographic service area. Of the total, 14 are part-time municipal local health departments. Each local health department employs a Director of Health to oversee operations. Health districts are managed by a board comprising at least one member from each of the towns represented. Although constrained by the resources available, these health departments and districts currently serve their local communities and routinely develop or participate in community health needs assessments. Based on this work, they provide keen insight into gaps in services, health inequities, and overall need. HECs are expected to include health districts and/or departments and leverage these assets. HECs must also align with the local needs and disparities outlined in Community Health Assessments and Community Health Improvement Plans.

Figure 16. State of Connecticut Local Health Departments and Districts, January 2018



6.3.3.2. Connecticut Department of Public Health

At the state level, the Department of Public Health (DPH) plays an essential role in prevention and would therefore play a critical leadership role within the State Partnership. DPH collects and analyzes a variety of health-related data and operates several offices and prevention programs overlapping the priority goals of the HEC Initiative. Table 7 includes activities and data collection with the most potential to be leveraged.

Table 8. Connecticut Department of Public Health Leveraging Opportunities

DPH Operation	Description of Operation and Potential to Leverage
Connecticut Diabetes Surveillance System (CDSS) and Connecticut Heart Disease and Stroke Surveillance System (CHDSS)	The CDSS and the CHDSS provide timely and relevant information related to their respective conditions. HECs can leverage data presented by the CDSS and the CHDSS in annual reports to better understand needs and disparities within their populations.
Office of Vital Records	The Office of Vital Records maintains a statewide registry of births, marriages, civil unions, deaths and fetal deaths which have occurred in Connecticut or to Connecticut residents. CDAS should also incorporate this data to monitor births and maternal characteristics and causes of death.

DPH Operation	Description of Operation and Potential to Leverage
Nutrition, Physical Activity, and Obesity (NPAO) Prevention Program	The NPAO is composed of initiatives and grant-funded programs to address the priority area of healthy weight and physical fitness. HECs can leverage the knowledge and resources already gathered at the community and state levels and ensure new efforts are consistent and complementary.
Office of Health Equity	The Office of Health Equity works to ensure that health equity is a cross-cutting principle in all agency programs, data collection, and planning efforts. At the state level, HECs must coordinate with the Office of Health Equity to ensure efforts best address inequities across the state.
Connecticut Health Improvement Coalition	The Connecticut Health Improvement Coalition is a partnership of local, regional, and statewide agencies and organizations working toward the development and implementation of the Connecticut State Health Assessment (SHA) and the Connecticut State Health Improvement Plan (SHIP). At the state level, HECs must coordinate to ensure alignment with the goals of the SHIP and leverage the infrastructure and community coordination already in place under this coalition.

6.3.3.3. Office of Health Strategy

The Office of Health Strategy (OHS), through the SIM Program (discussed in 6.3.3) and other initiatives, uses comprehensive, data-driven strategies to improve quality and reduce costs of health care in Connecticut for all residents. As one of its responsibilities, OHS maintains an acute care hospital inpatient discharge database, has access to ChimeData emergency department database, and fills requests for health data. HECs can access this data to monitor hospital utilization related to the priority areas and the database may be incorporated into CDAS.

6.3.3.4. Department of Social Services (DSS)

As Connecticut's multi-faceted health and human services agency serving about one million residents of all ages in all 169 Connecticut towns, DSS delivers and funds a wide range of programs and services that are intended to support the well-being and economic security of Connecticut citizens. Among these are the Supplemental Nutrition Assistance Program (SNAP), SNAP-Ed, and Medicaid and the Children's Health Insurance Programs, collectively known as HUSKY Health. In Connecticut, SNAP provides access to food for over 400,000 residents as well as an associated nutrition education program. The goals of the SNAP-Ed program align with the healthy weight and physical fitness priority aim. These include:

- Increasing healthy food choices among population groups who are receiving or eligible to receive SNAP benefits.
- Increasing physical activity among population groups who are receiving or eligible to receive SNAP benefits.

- Supporting comprehensive, multi-level interventions, community and public health policy, and systems and environmental changes to facilitate healthy food and physical activity choices among population groups who are receiving or eligible to receive SNAP benefits.

HECs must build on the knowledge and resources of their local SNAP-Ed partners and leverage their experience to implement interventions best matched to their communities.

HUSKY Health provides health care coverage to over 800,000 Connecticut residents including pregnant women and low-income adults, children, and families. HUSKY Health covers a broad array of preventative medical, behavioral health, and dental services—arguably, the most comprehensive in the country. HUSKY Health utilizes Intensive Care Management to support members with complex presenting health conditions and has also developed many tools and strategies to engage with members about self-management of health, particularly focusing on obesity and tobacco cessation.[129] Further, DSS is a member of the national "My Healthy Weight" steering committee and has demonstrated that its programs embody many features of best practice around obesity prevention. DSS can be a valuable partner in developing potential funding strategies for HECs, including shared prevention savings or other reinvestment solutions. Further, integrating HUSKY Health claims into the APCD and ultimately CDAS will provide HECs with key utilization and diagnostic data for many in their target populations.

6.3.3.5. Additional State Agencies

There are multiple state agencies whose expertise and purview will be critical to the success of HECs. These agencies provide services that directly or indirectly impact the root causes of HEC health priorities and by leveraging existing state capabilities and efforts, HECs will be better positioned to accomplish their goals. These agencies include but are not limited to:

- Department of Children and Families
- Department of Mental Health and Addiction Services
- Office of Early Childhood
- Connecticut Insurance Department
- Office of the State Comptroller
- Department of Education
- Department of Housing
- Department of Corrections
- Department of Developmental Services
- Department of Rehabilitation Services, State Unit on Aging

One example of a relevant initiative currently championed by these state agencies is the Circle of Security intervention. According to the Department of Children and Families, in Connecticut, there are approximately 1,500 trained facilitators in this evidence-based program, which includes trainings focused on early interventions to increase attachment and security. Connecticut is also part of the Multi-

[129] See http://huskyhealthct.org/members/health-wellness.html#. Accessed 10/22/2018.

System Trauma Informed Collaborative (MSTIC) initiative to improve outcomes for children exposed to trauma and is receiving training and technical assistance to develop a strategic plan. This initiative includes 10 state agencies working collectively to screen children and provide training and workforce development.

Another example is the Bridgeport Baby Bundle program. The Connecticut Department of Social Services, the Office of Early Childhood, the Department of Children and Families, the State Department of Education, and other early childhood organizations, including Bridgeport Prospers, are working to improve health and outcomes for young children in at-risk families and partnering to design and implement new strategies. Currently, these strategies, outlined in the Bridgeport Baby Bundle, include pre- and post-birth depressions screenings for moms, regular developmental screenings for children, and whole-family services such as universal home visits during the first three years of a child's life.

Additionally, the Child Health and Development Institute, Office of Early Childhood, Department of Children and Families, Yale University, and multiple community-based partners comprise an early childhood trauma collaborative. The mission of the collaborative is to improve outcomes for Connecticut's trauma-exposed young children defined as birth to age 6. The HEC Initiative will work closely with these existing efforts and collaboratives and work to enhance, align, and build on the work currently underway.

6.3.3.6. School-Based Health Centers (SBHCs)

In 2018, there are 93 state-funded SBHC sites in 26 communities including sites located in elementary, middle, and high schools and in urban, suburban, and rural communities. Forty-five thousand students are enrolled in the SBHCs, and nearly 131,000 visits are provided annually. In Connecticut, the vast majority of SBHCs provide an interdisciplinary model of co-located medical and behavioral health services, with services provided by licensed medical and behavioral health clinicians. SBHCs provide mental health therapy in school for trauma, family violence, depression, anxiety, school phobia, grief/loss, substance use, and more. For many students, the SBHC serves as their usual source of care for reasons such as barrier-free access, availability of appointments on a same-day basis, convenience for families that can remain at work while the student receives care during the school day, no need for transportation to appointments, and a level of comfort and safety for students within their school environment. SBHCs also work closely with school nurses and administrators to identify students chronically absent or at risk for chronic absence.

6.3.3.7. Yale-Griffin Prevention Research Center (PRC)

Part of the Yale University School of Public Health and based in New Haven, CT, the Yale-Griffin PRC represents an academic/community partnership committed to research pertaining to the prevention of chronic disease. One objective of the Griffin-Yale PRC is to provide tailored interventions for the underserved and address health disparities by contributing to improved allocations of community resources. The Yale-Griffin PRC works with community partners to develop, implement, and evaluate community-based approaches and shares their approaches and findings in a national database along with those of the 25 other CDC PRCs. The Yale-Griffin PRC has developed several programs, which are free to use, targeting healthy weight and physical fitness objectives in the youth and adult populations. One example is the ABC for Fitness program which trains teachers to integrate brief bouts of activity in elementary school classrooms without taking away valuable instruction time. The Yale-Griffin PRC works with community partners to develop, implement, and evaluate these community-based approaches and

has access to vast knowledge about evidence-based approaches and research findings. This Connecticut-based resource is a natural partner to HECs and the HEC Initiative and can provide existing or develop new evidence about what works to prevent overweight and obesity. HECs could leverage this local knowledge and use the Yale-Griffin PRC program guides and the PRC national database to inform intervention design within their communities.

6.3.3.8. Rudd Center for Food Policy & Obesity at the University of Connecticut

The Rudd Center for Food Policy & Obesity at the University of Connecticut is a distinguished multi-disciplinary policy research center dedicated to promoting solutions to childhood obesity, poor diet, and weight bias through research and policy. It conducts research to inform advocacy and policy; supports evidence-based solutions; and promotes accountability for the food environment. It has multiple collaborators. For example, it works with two food banks (Connecticut Food Bank and Foodshare) to promote better nutrition in the charitable food system and with the North Hartford Triple Aim Collaborative to explore zoning strategies related to healthy weight issues as well as ways to address nutrition policies in early childhood education centers and in schools in Hartford to improve healthy weight for minors.

6.3.4. SIM Program

The Connecticut SIM program is a strategic effort, concurrently leveraging multiple interventions, to achieve five related goals:

1. Improve population health
2. Improve health care outcomes
3. Promote health equity
4. Empower consumers
5. Reduce health care costs

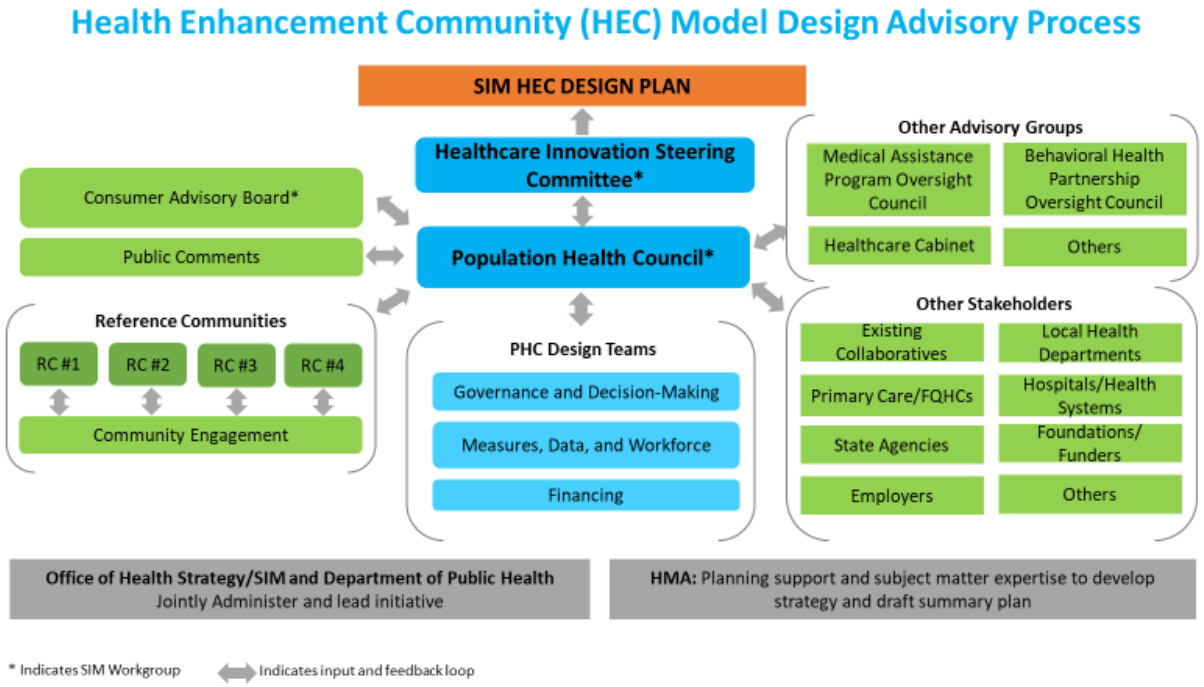
The SIM interventions intersect and build on one another to create a comprehensive plan for achieving these aims.

The SIM program components described below represent those most complementary and influential to the HEC design. A more detailed list of SIM initiatives is included in Appendix 6.

6.3.4.1. Advisory Bodies

Advisory bodies, comprising state and local leadership, consumers, providers, and other stakeholders, play an integral role in the HEC Initiative by bringing in a multiplicity of insight and knowledge to the HEC design. Figure 17 below illustrates the HEC Advisory Process. Primary contributors to the HEC design have been the Healthcare Innovation Steering Committee, the Population Health Council, the Consumer Advisory Board, and the Community Health Worker (CHW) Advisory Committee.

Figure 17. Multidirectional Flow of Information and Stakeholder Input to Support Decision-Making



Healthcare Innovation Steering Committee (HISC)

The HISC is a diverse, multi-stakeholder committee comprising providers, consumers, advocates, health plans, and state agencies. The HISC has provided feedback throughout the HEC design process. The HISC provides oversight and guidance to the SIM program and will ultimately recommend the final HEC design.

Population Health Council (PHC)

The PHC's vision for improving population health in the context of payment, insurance, and practice reforms and community integration and innovation directed the development of this report. The PHC specifically focused on addressing root causes of disease and defining priorities based on burden of cost, reducing inequities, and improving overall health. The PHC assisted in, and continues to drive, the developing design of HECs, including participating in design groups focused on key aspects of an HEC (i.e., interventions, measures, data, workforce, financing, and governance/decision-making). The PHC issued this report and its recommendations on the HEC design.

Consumer Advisory Board (CAB)

The mission of this workgroup is to "advocate for consumers and provide for strong public and consumer input in health care reform policies in Connecticut." Predating the HEC Initiative design process, the CAB held listening sessions engaging various population groups about their specific needs. This work influenced the initial proposed design elements. For example, in the young adult listening session, some individuals present admitted to being survivors of childhood sexual trauma and others talked about bullying; many expressed a fear of reaching out for help. These are both examples of ACEs

that can significantly influence an individual's health long-term without the proper interventions. These examples support the choice of child well-being as a key priority aim for the HEC Initiative.

The CAB has and will continue to provide valuable findings and suggested actions related to barriers to improving community health to be targeted by this work. To date, barriers identified by the CAB include lack of transportation; social isolation; behavioral health challenges; and lack of patient/provider communication, care coordination, and early screenings. The CAB also provided input on community engagement that will be needed when HECs form and operate. For example, they highlighted the importance of having a process that meaningfully captures input of community members and ensures that input helps shape HECs, and that community members hear how their input shaped the design.

Community Health Worker (CHW) Advisory Committee

In July of 2018, the CHW Advisory Committee published a draft report to the legislature on CHW certification.[130] The report details recommendations for requirements for certification and renewal of certification of CHWs, a process not yet in place in Connecticut. CHWs will be key supports in delivering interventions at the HEC level, and the CHW certification process could provide a needed pipeline of qualified workers.

6.3.4.2. Initiatives

In addition to the advisory bodies, the HEC Initiative design process emphasizes collaborating with and learning from other SIM program initiatives, most notably the Prevention Services Initiative and the Person-Centered Medical Home Plus (PCMH+) program. OHS, DPH, and HMA have also been coordinating with the planning process for Primary Care Modernization, which also places a strong emphasis on prevention and which could be part of a state Medicare multi-payer demonstration.

Prevention Services Initiative (PSI)

The PSI was designed to accelerate the adoption of effective prevention services offered by community organizations (CBOs); increase the capacity of CBOs to deliver prevention services; improve provider performance on quality measures related to asthma, diabetes, hypertension, and associated ED utilization or admissions/readmissions; and ultimately enable ACOs to succeed in shared savings programs and other alternative payment models. This initiative lays a critical foundation for community-based prevention and builds capacity and connections among important HEC participants.

Primary Care Modernization (PCM)

Efforts to engage payers and providers to share in a new primary care delivery and payment model are integral to health transformation at the clinical level. The work of PCM includes developing a new model for primary care in Connecticut that supports providers in expanding care teams and offers new ways for patients to access care outside of a traditional office visit, all supported by a more flexible payment model. The PCM model also emphasizes team roles that connect patients to the services and support they need in community settings, which will be supported through both the PSI and HEC initiatives.

[130] Report to the Legislature on Community Health Worker Certification: A Report of the State Innovation Model Community Health Worker Advisory Committee DRAFT. (2018). SIM CHW Initiative. https://portal.ct.gov/-/media/OHS/SIM/CHW-Advisory-Committee/CHW_Legislative_Report_2018_Draft10.pdf?la=en. Accessed 8/14/2018.

Medicaid's Person-Centered Medical Home Plus (PCMH+)

PCMH+ amplifies the important work of the Connecticut Medicaid PCMH initiative. Currently, 122 practices (affiliated with 548 sites and 2,065 providers) are participating in the PCMH program, serving over 417,780 members (52 percent of Medicaid members), creating strong roots for PCMH+. PCMH+ is building on current efforts by migrating care coordination to a more local level through entities that have the experience and trust basis to effectively serve their communities. PCMH+ incorporates new requirements related to care coordination, focusing upon integration of behavioral and physical health care, children with special health care needs, health equity, and competency in care for individuals with disabilities. PCMH+ is emphasizing linkages to the types of community supports that can assist members in utilizing their Medicaid benefits. If a PCMH+ Participating Entity meets specified quality standards and generates savings for Medicaid, that entity will receive a shared savings payment. It is likely that HECs will include PCMH+ Participating Entities and will involve the development of systems to connect the advanced systems of clinical care supported by the PCMH+ program with the HECs' community-based services that address preventing poor health.

6.4. Current Policy and Regulatory Environment

6.4.1. Value-Based Payments and Value-Based Insurance Design

HECs are an innovative and distinctly community-oriented aspect of Connecticut's broader reform strategy and will build on the state's commitment to using legislative and regulatory authority to support health care delivery and payment reform.

As described more fully in Section 7, the shift away from a volume-based payment system toward value-based payment (VBP), which is designed to reward providers for delivering higher-quality care at lower cost, is already underway in Connecticut. This is the case across both public payers (Medicaid and Medicare) and private purchasers. There are 14 entities currently participating in Connecticut's Medicaid shared savings program; 11 Medicare ACOs (10 Medicare Shared Savings Program [MSSP] ACOs and 1 Next Generation ACO) are based in Connecticut, and an additional 4 ACOs are based in neighboring states but are permitted to serve Connecticut beneficiaries. There are also approximately 15 entities participating in Connecticut shared savings arrangements with commercial payers.

The design of the HEC payment model must align with, but not duplicate, the savings strategies that are already in place in Connecticut. The goal of this alignment is to create consistency with respect to the incentives that influence provider and consumer behavior and the prevention goals.

Connecticut also currently utilizes value-based insurance design (VBID), an insurance strategy that seeks to improve health and control rising health care costs by promoting the use of high-value services and providers through consumer incentives. The Connecticut SIM Program Management Office, now part of the Office of Health Strategy (OHS), in partnership with the Connecticut Office of the State Comptroller (OSC), launched an ambitious initiative to expand VBID plan offerings across the state. VBID initiatives often emphasize prevention-oriented activities among participants such as getting recommended prevention screenings, complying with guidelines to manage chronic conditions, or avoiding behaviors that could lead to poor health (e.g., tobacco use). Given the significant emphasis on prevention and health behavior, the goal is to align the opportunities available through VBID designs with the programmatic goals of the HEC Initiative.

Additional information on VBP and VBID and alignment with the HEC payment model design is included in Section 7.

6.4.2. Community Health Worker Certification

As previously noted, OHS recently published for public comment a report and recommendations of the CHW Advisory Committee for establishing CHW Certification in Connecticut. The recommendations include a balance of requirements ensuring that certification signifies a sufficiently trained worker (e.g., 90 hours of training and a 50-hour internship) and placing limitations on barriers (e.g., creating a pathway both for workers already in the field and individuals interested in starting the career path). The final report was submitted to the Connecticut State Legislature in October 2018. If the legislature proceeds to establish CHW certification, this could improve the pipeline of qualified workers for the HEC workforce. Additionally, the draft recommendations for certification do not require that CHWs work under clinical oversight, making them an appropriate workforce for implementing the HEC programmatic interventions within the community. Authorizing legislation may be introduced as early as January 2019.

7. HEC FINANCING

A central requirement of the HEC program design is creating a financing framework that supports the development of HECs while also creating a long-term sustainability model that aligns with public and private value-based payment (VBP) and value-based insurance design (VBID) initiatives. The HEC Initiative holds the promise of unlocking "upstream" value by incentivizing and rewarding communities for preventing poor health instead of more traditional accountable health care models that typically reward improving health care and reducing avoidable utilization of health care services after someone has a health condition.

The Population Health Council recommends that the HECs will be accountable for achieving two health priority aims: 1) improving child well-being pre-birth to age 8 years and 2) increasing healthy weight and physical fitness among all Connecticut residents. Because they are focused on preventing poor health, these efforts will require a longer time horizon to affect change. As stated, success also will require a collaborative, cross-sector approach that spans beyond the health care system (i.e., providers and payers) to include other sectors that address the root causes of poor health or benefit from addressing them.

This chapter articulates a pathway for creating an HEC financing model, both in the near term (the first five years of implementation) and in the long term (beyond five years). The near-term financing options will serve as a bridge to long-term financial sustainability options that will primarily although not exclusively rely upon collaboration with purchasers such as Medicare, Medicaid, and the state employee health plan administered by the Office of the State Comptroller (OSC). This chapter describes the following:

- **Existing Value-Based Models:** This section identifies and reviews the range of existing value-based health care models, with an emphasis on existing initiatives in Connecticut as well as design elements from other states that promote prevention and multi-sector, community-based interventions. This section is intended to provide context and inform the subsequent details of the HEC financing framework.
- **HEC Financing Model:** This section identifies and recommends near-term financing options to provide HECs with upfront development and infrastructure funding as well as long-term resources to support, sustain, and evaluate HEC cross-sector interventions and related state-level activities. This section also describes a method for attributing a geographic population to an HEC as well as the methods by which funding will be distributed to and among HEC participating partners, with an emphasis on being flexible to meet the requirements of potential funders.
- **Savings and Benefits:** This section estimates some of the potential savings and benefits resulting from HEC efforts. Because Medicare, administered by the Centers for Medicare & Medicaid Services (CMS), is a critical potential long-term HEC financing partner, this section includes a significant focus on the Medicare opportunity. Other purchasers may also be HEC financing partners. A summary of the short- and long-term benefits of HEC efforts, which may accrue to multiple sectors, is also included.

7.1. Existing Value-Based Models

The development of an HEC financing framework can benefit from the experience and lessons learned of existing value-based models already being implemented within the health care system in Connecticut and in other states. The following section identifies and reviews the range of existing value-based models, with a focus on existing initiatives in Connecticut. It also identifies potential adaptations of these models that have been embedded within the HEC framework to promote investments in prevention.

7.1.1. Value-Based Payment (VBP) Models in Connecticut

Provider and payer entities in Connecticut are already implementing value-based payment (VBP) models. VBP models are different from traditional health care reimbursement models, which historically have paid providers on a fee-for-service basis. In contrast, VBP rewards providing higher-quality care at lower cost. This shift is already underway in Connecticut and across the U.S. in response to pressures from both purchasers (i.e., public payers and employers) and consumers who are directly affected (e.g., wage stagnation, out-of-pocket costs) by the rising cost of health care. Health care in the U.S. is nearly twice as expensive as in any other country; however, the U.S. falls short on many measures of quality, access, and population health.[131] In VBP models, health care payment is based on measurable quality and cost efficiency goals intended to create incentives for providers to improve value. The most widely adopted VBP model in Connecticut is the shared savings program model. Many providers began participating in shared savings arrangements in 2012. Today, OHS estimates that more than 85 percent of Connecticut's primary care physicians participate in these arrangements. Aligning current shared savings arrangements with new HEC prevention-oriented shared savings models will be critical to ensure that both models consistently incentivize and reward primary prevention.

7.1.1.1. Medicare Shared Savings Program (MSSP)

Fourteen organizations with attributed populations in Connecticut currently participate in the Medicare Shared Savings Program (MSSP).[132] MSSP was introduced in 2012 as a key component of CMS's reform initiatives to facilitate coordination, improve the quality of care, and reduce unnecessary costs for Medicare beneficiaries. Participating organizations are called Accountable Care Organizations (ACOs). Ten MSSP ACOs are based in Connecticut, and an additional four ACOs are based in neighboring states but are permitted to serve Connecticut beneficiaries. One additional provider organization is enrolled in a more advanced version of the ACO model known as Next Generation. MSSP has shown progress nationwide. In 2016, 56 percent of MSSP ACOs saved relative to their benchmarks, and 31 percent of the ACOs received a shared savings bonus.[133] ACO quality performance remained high with an average

[131] Papanicolas, I., Woski, L., Jha, A.K. (2018). Health Care Spending in the United States and Other High-Income Countries. Journal of American Medical Association. *JAMA,319*(10):1024-1039. doi:10.1001/jama.2018.1150

[132] Performance Year 2017 Medicare Shared Savings Program Accountable Care Organizations. (2017). *Centers for Medicare and Medicaid Services*. https://data.cms.gov/Special-Programs-Initiatives-Medicare-Shared-Savin/Performance-Year-2018-Medicare-Shared-Savings-Prog/uwht-mr3h/data. Accessed 8/10/18.

[133] Saunders, M., Muhlestein, D., and McClellan, M. (2017). Medicare Accountable Care Organization Results For 2016 Seeing Improvement, Transformation Takes Time. *Health Affairs Blog*. doi: 10.1377/hblog20171120.211043

composite quality score of 93.4 percent.[134] Medicare has signaled its intent to continue to operate this program but will have a greater emphasis on downside risk and cost savings.[135]

VBP TERMINOLOGY

Shared Savings Program: Traditional shared savings programs are a form of a Value-Based Payment (VBP) that incents networks of providers to manage health care spending and improve quality for a defined patient population by sharing with those organizations a portion of the net savings resulting from their efforts. Savings are typically calculated as the difference between actual and expected expenditures and are then shared between the payer and providers. Shared savings programs typically require providers to meet defined targets with respect to quality metrics to qualify for shared savings. Shared savings programs are commonly structured as "upside-only risk arrangements," in which providers only stand to earn more revenue than they would in the absence of the program. In contrast, shared savings programs with "downside risk arrangements" are structured such that a provider could potentially earn less revenue than they would in the absence of the program. The upside potential is higher than in a traditional shared savings (upside-only) risk arrangement.

Accountable Care Organization (ACO): A healthcare provider-led organization or network designed to manage the full continuum of care and be responsible for the overall costs and quality of care for a defined population. ACOs exist in many forms, including large integrated delivery systems, physician-hospital organizations, primary care groups, multi-specialty practice groups, independent practice associations, and virtual interdependent networks of physician practices. In this report, the term "ACO" is used to refer to provider networks or entities that enter into shared savings arrangement(s) with payer(s). In this use, the term is synonymous with the term "advanced networks" as employed elsewhere in SIM.

7.1.1.2. Medicaid PCMH+ Shared Savings Program

The Department of Social Services (DSS), Connecticut's single state Medicaid agency, used SIM funding and state resources to establish an upside-only shared savings initiative entitled PCMH+. DSS' goal with PCMH+ is to build upon its existing, successful Person-Centered Medical Home (PCMH) and Intensive Care Management (ICM) initiatives to further improve health and satisfaction outcomes for individuals currently being served by FQHCs and Advanced Networks (e.g., ACOs), both of which have historically provided a significant amount of primary care to Medicaid members. There are 14 entities currently participating in Connecticut's Medicaid shared savings program.[136] The program, which began in 2017 with nine Participating Entities (including FQHCs and Advanced Networks) and added five Participating Entities in 2018, is in process of producing quality and shared savings results for its first wave and will report on the same in November 2018.

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[134] *Ibid*

[135] Verma. S. (2018). Pathways To Success: A New Start For Medicare's Accountable Care Organizations. *Health Affairs Blog*. Doi: 10.1377/hblog20180809.12285

[136] Formerly named the Medicaid Quality Improvement and Shared Savings Program. Connecticut Department of Social Services. Person-Centered Medical Home Plus (PCMH+) Documents/Forms. https://portal.ct.gov/DSS/Health-And-Home-Care/PCMH-Plus/Documents. Accessed 8/10/18.

7.1.1.3. Commercial Shared Savings Programs

There are also approximately 15 entities participating in Connecticut shared savings arrangements with commercial payers. Commercial payers operating in Connecticut offer a range of VBP arrangements to network providers as described in Table 9.

Table 9. Value-based Payment (VBP) Arrangements among Commercial Payers in Connecticut

Health Plan	Commercial Market Share[137]	VBP Model
Aetna	14.4%	Aetna implemented shared savings arrangements with physician networks across Connecticut and offers Aetna Whole Health, a statewide enhanced accountable care product. The enhanced accountable program features care coordination, care management, data and quality measurement, and tiered out-of-pocket costs for members who see preferred providers. Nationally, Aetna has 40 percent of its expenditures tied to VBP models with a goal of 75 percent by 2020.[138]
Anthem	49%	Anthem operates an Enhanced Personal Health Care program for primary care providers, including a shared savings model with upside risk and monthly care coordination payments. It also utilizes episodic and bundled payments and enhanced analytics to address chronic and extended specialty episodes of care. Anthem currently has shared savings arrangements with physician networks across Connecticut.[139]
Cigna	17.7%	Cigna's VBP program, called Cigna Collaborative Care, rewards medical groups for meeting quality targets and reducing costs. Ten large physician groups participate in this program in Connecticut.[140]
ConnectiCare	7.5%	ConnectiCare operates a number of shared savings arrangements with primary care networks and offers an episodic and bundled payment program with an existing partnership with Saint Francis Hospital. ConnectiCare owns Care Management Solutions, which administers one of the largest value-based insurance design programs in the country.

[137] State Innovation Model Operational Plan. (2016). *State of Connecticut*. http://www.healthreform.ct.gov/ohri/lib/ohri/sim/test_grant_documents/sim_operational_plan_08012016_final.pdf. Accessed 8/10/18.
[138] Jaspen, B. (2017). UnitedHealth, Aetna, Anthem Near 50% Value-Based Care Spending. *Forbes*. https://www.forbes.com/sites/brucejapsen/2017/02/02/unitedhealth-aetna-anthem-near-50-value-based-care-spending/. Accessed 8/10/18.
[139] Enhanced Personal Health Care Program – Connecticut. (2014). *Patient Centered Primary Care Collaborative*. https://www.pcpcc.org/initiative/enhanced-personal-health-care-program-connecticut. Accessed 8/14/18.
[140] Cigna Collaborative Care. https://www.cigna.com/newsroom/knowledge-center/aco/. Accessed 8/14/18.

Health Plan	Commercial Market Share[137]	VBP Model
United Healthcare	7.7%	United Healthcare offers a variety of VBP models, including a shared savings model for primary care networks; care management fees for patient-centered medical homes; and ACO programs with upside risk and potential bonuses for exceeding medical cost and quality targets. ProHealth currently partners with United Healthcare on a product serving 11,000 Connecticut residents, including an integrated product for Medicare Advantage beneficiaries and an incentive-based program for individuals with employer-sponsored plans.[141]

7.1.2. Value-Based Insurance Design (VBID) Models in Connecticut

Another mechanism for promoting value in health care is referred to as value-based insurance design (VBID), an insurance strategy that aligns a patient's out-of-pocket spending with the clinical value of care that they are using. It seeks to improve health and control rising health care costs by promoting the use of high-value services and providers through consumer incentives. High-value services are defined as those that have a strong evidence-base, enhance clinical outcomes, and increase efficiency. Connecticut has led the nation in VBID. In 2002, Pitney Bowes, a Stamford-based corporation, became the first company in the U.S. to fully implement a VBID initiative.[142] The company sets the amount of beneficiary cost-sharing for a medical service or treatment according to the value of the intervention rather than its cost. In 2011, the State of Connecticut implemented the Health Enhancement Program (HEP), a VBID plan offered to state employees and their dependents. The program has improved the use of preventive care services and reduced the use of expensive emergency and specialty care among its approximately 64,000 continuously enrolled participants.[143]

The Connecticut SIM Program Management Office, now part of the Office of Health Strategy (OHS), in partnership with the Connecticut Office of the State Comptroller (OSC), launched an ambitious initiative to expand VBID plan offerings across the state. The aim of the initiative is to significantly increase uptake of VBID among Connecticut employers by 2020. In guidance to employers, OHS and OSC recommend that VBID incentives are based on employee participation in, or compliance with, recommended services such as biometric, cancer, and mental health-risk screenings and assessments; use of evidence-based prescription drugs to treat chronic conditions such as heart disease, hypertension, and asthma; and use of smoking cessation drugs for individuals seeking to quit. These incentives can be accomplished through changes in consumer copayments, changes in premium rates, bonus payments, and contributions to Health Reimbursement Accounts, among others. Other recommended VBID incentives include waived or reduced copayment or coinsurance for visits to high-value providers such as providers

[141] ProHealth Physicians and UnitedHealthcare Collaborate to Improve Patient Care in Connecticut. (2014). *UnitedHealth Group*. https://www.unitedhealthgroup.com/newsroom/2014/1211prohealthconnecticut.html . Accessed 8/14/18.

[142] Mahoney JJ. Reducing patient drug acquisition costs can lower diabetes health claims. Am J Manag Care. 2005;11(5 suppl):S170-S176.

[143] Hirth, R., et al. (2016). Connecticut's Value Based Insurance Plan Increased the Use of Targeted Services and Medication Adherence. *Health Affairs, 35*(4), 1-11. doi: 10.1377/hlthaff.2015.1371

participating in quality-based performance contracts or providers that have a demonstrated record of lower readmissions or lower mortality in the case of cardiac surgery.

Unlike many existing VBP models, VBID initiatives often place a greater emphasis on prevention-oriented activities and services. VBID programs also have the benefit of direct financial incentives that target consumer behavior. Savings tied to reduced utilization of high-cost health care services accrue to purchasers and the consumers who pay co-insurance, both in the short-term and in the long-term (for self-funded employers with high employee retention rates).

Employers are not limited to VBID as a means to drive healthy behavior among employees. Many Connecticut employers provide direct incentives outside of the insurance benefit to create opportunities for or reward healthy behavior. Both VBID and direct-to-employee incentives are tools that employers can use to align with HEC goals.

7.1.3. Value Based Models in Other States: Examples of Prevention-Focused Initiatives

While no state has adopted a model exactly like the HEC Initiative, there are programs being implemented in other parts of the country where VBP models have been designed to address social health drivers, promote prevention, and/or enhance community collaboration. These design elements can be a source of ideas for inclusion in the HEC Initiative. These programs and efforts are summarized in Table 10 below.

Table 10. Model Design Elements Used in Other States

State	Key Design Element(s)
Minnesota Integrated Health Partnerships	Reward methodology focuses on health equity and health disparities; incorporates social and clinical factors in risk-adjustment; collects population-level data on social health drivers.
Massachusetts MassHealth ACO Program	Program design includes requirements for ACOs to contract with designated behavioral health and long-term services and supports (LTSS) community partner organizations; includes risk-adjustment/cost benchmarks based on social determinants of health.
Vermont All Payer Programs	Program recognizes community collaboratives including non-medical providers and designates an interface with ACOs
New York State Delivery System Reform Incentive Payment (DSRIP) Program	DSRIP program requires Performing Provider Systems (PPSs) to engage and include community-based organizations in VBP arrangements and address social determinants of health.
Oregon Coordinated Care Organizations (CCOs)	There is an expectation of local organizations to manage global budgets and reinvest profits into community health.

State	Key Design Element(s)
Maryland All-Payer Model	Includes a voluntary Care Redesign Model, which creates incentives for hospitals to engage in projects with community partners to achieve defined goals. CMMI and Maryland are discussing how to quantify actual Medicare savings from population health efforts, and how to ensure that savings can be leveraged to support those efforts.

7.1.4. Promoting Prevention Investments through a Value-Based Model

A central objective of the HEC Initiative is to secure financial investments in prevention. The section below describes key features of the HEC model that build on the experiences and lessons from other value-based models.

7.1.4.1. Create Long-Term Financial Benchmarks that Reward Prevention

Existing VBP models generally do not emphasize rewarding activities that can prevent the occurrence or the progression of disease or a condition. For example, most shared savings programs are premised on encouraging appropriate health care utilization and improved management of existing conditions over a short time horizon. MSSP, for example, rebases ACO spending benchmarks after only three years.[144] As a consequence, successful ACOs are graded against their continually improving benchmarks. The intent of this rebasing is to drive down the trajectory of health care spending by reducing expenditures for patients with health conditions; however, any "credit" an ACO might accumulate for investing in long-term prevention interventions among its attributed population is effectively "zeroed out" through the rebasing calculation. Moreover, the program is designed such that ACOs have more opportunities to earn savings if the population they are accountable for has many health problems. There is little or no savings opportunity for patients who are well.

In addition, although Medicare Advantage is not VBP program, this increasingly popular Medicare managed care program also provides incentives to reduce the cost of care for patients with health problems. However, the premiums that the federal government pays to Medicare Advantage plans are rebased annually, so Medicare Advantage plans receive more funding if their members have more health conditions, or more severe health conditions. They receive much lower premiums for healthy adults.

7.1.4.2. Ensure Cross-Sector Community Organizations have Access to HEC Funding

As noted above, other states have required that new accountable entities include both community-based providers and organizations (CBOs). Although programs differ, New York, for example, requires many of its accountable entities to contract with CBOs as part of an effort to specifically recognize CBOs' unique position to address social determinants of health as a contributor to poor health outcomes. Connecticut's HEC Initiative will require cross-sector partners, including CBOs, and have HEC governance structures that reflect that cross-sector partnership. The HECs also will leverage the work of the SIM

[144] Medicare Shared Savings Program: Shared Savings and Losses Assignment Methodology. (2018). *Centers for Medicare & Medicaid Services.* https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/Shared-Savings-Losses-Assignment-Spec-V6.pdf. Accessed 8/10/18.

Prevention Services Initiative, which is helping CBOs develop mutually-beneficial financial agreements with ACOs in which CBOs receive funding for the value of the community-based services they provide.

7.1.4.3. Ensure Prevention Goals are Rewarded Financially

Existing VBP models include quality-based incentives that are generally tied to the diagnosis and management of disease and reducing acute episodes of care. Preventive care *processes* (e.g., colonoscopy screening) are rewarded; however, the savings associated with prevention *outcomes (*i.e., a reduction in the prevalence colon cancer) are not credited to the provider. Screening and assessment measures as well as measures of hospitalization and emergency department utilization are common. With respect to specific conditions such as diabetes, these models include quality incentives for individuals who have already been diagnosed with a disease (e.g., controlling blood glucose levels among people with diabetes). They do *not* include quality incentives for reducing incidence or prevalence of diabetes. The HEC Initiative will put prevention at the core of quality-based financial incentives and give HECs the opportunity to demonstrate success over a longer time horizon.

7.1.4.4. Ensure the Health Care System Collaborates with HECs

As part of developing policy levers to support HEC success (See Section 8 for detail), Connecticut will explore how to encourage existing organizations in the health care system such as ACOs, payers, and health care providers to be part of HECs and have formalized relationships with HECs to support their success and sustainability.

7.2. HEC Financing Model

A central objective of the HEC Initiative is to provide a sustainable pathway to monetize prevention savings and continuously reinvest a portion of the savings in evidence-based or evidence-informed interventions that will improve child well-being pre-birth to age 8 years and increase healthy weight and physical fitness among all Connecticut residents.

To achieve these ambitious goals, HECs will require a mix of near-term, upfront financing in the first five years of implementation as well as sustainable long-term sources of financing beyond five years. It is anticipated that the near-term financing options will serve as a bridge to longer-term sustainability options, which will primarily but not exclusively rely upon ongoing collaboration with health care purchasers such as Medicare, Medicaid, state employee health plans administered by OSC. The following sections describe these funding sources, their likelihood of being leveraged, and how they can address near-term versus long-term needs.

7.2.1. Near-Term Financing

While it is a primary goal and expectation of HECs to generate and reinvest savings to support ongoing activities, it is expected that these savings will take at least five years to begin to accrue and for a portion to be returned to HECs. As such, new shared savings arrangements are not a viable source of financing for HECs in the near-term. Yet upfront investment is needed to launch and develop HECs, implement interventions, and support the infrastructure required to administer and manage HECs. As savings are captured over time, it is likely that the financing model for HECs will evolve, with certain financing options becoming more likely and others being supplemented or even supplanted by reinvested savings.

7.2.1.1. Near-Term Funding Sources

A variety of financing options exist to fund HEC activities, each with unique attributes surrounding purpose, magnitude, timing, accessibility, and risk. The range of approaches can be grouped into:

- Debt
- Grants
- Tax credits
- Outcomes-based financing models
- Hybrid models that pool or re-orient existing funding sources
- Public payer financing waivers

Each option comes with specific parameters around who can access it, what it can pay for, and at what scale. To effectively attract and employ available financing options, resources must align with an HEC's specific needs and overall strategy.

Below is a summary of selected financing options, including a description of and considerations for each. While these do not represent the full universe of approaches, they are illustrative of those more commonly employed in outcomes-oriented projects and those most feasible to finance HECs, given current assumptions around interventions and scale. Following this overview is a proposed working model for how these options can work together to finance HEC activities.[145]

Debt

Debt refers to money lent by one entity to another, with the expectation that the borrower will repay the lender, most likely with interest, over time.

Foundation Program-Related Investments (PRIs)

Program-related investments are private foundation investments made to fulfill the foundation's philanthropic strategies. While the primary purpose of PRIs is not financial, they can generate a financial return. PRIs are typically loans that range from $1,000 to several million dollars, generate a below-market rate return (1-4 percent), and have repayment terms between 5-10 years. They may also come in the form of loan guarantees. Unlike market rate investments (such as mission-related investments[146]), PRIs count toward charitable distribution requirements and may come from a foundation's grant budget or its endowment. While the market for PRIs has grown in recent years—with 11 percent of foundations

[145] For additional discussion, see: Nichols, L. and Taylor, L. (2018) Social Determinants As Public Goods: A New Approach to Financing Key Investments in Communities. *Health Affairs*. https://doi.org/10.1377/hlthaff.2018.0039

[146] Mission-Related Investments (MRIs) are private foundation investments—typically debt/fixed income products or equity investments—intended to accomplish charitable purposes and generate a risk-adjusted market-rate financial return. MRIs are made from a foundation's corpus and do not count toward charitable distribution requirements. As an example, in 2015, the California Health Care Foundation made a $375,000 equity investment in Seamless Medical Systems, a software provider, to help community health centers improve patient experience. Because investors expect a market-rate financial return, MRIs are unlikely to be a viable initial financing option for emerging HECs. See: CHCF Invests in Seamless Medical Systems. (n.d.) *California Health Care Foundation*. https://www.chcf.org/press-release/chcf-invests-in-seamless-medical-systems/ Accessed 9/13/18.

engaged in PRIs as of 2011—broad access is still limited by the number of foundations offering this type of funding.[147] Challenges to accessing PRIs also include service provider and foundation capacity to support these transactions, and the need for investments to align with a foundation's mission and programs, which frequently limits the geography and programmatic focus of the PRI.

As an example of a PRI, in 2008, The MacArthur Foundation offered $4 million in short-term acquisition financing to the Network for Oregon Affordable Housing (NOAH), enabling NOAH to preserve affordable rental housing units in Oregon and The MacArthur Foundation to advance goals of its housing program.[148]

Community Development Financial Institutions (CDFIs)

Community Development Financial Institutions (CDFIs) are private financial intermediaries certified by the U.S. Department of Treasury and dedicated to delivering financial services to underserved, low-to-moderate income populations and/or markets. To comply with federal regulations, CDFIs must demonstrate they are servicing these markets, and most meet this by making investments in a CDFI-qualified census tract that fulfills at least one of six criteria such as low-to-moderate income (defined as at or below 80 percent median family income), high unemployment rate, or high poverty rate. CDFIs include banks, loan funds, and credit unions, and, as such, the financial products offered and target markets may vary significantly by institution. Investments can also take on various structures (not only limited to debt) and range in size from small-business loans to multi-million-dollar facility loans. In general, financing from CDFIs tends to be more flexible than financing from commercial banks.

Commercial Banks

Commercial banks include regulated local and national financial institutions. To combat discriminatory redlining policies, the Community Reinvestment Act (CRA) was enacted in 1977 and requires that commercial banks serve the financing and financial service needs of the communities where they operate, including historically underserved low-to-moderate income communities. Banks have many different options to comply with the CRA, including making loans directly to non-profits or to intermediaries, such as CDFIs, that are located or lending in low-to-moderate income communities. Typically, debt from commercial banks comes in the form of large, collateral-backed loans.

Hospital Investment

Some hospitals have developed treasury or investment programs that connect their overall investment portfolio with community health activities. The number of hospitals currently investing in this way is limited and the path to accessing investment funds from them may be long. Hospital investments vary in size, structure, and purpose, aligned with a hospital's strategy or mission. For example, Dignity Health—the fifth-largest health system in the country—has a Community Investment Program (CIP) that provides financing for housing and community development to improve the social determinants of health.

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[147] Lawrence, S., and Mukai, R. (2011). Key Facts on Mission Investing. *Foundation Center*. http://foundationcenter.issuelab.org/resources/13579/13579.pdf. Accessed 8/14/18.

[148] The rate of return and specific terms for this transaction are not public. See: Network for Oregon Affordable Housing. (n.d.) *MacArthur Foundation*. https://www.macfound.org/grantees/1309/. Accessed 8/14/18.

Through the CIP, Dignity makes loans to non-profit organizations ranging in value from $50,000 to $5 million with terms of 1-7 years and below-market interest rates.[149]

Loan Funds

Loan funds are mechanisms for pooling debt capital from one or multiple sources to make loans to several entities or projects. The structure of a loan fund can vary significantly by size, lender characteristics, borrower characteristics, and governance structure.

Grants

Grants are funds gifted to one entity by another. While the funds do not need to be repaid, they may be subject to use or time restrictions.

Philanthropy

Philanthropic grants, including from foundations, corporations, or high-net worth individuals or families, provide funding of a specific amount on a one-time or short-term basis to non-profit organizations. Philanthropic grants range in size and may be structured as either unrestricted, allowing grantees flexibility to determine how funds are used, or restricted, ensuring funds are used for a specified purpose or over a designated time period. Among foundations and corporations, restricted funding tends to be the common approach. While grants often provide one-time funding, grant-makers can also structure funding to span multiple years or may renew grants regularly over time. Foundations, corporations, and individuals have varied grantmaking strategies and as such, philanthropy has been used to fund a wide range of activities and issue areas.

Hospital Community Benefit Funds

A federal requirement established by the Affordable Care Act, hospital community benefit mandates non-profit hospitals to invest in the local community by providing community benefits directly or allocating funding toward community needs. To comply with the Affordable Care Act, hospitals must initiate a Community Health Needs Assessment (CHNA) every three years and create a strategy for addressing community needs. There are a variety of ways hospitals can address needs identified through the CHNA and research has found that tax-exempt hospitals across the country spend approximately 7.5 percent of total revenues on community benefits.[150] In 2014, 94 percent of Connecticut hospital community benefit spending went to cover Medicaid and Medicare shortfalls and uncompensated care; only 6 percent of this spending went to community health improvement services, research, donations, and community-building.[151] On average, community benefit grants range from $10,000 to $100,000, and are designed to support services that result in measurable outcomes in the hospital's local community.

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[149] Increasing Capital for Underserved Communities. (n.d.). *Dignity Health*. https://www.dignityhealth.org/about-us/community-health/increasing-capital-for-underserved-communities. Accessed 8/14/18.

[150] James, J. (2016). Nonprofit Hospitals' Community Benefit Requirements. *Health Affairs*. doi: 10.1377/hpb20160225.954803

[151] Transforming Hospital Community Benefit: Increasing Community Engagement and Health Equity Investment in Connecticut. (2017). *Community Catalyst*. https://www.communitycatalyst.org/resources/publications/document/Community-Benefit-in-CT_Final.pdf . Accessed 8/14/18.

Recently, hospitals have also used their community benefit mandate to explore potential "win-win" partnerships that both serve community needs and contribute to their bottom-line. For example, through the Transitional Care Respite Program in Spokane, Washington, Providence Health provides hospital community benefit funding to Catholic Charities Spokane to pay for temporary food, beds, and care management for homeless individuals discharged from the hospital. Ultimately, this grant may also contribute toward savings for Providence by reducing avoidable hospital readmissions.[152]

Tax Credits

Tax credit programs incentivize private equity investments by allowing investors to deduct money from their tax liability owed to the government.

New Market Tax Credits (NMTC)

Managed by the U.S. Department of Treasury through the Internal Revenue Service and the CDFI Fund, the New Markets Tax Credit (NMTC) program helps economically-distressed communities attract private

CASE EXAMPLE: VITA HEALTH AND WELLNESS DISTRICT

The West Side of Stamford, Connecticut, is a historically impoverished neighborhood that has suffered from economic disinvestment, blight, and high rates of crime. These conditions and other factors contributed to poor health outcomes for residents, including high rates of chronic disease. In 2011, two major institutions in the neighborhood, Stamford Hospital and the local public housing agency Charter Oak Communities (COC), took advantage of their partnership, cemented in a 2009 land swap, to launch the Stamford Vita Collaborative. This multi-partner initiative developed a strategic revitalization plan and established the Vita Health and Wellness District, a health-focused neighborhood of approximately 500 acres centered on a mile-long stretch of the Stillwater Avenue commercial corridor in the West Side. Vita's more than 20 member organizations are implementing 6 sets of strategies. The primary strategies address housing and health care, represented by the redevelopment of COC's public housing and the expansion of Stamford Hospital's campus. Additional programs and services, such as the communal Fairgate Farm and the Parents as Co-Educators program, address the areas of nutrition, education, jobs, and social cohesion.

The hospital and COC contribute funds to the Stamford Vita Collaborative's administration, including salaries for program administration, grant writing, public communications, and community engagement. Stamford Hospital contributes approximately $50,000 annually to the project plus an in-kind contribution of staff time for program management, data analysis, and professional support. COC contributes approximately $150,000 annually, most of which is spent on Fairgate Farm and its full-time farm manager.

Excerpted from "Stamford Hospital Anchors the Vita Health and Wellness District," U.S. Department of Housing and Urban Development, Office of Policy Development and Research (PD&R), Available at: https://www.huduser.gov/portal/casestudies/study-041618.html

[152] Housing is a Health Innovation: Transitional Respite Care Program in Spokane. (2017). *Partnership for Healthy Outcomes*. http://www.chcs.org/media/Respite-Program-Case-Study_101217.pdf. Date accessed 8/14/18.

capital. The CDFI Fund allocates credits to Community Development Entities (CDEs) that attract equity investments with the credits and then lends these funds to NMTC-qualified projects. NMTC are primarily used for real estate projects, including new building or major renovations. Projects must be located in NMTC-qualified census tracts and typically must identify funding for 75 percent of the project cost elsewhere. These transactions are complex and require at least one-to-two years of lead time to plan and structure. Due to significant transaction costs, NMTC is only suitable for transactions over $5 million. Managing NMTC funds requires the capacity to adhere to reporting requirements over a seven-year compliance period.

Since 2000, the CDFI Fund has authorized $54 billion of tax credit authority to attract over $90 million to low-income communities and create over one million jobs.[153,154] As an example of an NMTC transaction, in 2018, CHRIS 180, a child-trauma care and training organization in Atlanta, received a $13 million allocation from two CDEs to construct a 20,000-square-foot training center, renovate a new medical clinic, and add five emergency housing facilities.[155]

Low-Income Housing Tax Credit (LIHTC)

The Low-Income Housing Tax Credit (LIHTC) program, a federal program established in 1986, attracts private capital to develop affordable rental housing for low-income households. Like NMTC, LIHTC incentivizes investment by providing tax credits to investors annually for 10 years. The federal government disperses approximately $8 billion of tax credit authority to state and local agencies each year. These agencies award tax credits to real estate developers via a competitive process run by state housing finance authorities. Often, it takes several applications for a developer to be awarded tax credits and requires significant time and expertise. Eligible projects must be affordable to families earning less than 60 percent of the area median income and must remain affordable for a minimum of 15 years. Financing can only be used to construct or rehabilitate housing and not to fund supportive services. Since the program's inception, LIHTC has financed over 46,550 projects, comprising more than three million rental units—approximately 90 percent of the country's new affordable units.[156]

Outcomes-Based Models

Outcomes-based financing models are new and evolving approaches that align investments around outcomes and may reward or penalize service providers based on outcomes demonstrated.

Outcomes Rate Cards

Outcomes rate cards are a contracting tool designed to standardize outcomes-based payments and make participation in outcomes-based contracts accessible to more service providers. Outcomes rate cards, initiated by a government entity, list a menu of outcomes sought by government payers and set a

[153] https://www.cdfifund.gov/news-events/Pages/news.aspx?Category=Press+Releases&. Date accessed 8/14/18.
[154] Economic Impact Report (2003-2015). (2017). New Markets Tax Credit Coalition. http://nmtccoalition.org/economic-impact-report/. Date accessed 8/14/18.
[155] PCDC's First Financing in Georgia to Help Expand Primary Care for Children. (2018). Primary Care Development Corporation. https://www.pcdc.org/pcdcs-first-financing-georgia-help-expand-primary-care-children/. Date accessed 8/14/2018.
[156] Low-Income Housing Tax Credits. (2018). *Office of Policy Development and Research (PD&R), U.S. Department of Housing and Urban Development*. https://www.huduser.gov/portal/datasets/lihtc.html#publications. Date accessed 8/14/18.

price for each outcome, with contractors paid that set price based on the outcomes they achieve. Outcomes rate cards require that service providers demonstrate outcomes, but not necessarily a causal link between the outcomes achieved and the intervention provided. As such, outcomes rate cards do not require advanced impact evaluation. Because of these simpler evaluation standards—and the non-requirement of third-party private investors within these transactions—implementing an outcomes rate cards approach may be a more feasible option for smaller-scale projects than Pay-For-Success approaches, which require achievement of measurable outcomes.[157]

While outcomes rate cards are a new concept, Connecticut is a pioneer of this approach. In early 2018, the Maternal, Infant, and Early Childhood Home Visiting (MIECHV) program, run by the Connecticut Office of Early Childhood (OEC), began an outcomes rate card pilot to incorporate outcomes-based bonus payments into existing MIECHV service provider contracts. Bonus rates are offered to service providers for achieving outcomes related to full-term birth, child health and safety, caregiver employment, and family employment.[158]

Hybrid Models

The hybrid models described below leverage existing sources of funding in new ways to pay for services. Through these types of models, HECs can leverage existing funding sources to bring coordination and efficiency to community-based services (e.g., public schools, Head Start, and the Women, Infants, and Children nutrition program).

Braided Funding

Braided funding coordinates funds from various public and/or private sources and allocates them towards services, with specific tracking and accountability for each source. Braiding thus enables a pooled fund for various services, while still assuring there is no duplicate funding of expenses and that each funding source is charged for appropriate administrative costs. To be able to implement this strategy, service providers need strong capacity on their frontlines and in their back offices to be able to track funding and report to each source.

As an example of a braided funding strategy in Connecticut, the United Way 211 Child Development Infoline (CDI) is a service that is supported through funding from the Department of Public Health's Title V Children and Youth with Special Health Care Needs program, the Office of Early Childhood's Birth to Three Part C Early Intervention and Help Me Grow programs, and through Preschool Special Education funds from the Connecticut Department of Education. CDI serves as the single point of entry for all the programs, maintains an inventory of developmental services and support programs for children birth to

[157] Pay-For-Success (PFS) is a contracting approach that ties payment for service delivery to the achievement of measurable outcomes. Social Impact Bonds (SIBs) are a financing approach to PFS contracting. In a typical PFS/SIB transaction, private investors provide upfront capital to service providers. If service providers achieve target outcomes, and those outcomes can be confirmed by an outside evaluator, the investors get repaid, typically by a government payer. If outcomes are not achieved, investors risk not being repaid. The PFS/SIB approach is dependent on a demonstrated measurable return on investment, and requires significant time, expertise, and funding to structure, implement, and evaluate. Therefore, PFS/SIB transactions are only realistic for larger projects (over $5 million) As a result, it is unlikely to be a viable initial financing option for emerging HECs but could become an option after outcomes and savings are demonstrated.

[158] Maternal, Infant, and Early Childhood Home Visiting Outcomes Rate Card Pilot. (n.d.). Connecticut Office of Early Childhood. http://www.ct.gov/oec/lib/oec/ct_oec_miechv_rate_card_fact_sheet.pdf. Date accessed 8/14/18.

age 8, links families to services and provides developmental information, manages the online Ages and Stages developmental monitoring system, and—with parental permission—reports back to pediatric providers about service linkages made for their patients.

Blended Funding

Blended funding refers to the merging of funds from various sources into one pooled funding stream and allocated toward services, without discerning the original source. For service providers, this mechanism provides a flexible, results-driven funding stream. Blended funds can come from multiple sources, including both public and private contracts and grants. Unlike braided funding, blending of funds means that costs are not necessarily allocated or tracked by individual source. Blended funding requires government involvement and support.

The Performance Partnership Pilots for Disconnected Youth (P3) is an example of a national program that allows grantees to blend discretionary funds from the Departments of Education, Housing and Urban Development, Justice, and Health and Human Services. Blended funding creates flexibility for grantees to test comprehensive, outcomes-based strategies to achieve improvements in educational, employment, and other key outcomes for disconnected youth.[159]

Wellness Trust

Wellness trusts, also referred to as Community Health Funds, are mechanisms that aggregate and house funds to support community-based population health or prevention activities. Typically, a backbone or integrator organization coordinates funding, which can come from one or multiple sources such as tax revenue, settlement funds, and philanthropy. Wellness Trusts distribute funding to community-based organizations or interventions, as governed by a policy, coordinating/steering committee, or board.

Wellness trusts are a relatively new concept, with many across the country currently in a pilot or exploratory phase. In one recent example, the Massachusetts Department of Public Health administered the Prevention and Wellness Trust Fund from 2012-2016, funded by a one-time $60 million assessment on insurance and hospital revenue. The fund provided grants to nine community-based prevention initiatives focused on pediatric asthma, hypertension, tobacco use, and elder falls.

Public Payer Financing Waivers

One important potential mechanism to leverage federal funds to support HECs is a multi-payer model agreement with CMS, which is described more fully in Section 8 and would focus on leveraging resources from Medicare and Medicaid. States have also leveraged federal funding from Medicaid to support upfront investments in delivery system reform efforts. Medicaid Delivery System Reform Incentive Payment (DSRIP) programs have been used as a financing tool and have provided states with infrastructure-building funding to support large-scale transformation efforts. In both cases, the programs involve federal government payers. Access to resources are conditioned on state commitments to control health care spending, quantify and monitor savings that accrue to Medicare and Medicaid, and demonstrate other outcomes for Medicare and Medicaid beneficiaries.

In addition, there are other potential avenues to explore for federal funding to buttress investments from the private sector. The Centers for Disease Control and Prevention (CDC) provides significant

[159] P3 Sheet. (n.d.). *youth.gov*. https://youth.gov/youth-topics/reconnecting-youth/performance-partnership-pilots/fact-sheet. Date accessed 8/14/18.

resources for prevention and public health initiatives. The Health Resources and Services Administration (HRSA) is also involved in a wide range of public health and health workforce initiatives that could support HECs.

7.2.1.2. Near-Term Finance Model

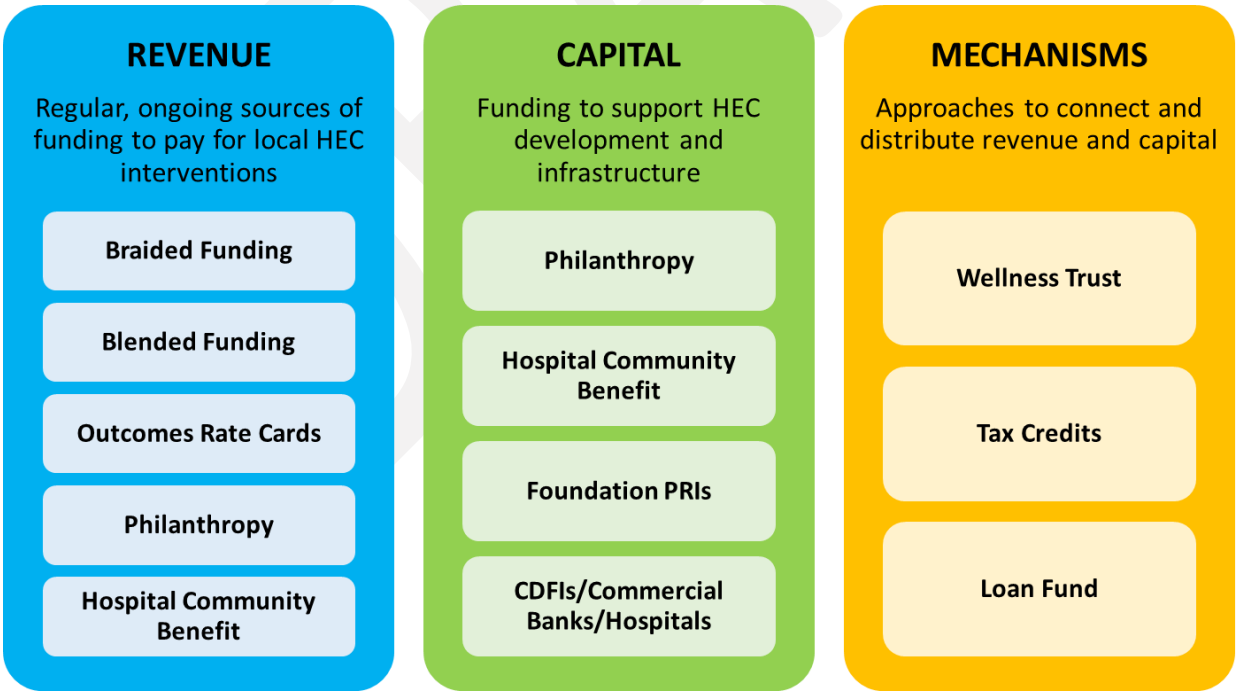
The finance options above represent potential opportunities to finance upfront HEC investments, activities, and program launch. No single option, however, offers the magnitude, breadth, or flexibility to fully support HECs on its own. Rather, it is the interplay among these options within the context of the local HEC landscape—for example, the specific interventions chosen or the availability of each finance option locally—that forms the basis of a working model to finance HECs across the state.

Although specific activities will vary, each HEC requires financing to support a locally-agreed upon set of new interventions. Managing HEC interventions, however, also requires local infrastructure to support operations, financial management, data management, and other administrative functions. Infrastructure is also required at the state level to provide oversight and collective support to the group of HECs statewide.

A comprehensive financing approach for HECs must consider funding options for both interventions and infrastructure (at the local and state levels). The options described above can further be grouped into revenue sources (to pay for interventions) and capital sources (for infrastructure needs) as well as mechanisms to connect and distribute both revenue and capital.

HEC Revenue, Capital, and Mechanisms

Figure 18. HEC Revenue, Capital, and Mechanisms



Revenue

Revenue refers to regular, ongoing funds to support the provision of services. Revenue is sometimes referred to as “buy” dollars, as it represents an entity funding or “buying” an identified service. Within

the HEC structure, revenue is essential to cover the day-to-day operating expenses of specific interventions, including staff, consultants, space, supplies, and other costs.

Capital

Distinct from revenue, capital refers to periodic funding to support overall enterprise-level investments and operations. Capital is sometime referred to as "build" dollars, as it enables an enterprise to "build" its infrastructure. Within the HEC structure, capital is essential to pay for both state- and local-level infrastructure needs. Rather than paying for specific services, capital supports overall operations and enables HECs to invest in management and administrative needs and manage cash flow.

Mechanisms

In addition to revenue and capital, HECs may also rely on mechanisms—wellness trusts, tax credit programs, and loan funds—to incentivize, aggregate, or distribute financing sources. These mechanisms are not directly revenue or capital but may be necessary to attract and align various sources.

The following section dives deeper into a proposed initial model to finance HEC interventions and infrastructure, tying together options for revenue, capital, and mechanisms. All feasible options (given current assumptions) have been included, though HECs will likely only need to employ a subset of these options. In addition, some options may be more or less suitable for specific interventions. As a reminder, this model excludes captured and reinvested savings, under the assumption that this will not be a feasible source of funding for HECs until cost saving outcomes have been demonstrated.

Financing Near-Term HEC Interventions

Regardless of specific interventions chosen, all HECs will require dedicated sources of near-term revenue to pay for a portfolio of interventions. Potential sources of revenue for HEC interventions include federal, state, and local government contracts and grants, either braided or blended, or delivered via an outcomes rate card. Additional revenue could come from philanthropy or hospital community benefit to support interventions not funded by government contracts and grants, and/or to supplement funding from the government. While HECs will likely need to secure new forms of revenue to pay for interventions, HECs should leverage existing sources when possible.

Government contracts and grants from a combination of agencies represent a significant existing revenue source that can pay for HEC interventions. Braiding (i.e., combining funding from various contracts or grants to pay for a set of services) is one likely strategy to provide revenue to HECs implementing interventions for which government funding already exists. An HEC employing multiple interventions could braid existing contracts to directly support these services. While braiding requires that HECs carefully manage each contract and grant and comply with reporting and accounting requirements set by each agency, it does not require fundamental change to the way in which contracts and grants are administered throughout the state. Braiding can be managed by each HEC locally.

Blending, like braiding, is a revenue strategy that leverages existing contracts and grants to pay for multiple services. Blending would enable HECs to combine various sources into one "pool" to pay for a set of interventions, without distinct accountability and reporting to each contracting agency. Blended funding, compared to braided funding, is both less burdensome to manage and could allow for more discretion from the HEC as to how revenue is used. Unlike braiding, blending requires flexibility from

each contracting agency and agreement on unified reporting requirements. Enabling HECs to blend funds would thereby require state-level changes to contracting approaches.

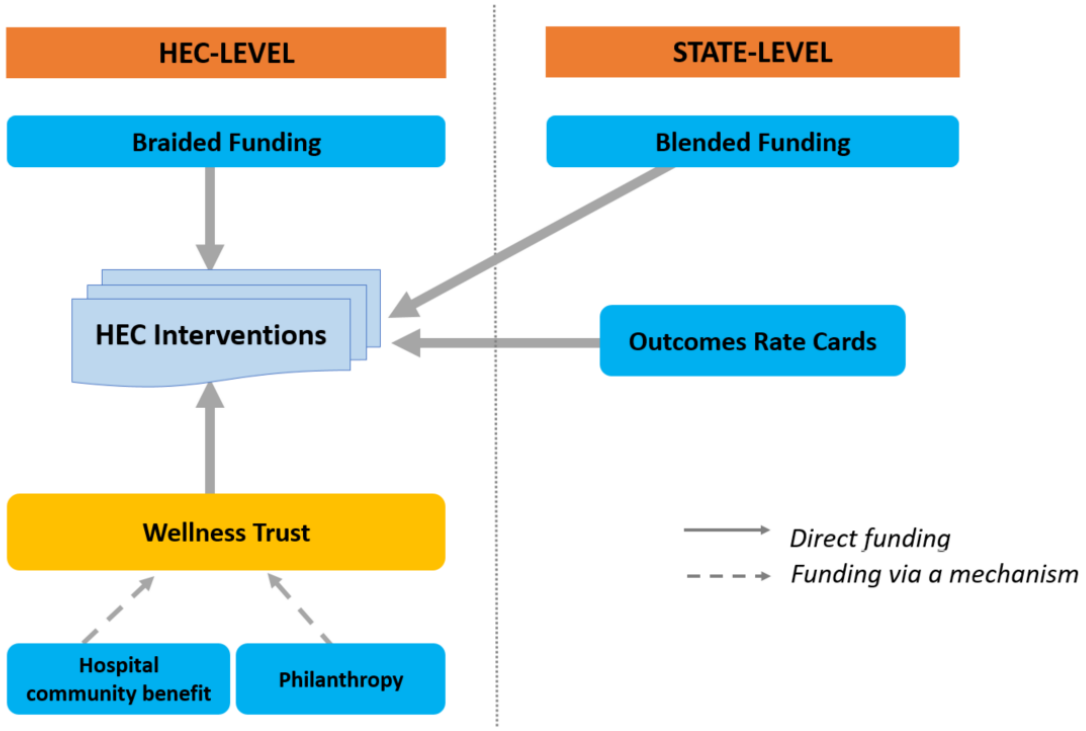
Outcome rate cards are a third option for HECs to pay for interventions through government contracts. This new form of funding—currently being piloted by the Connecticut Office of Early Childhood—reorients contracts around specific outcomes and rewards interventions by paying a set value for each outcome achieved. Similar to blended funding, an outcome rate card approach would require state-level involvement, as agencies would need to adjust current contracting methods.

Though braided funding, blended funding, and outcome rate cards represent a significant opportunity to pay for HEC interventions, HECs will likely need to supplement these sources with additional revenue. For certain interventions selected by HECs, government contracts may not currently exist or may not cover the full cost. To implement and sustain these interventions, HECs will need to secure revenue from other sources, most likely local philanthropy (from foundations, individuals, or corporations) or community benefit funds from hospitals within a defined HEC geography. These sources of revenue may be particularly necessary to sustain non-programmatic HEC interventions (e.g., those targeting policy change where government funding is unlikely to provide significant revenue or in the case of a new intervention being tested in an HEC).

Even for interventions where government funding exists, grant revenue from philanthropy or hospital community benefit may still be necessary as a supplement to ensure HECs are paid the full cost of what it takes to implement effective, outcomes-oriented interventions. This payment structure where services partially funded with government contracts are subsidized by philanthropic funds is a common revenue model for human services interventions.

While revenue from philanthropy and hospital community benefit can directly fund interventions, a Wellness Trust may be beneficial to provide the structure to secure, manage, and distribute grant funds to specific interventions within an HEC. A Wellness Trust may be managed directly by the HEC or governed by a neutral third-party.

Figure 19. Initial Financing for Interventions – Diagram 1



Source: Nonprofit Finance Fund

While sustaining HEC interventions will require revenue, an HEC may also need capital to serve as a bridge to manage revenue timing or secure revenue associated with facilities. Oftentimes, contract revenue flows to an organization only after services are rendered (e.g., on a cost-reimbursement basis), creating a need for upfront funds to support service delivery. Similarly, with an outcomes rate card approach, service providers are not paid until they demonstrate outcomes, creating a need for funding that bridges eventual revenue. With these revenue sources, HECs would require upfront capital to implement interventions before revenue becomes accessible.

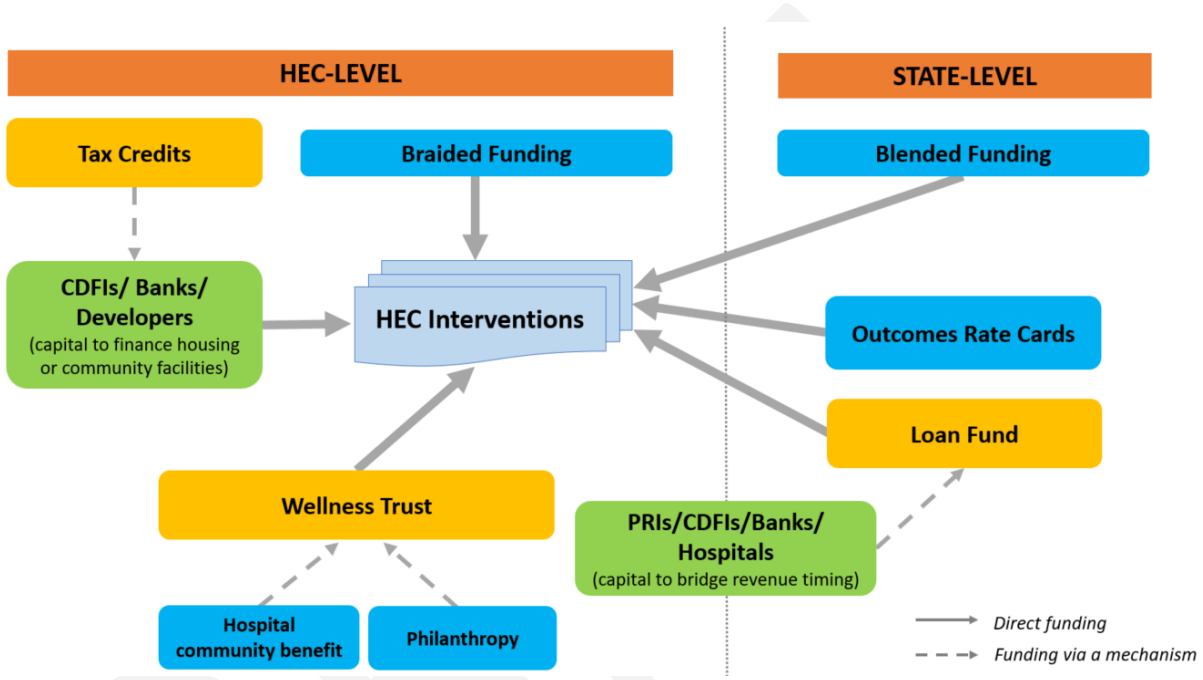
Where revenue timing creates a financing gap, debt, whether from foundations, CDFIs, banks, or others, can be an option to cover these gaps. For HECs to access this form of debt, they must demonstrate to lenders that future revenue will provide reliable and sufficient cash flow to repay upfront capital and interest. If lenders are not confident in an HEC's future revenue, they are unlikely to provide debt.

While foundations, CDFIs, local banks, or hospitals could provide debt capital directly to HEC interventions, a loan fund, managed by an intermediary organization, may be a more effective way to attract capital, ensure careful management, and provide needed oversight. A single loan fund operated at the state-level, rather than separate loan funds managed by each HEC, would provide a streamlined structure to manage the aggregation and deployment of debt. Lenders to such a fund could include foundations, CDFIs, banks, and hospitals, and could require a guarantee by the state.

Capital can also support HEC interventions building housing or community facilities, which generally requires significant investment. While facilities will ultimately be used for revenue-generating

interventions, projects need upfront capital for building-related costs before associated revenue is realized. HECs seeking to implement interventions that involve facilities development may explore tax credit strategies to incentivize investment from foundations, CDFIs, banks, or hospitals, or in the case of the Low-Income Housing Tax Credit, local developers. For tax credit investments to be a viable strategy, the facilities project must be large—upwards of $5 million— and must demonstrate the ability to generate cash flow sufficient to repay investors. Tax Credits are project-specific, and therefore would be tied directly to an HEC intervention and managed by the HEC.

Figure 20. Initial Financing for Interventions – Diagram 2



Source: Nonprofit Finance Fund

Financing HEC Infrastructure

In addition to financing individual HEC interventions, a holistic finance model must include resources that pay for necessary state- and local-level infrastructure. Infrastructure is not directly related to specific interventions but is fundamental to the effective development and ongoing management of HECs—crucial to fostering target outcomes and reduced costs over time. While several sources of revenue and capital are possible for HEC interventions, dollars to support infrastructure are likely more limited. Reinvested savings may become a viable financing source for infrastructure over time, but before outcomes are demonstrated and savings generated, HECs will require external resources to support infrastructure.

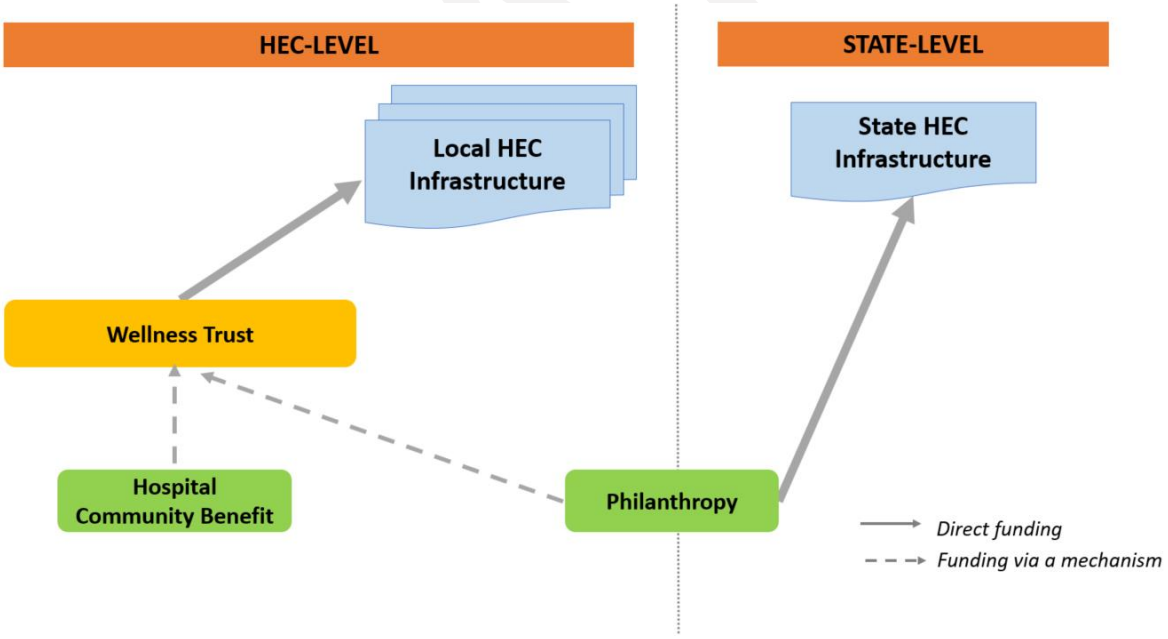
To finance local-level HEC infrastructure, including management and administrative staff, office space, and data and finance capabilities, HECs will require capital dollars, rather than revenue tied to a specific intervention or set of interventions. Philanthropy from local foundations, individuals, and corporations, and community benefit funding from local hospitals are the likeliest sources. Although debt from PRIs, CDFIs, local banks, or hospitals are feasible capital sources within the overall HEC model, it is improbable that HECs would be able to tap into these resources to support infrastructure specifically, without a

near-term identifiable repayment source. While potential future savings may ultimately be a form of repayment, lenders are unlikely to make an infrastructure investment until outcomes and cost-savings have been demonstrated in the local context.

Like with revenue from philanthropy and hospital community benefit, a wellness trust—either managed directly or by a third-party entity—may be beneficial to provide a structure to secure, manage, and distribute capital that supports HEC infrastructure.

Philanthropy is the most likely source of capital to finance the state-level HEC infrastructure necessary to oversee and provide shared functions to HECs across the state. Whereas local philanthropy—for example, community foundation grants or donations from high-net worth community members—is well-aligned to support HEC interventions and/or local infrastructure, statewide foundations and corporations, entities with a larger geographic footprint, may be likelier capital sources for state-level infrastructure. The state could also look toward national philanthropic funders—heath foundations or those supporting social determinants, for instance—for capital. As with local HEC infrastructure, debt from PRIs, CDFIs, local banks, or hospitals is an improbable capital source, as it requires a demonstrated future means of repayment. Hospital community benefit dollars are also less likely to finance statewide infrastructure, as hospitals typically invest in a more localized, defined geography.

Figure 21. Initial Financing for HEC Infrastructure

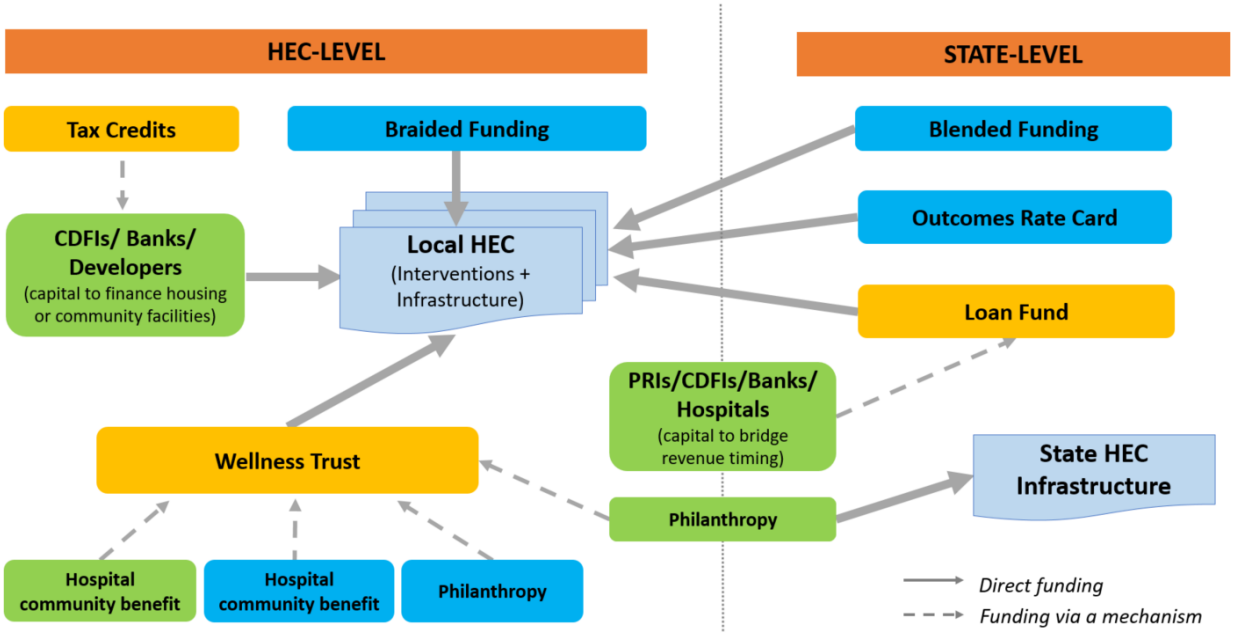


Source: Nonprofit Finance Fund

Combined HEC Financing Model

A comprehensive financing model for HECs includes financing for both interventions and infrastructure (state or local-level), coming from a variety of sources and employing mechanisms that attract, align, and manage funds.

Figure 22. Financing for HEC Interventions and Infrastructure



Source: Nonprofit Finance Fund

7.2.2. Long-Term Financing

The reasons that people in local communities and across Connecticut experience poor health are complex and multi-factorial. Therefore, a new strategy is necessary to meet these challenges. The current health care payment system is missing a critical piece of the equation: paying for the prevention of health conditions—not just treating them.

Historically, health care payment models reimbursed providers on a fee-for-service basis. Each service, treatment, or hospitalization was paid "per unit" or "per day," which meant that providers earned more money when their patients experienced sickness or ill health. More recent payment models such as shared savings arrangements promote better health care by sharing savings tied to better care with health care providers. However, neither of these models promote or pay for preventing health conditions. While preventing health conditions saves money and can produce other economic benefits, those savings or benefits do not generally accrue to the providers, agencies, and community-based organizations that help produce the results. Paying for prevention—and ensuring that the dollars go to the entities producing the result—requires new and innovative financing strategies.

The HEC Initiative is unique among health care and social service reform efforts in that it aims to create a source of financing to support holistic, community-based interventions to reduce health care costs and prevent disease and other health conditions. To do so requires the development of sustainable long-term pathways to monetize prevention savings and enable continuous reinvestment of a portion of the savings back into HECs. These long-term financing options will likely rely upon ongoing collaboration with purchasers of health care and other services such as Medicare, Medicaid, and large self-funded employers such as OSC. The primary strategy for securing long-term funding sources will reply upon a shared-savings and reinvestment approach. Under this strategy, the state will seek to support HECs by

developing ongoing shared prevention savings models with health care purchasers. For each purchaser, a complementary, longitudinal HEC shared prevention savings model can be established alongside existing reimbursement models.

Under the HEC Initiative, the state will play a critical role in identifying, negotiating, and securing long-term funding agreements with purchasers to support HECs. Specifically, the state will engage key purchasers in developing prevention-oriented shared savings arrangements with HECs. These shared saving arrangements will measure and capture health care cost savings that accrue as a result of achievement on prevention benchmarks.[160] If HECs decrease the trajectory of health problems associated with child exposure to ACEs and obesity in Connecticut over a 5- and 10-year period, the associated health care savings can be calculated, and portion of the savings made available by purchasers to reinvest in HECs. Key elements of this long-term financing model are below.

7.2.2.1. Purchasers

Purchasers interested in engaging in a prevention-oriented shared savings arrangement with HECs may include traditional health care payers such as Medicare, Medicaid, and large self-funded employers. Indeed, Medicare, Connecticut Medicaid and self-funded employers (through their commercial carriers) have already implemented shared savings arrangements with FQHCs and ACOs. Beyond the health care sector, other purchasers of services could value HEC prevention efforts and consider options to align ongoing resources or develop outcomes-based strategies. These may include state and local government agencies that focus in whole or in part on child well-being and healthy weight/physical fitness and/or who participate in the State Partnership.

7.2.2.2. Performance Period

The development of a long-term funding source requires reaching agreement with purchasers on the period of time for which performance will be measured. Existing VBP models generally do not emphasize rewarding activities that can prevent the occurrence or the progression of disease or a condition. As noted above, most ACO shared savings programs are based on encouraging appropriate health care utilization and improving management of existing conditions over a short time horizon. MSSP, for example, reassesses the health risk of an ACO's attributed population and then rebases the ACO's spending benchmarks after only three years. As a consequence, any "credit" an ACO might accumulate for investing in long-term prevention interventions and reducing the long-term prevalence of disease (i.e., health risk) among its attributed population is effectively "zeroed out." Accordingly, the HEC model will necessitate the use of a prevention benchmark over a longer time horizon, such as 5 to 10 years.

7.2.2.3. Attribution Criteria

A key aspect of shared savings arrangements is defining the population for which an entity will be held accountable as part of any shared savings arrangement. The methodology for determining population-level accountability is often referred to as "attribution."

In an ACO context, attribution refers to the process for assigning people to an ACO—usually tied to a unique ACO provider (i.e., primary care physician or practice) for whom an individual received the

[160] See Section 4 for a list of potential prevention benchmarks.

majority of their care during a recent time period.[161] ACO attribution defines the population for whom the ACO will then be held accountable on measures of health care cost and quality during a one-year *performance* period. CMS and state Medicaid agencies have experimented with multiple methods of attributing beneficiaries to ACOs. Depending on the "track" in which an ACO elects to participate, Medicare uses: (1) a preliminary prospective assignment methodology which occurs at the beginning of the performance period—with a final retrospective assignment (or "true up") after the performance period has ended to account for beneficiaries who sought most of their care outside the ACO during the performance period, or (2) a prospective-only assignment methodology that does not include any sort of retrospective "true up" after the performance period ends. The Connecticut Medicaid shared savings program bases attribution for PMCH+ on a prospective basis, and the assignment logic is refreshed annually.

In an HEC context, one could attempt to apply retrospective or prospective principles to attribute a population to an HEC for the purpose of measuring costs and meeting prevention benchmarks. Because only one HEC is active in a single geography, as compared to the ACO model where multiple ACOs operate in the same service area, the HEC attribution methodology could simply be based on a person's place of residence. For example, all individuals residing in an HEC geography at the beginning of the HEC's performance period could be attributed to the HEC. The challenge arises when there is population "churn," meaning that people move in and out of the area (referred to as "in- and out-migration") or there are births and deaths. For ACOs, where attribution is based on a relatively short timeframe (i.e., usually one year), population churn can be handled through a retrospective "true up," typically by excluding the impact of those people who come and go. This results in a smaller attributed population and modestly affects the ability to measure, with a strong degree of statistical significance, an ACO's impact on costs and quality. However, in an HEC context this churn is more problematic. Individuals present in the HEC geography at the beginning of this much longer performance period (e.g., 5-10 years) would be only a fraction of the population present at the end of this much longer performance period). This would substantially diminish the ability to measure statistically significant HEC impacts on costs and prevention benchmarks. One could potentially mitigate the impact of such churn by establishing a "minimum residency requirement" for the purpose of attribution that is less than the performance period. However, this would require a reliable source of person-level residency information over many years. For some individuals and families, particularly populations with low socioeconomic status, reliable residency information can be difficult to establish.

To best address these limitations, the Population Health Council recommends developing a **snapshot attribution methodology**. This methodology would measure performance for a defined HEC geographic population at specific points in time. For example, measurement would be taken during a baseline period (e.g., Years 0-2) and at subsequent points in time (Years 5 and 10) for the purpose of calculating shared prevention savings. Interim snapshot measurements would be taken to monitor ongoing progress.

[161] Note that in Medicare and Medicaid, beneficiaries have freedom of choice to choose among providers participating in the respective program. As a result, beneficiaries may see a number of providers over the course of a time period, some of whom may not be in the same health care system or ACO.

A snapshot approach to attribution would include all individuals served by a participating purchaser. For example, if Medicare were the purchaser, it would include all Medicare beneficiaries enrolled residing within the geographic boundaries of an HEC at a specific point in time (a "snapshot").

The snapshot attribution methodology has important limitations. It would not necessarily control for factors beyond an HEC's control over a 10-year time horizon (e.g., an influx in people with different health needs or socioeconomic status). HECs, to some extent, should be actively responding to these changing circumstances. That said, shared savings agreements with purchasers may need to include adjustment provisions for factors beyond an HEC's control. There are examples from other models that could be helpful. For example, a 2016 report prepared by the Blue Cross Blue Shield Association (BCBSA) uses regression modeling to establish the relationship between the health of a population and the health of an economy, including the level of employment.[162] (BCBSA issued a series of health index reports examining varying factors.) For the HEC Initiative, a preliminary list of attribution "control factors" could include:

- Employment
- Income
- Health insurance coverage
- Food security and cash assistance programs and benefits
- Natural disasters
- Health epidemics (e.g. influenza, Zika virus).

Indeed, several Reference Communities involved in the development of the HEC Initiative expressed similar concerns about how measurement would reflect factors beyond an HEC's control, people leaving or coming into a geography due to migration as well as birth and death.

In addition, attribution models sometimes exclude individuals who have certain diagnoses or conditions (e.g., cancer, end stage renal disease). The HEC model would likely be more inclusive rather than less inclusive given the prevention-oriented goals of the program. That said, purchasers will want to see results and prevention-oriented outcomes that are specific to their beneficiaries/members—the "denominator population." Therefore, separate attribution criteria will likely be necessary for each purchaser engaged in a shared savings arrangement.

7.2.2.4. HEC Performance Measurement and Data Sources

Attribution is only the first step toward measurement of costs and progress in meeting prevention benchmarks for the attributed population(s). Other measures will include prevention benchmarks and related process and outcome measures. The data sources for measurement will vary depending on the purchaser. Certain purchasers may wish to use other sources of data collected through their own

[162] The Health of American Report: Healthy People, Healthy Economies. *Blue Cross Blue Shield Association*. https://www.bcbs.com/sites/default/files/file-attachments/health-of-america-report/BCBS.HealthOfAmericaReport.Moodys_0.pdf. Date accessed 10/21/18.

systems. Measurement and data sources for HEC prevention measures and benchmarks are described in Section 4.

7.2.2.5. Shared Savings Calculation

In addition to determining an attribution methodology and reaching agreement on measuring costs and performance measures, the heart of any shared savings arrangement is typically a complex formula that determines whether savings were achieved and, if so, how much will be shared with a participating entity, in this case, an HEC.

Calculating Savings

Among existing shared savings programs, two methodologies have been developed to measure whether savings have occurred. Each merits a description for the purpose of illustrating their differences.

The more common approach is sometimes referred to as an **administrative formula** in which a singular methodology is agreed upon at the beginning of the contracting period. No change in methodology is allowed during the contracting period unless initial methods are found to have large and commonly recognized unanticipated flaws.[163] To isolate the effect of the interventions as clearly as possible, spending amounts are typically multiplied by ratios that account for changes in case mix (e.g., disabled, non-disabled), beneficiary risk scores, and secular trend growth in spending. The output of the methodology is a single calculation of per-capita savings among an attributed population relative to a baseline period for each participating entity within the payment arrangement. Typically, there is no allowance for statistical variation or sensitivity to assumptions. The benefit of this approach is that it is easier to calculate, and it can be reproduced often and for multiple participating entities.

A second approach, which is less common, is a **research-based evaluation**.[164] This method is more comprehensive and elaborate and relies on a combination of claims data; survey data from participating entities (e.g., providers of health care and community-based services) and consumers; and qualitative information from site visits, interviews, and observation. For the savings analysis, an econometric technique known as **difference-in-differences analysis** is used to compare spending trends against a control group. The primary example of this approach is a savings evaluation conducted to validate and test the administrative formulas that were used to calculate savings within CMS' Comprehensive Primary Care (CPC) Initiative. In the CPC example, the research-based evaluation approach used by Mathematica differed from the approach using administrative formulas in two important ways. First, the difference-in-differences analysis accounted for a much larger set of potential confounding variables and did so in a way that is less rigid than a predetermined ratio. Second, additional efforts were made to ensure that the comparison practices (or control group) were truly comparable to CPC practices using a statistical matching technique known as propensity score matching.[165]

In an HEC context, there may be an opportunity to leverage different aspects of both methodologies. Since savings distributions to HECs are contemplated to occur only after a sufficient period of time has passed to allow for measurement impacts of prevention activities, the length of time required to conduct a more elaborate research-based evaluation may not be as significant of an implementation

[163] DeLia, D. (2016). Calculating Shared Savings: Administrative Formulas Versus Research-Based Evaluations. Health Affairs Blog. 10.1377/hblog20160926.056798
[164] *Ibid*
[165] *Ibid*

barrier as it is in more traditional health care provider shared savings programs. Moreover, a research-based evaluation would enable a better accounting for potential confounding variables, as described above with respect to attribution. One challenge to a research-based method is finding a suitable control group, since, presumably, shared savings arrangements with purchasers will include all or most of the purchaser's respective population that resides in Connecticut. If no suitable control group exists, one potential option would be using interrupted time series regression analysis to explore the trends in cost before HEC and after interventions begin. Time series regression models are built and run to explore trends in changes and whether changes are statistically significantly different between the time periods.

One critical difference between measurement of savings between an HEC model and more traditional shared savings programs pertains to the measurement of risk. Measures of risk, such as Medicare's **Hierarchical Condition Category (HCC) Score**, capture how costly a person is anticipated to be relative to all other beneficiaries.[166] A person's demographics and diagnoses are used to determine a risk score. Risk scores can be "rolled up" from the person-level to a population-level. A higher risk score denotes a person or population that has more health conditions or service needs that will result in health care spending. Typically, HCC scores (and similar measures of risk) are designed to be used to "control" for risk. In other words, a shared savings program would account for a higher-risk population by using a risk score to establish and modify a spending target to treat at-risk entities fairly, from the perspective of how sick or healthy their attributed population is.

However, a central goal of the HEC Initiative is to reduce the prevalence of conditions that result in higher risk scores. Therefore, the calculation of expected spending, savings (and shared savings, as described below) must not "control" for the very measure HECs aim to influence. Indeed, these two concepts—reduction in prevalence of conditions in a population, and reduction in risk scores of a population—are both potential mechanisms to use to establish and calculate shared savings.

Calculating Shared Savings

The fundamentally innovative idea behind the HEC model is that HECs can create health care savings by improving the health of a population. That means that standard mechanisms that rely on risk adjustment when establishing expected spending for a given attributed population are inadequate as a way to demonstrate savings due to HEC activities. Rather, HECs will succeed by: 1) reducing the prevalence of a condition (or set of conditions) and meeting a prevalence benchmark, or 2) reducing the risk in a population (reducing risk scores). Both concepts are potential new innovative mechanisms for demonstrating savings.

In the case of a prevalence benchmark approach, Connecticut and participating purchasers would establish a baseline expected prevalence level and agree upon a methodology for how much money is saved if the HEC performs better than expected. Similarly, in the case of risk scores, purchasers would establish an expected level in the absence of any intervention, and then design a methodology for quantifying the impact of a risk score reduction on spending. This is a particularly promising approach regarding Medicare because HCC scores are used to establish MSSP cost benchmarks and set Medicare

[166] Hierarchical Condition Category (HCC) Scores are recalibrated by CMS each year, such that the national HCC risk score equals 1.0. A risk score in Connecticut higher than 1.0 assumes Connecticut's average morbidity is higher than the national average. A risk score lower than 1.0 assumes Connecticut's average morbidity is lower than the national average.

Advantage rates, meaning that a reduction in HCC scores is easily translatable into lower Medicare spending.

Once overall savings for the attributed population are established, the next step will be to determine how much of the savings will be shared by purchasers with HECs. Purchasers have historically relied upon an administrative formula to determine overall savings—formulas that are not typically sensitive to things like statistical significance (as noted above). Purchasers have often established thresholds called **Minimum Savings Rates** as means for mitigating the possibility of rewarding a participating entity with shared savings that are purely the result of random variation between the baseline measurement and performance period measurement. Other efforts to mitigate the potential for rewarding shared savings due to random variation include requiring a minimum attributed population size. As noted in Section 3.3.2.1, HECs would be required to have at least 20,000 Medicare beneficiaries and at least at least 150,000 people in total. Medicare's MSSP program sets ACO Minimum Savings Rates between 2 and 3.9 percent depending on the size of the ACO's attributed population.[167] To the extent robust research-based methods are used to measure or validate HEC savings, there is the possibility that a Minimum Savings Rate would be unnecessary since there would be more information to determine random changes in spending.

The state and each purchaser will need to agree on how much of the savings will be shared with HECs. In shared savings arrangements, sharing rates are typically tied to performance on quality measures. In an HEC context, this concept is inherent in the prevention benchmarks described in Section 4. For example, the more HECs improve child well-being pre-birth to age 8 years and healthy weight and physical fitness among all residents, the higher the amount of shared savings they could earn. The same concept could treat the prevention benchmarks as a "gate" to shared savings: a shared savings program could require a certain defined level of performance against prevention benchmarks, which if achieved would authorize sharing savings. Then the purchaser and the HEC could use risk scores to help quantify the actual savings that should be shared with the HEC. However the calculation of shared savings is achieved mathematically, negotiations with purchasers will determine the sharing rate—how much savings stay with the purchaser and how much are "shared" with HECs. Under Medicare's MSSP, the maximum quality performance sharing rate percentage is 50 percent under the one-sided model (upside risk only) with the remaining percent going to the Medicare program.[168]

Another consideration that will impact HEC program design, the calculation of shared savings, and the method by which savings will be distributed to individual HECs rests upon whether performance on prevention benchmarks is first measured statewide, across all HECs, or if performance is only measured and rewarded at the HEC level. These two different shared savings and measurement approaches are described below.

- **Two-Step Measurement — State level then HEC level:** The advantage of a first-level, statewide measurement of performance is that the entire state's population will be used in measurement. This method would enhance the credibility and validity of the performance measurement to

[167] Medicare Shared Savings Program: Shared Savings and Losses and Assigned Methodology. (n.d.). *Centers for Medicare and Medicaid Services*. https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/Shared-Savings-Losses-Assignment-Spec-V6.pdf.Date accessed 10/21/18.
[168] *Ibid*

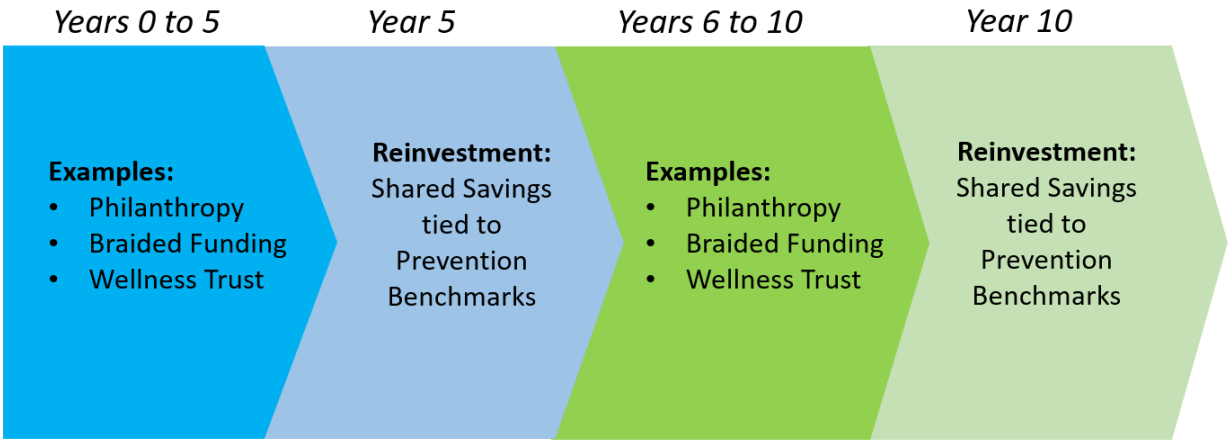
help ensure that the level of observed performance improvement is real and not simply due to "normal" variation in the data. In this scenario, shared savings could be passed from a purchaser to the Statewide Partnership and then to individual HECs. The Statewide Partnership would be responsible for distributing shared savings to each HEC based on a formula or performance improvement standard that allows for flexibility in determining how the savings are distributed across the HECs. A potential downside to this approach is that one or more HECs may make significant performance improvements at the community level; however, if the combined HEC statewide performance did not attain measurably strong improvement, high performing HECs would not receive shared savings.

- **One-Step Measurement — HEC level only**: An alternative approach would be to measure and reward performance at the HEC level only (without a first-level statewide measurement). HECs would be measured against their own community-level performance benchmarks and shared savings would be calculated accordingly for each HEC. Individual HECs could be rewarded, even if the overall health of the state did not improve. The potential downside to this approach is that performance would be measured on a smaller HEC-specific population (rather than the statewide population) and smaller populations are more susceptible to fluctuations in reported results. This would make it would harder for HECs to demonstrate to purchasers that improvements are real and not simply the result of "normal" variation. In this scenario, one or more HECs could make improvements, but if the improvements are not strong enough to credibly demonstrate real change to a purchaser, these higher performing HECs would not receive shared savings.

7.2.3. Lifecycle of HEC Financing Options

The finance options employed in the near term and long term will vary across HECs depending on evolving priorities and outcomes. The anticipation is that long-term savings will allow leverage of other finance options in select and creative ways. For example, HECs may rely less on philanthropy and be better able to access other forms of financing over the long term as they demonstrate an ability to achieve outcomes and realize savings. Debt could become a viable option not only to bridge contract or grant revenue but also to bridge expected cost savings as long as those savings can be captured to repay debt. As such, an HEC's ability to access capital from foundation PRIs, CDFIs, commercial banks, or hospitals may increase over time. While unlikely during the early HEC years, Pay-for-Success/Social Impact Bond transactions and other approaches that require demonstrated outcomes could eventually become a financing avenue for the State Partnership and/or HECs to further explore. Figure 23, below, illustrates the mix of potential HEC financing options over a 10-year time horizon.

Figure 23. Illustrative Diagram of HEC Financing Options over 10 Years



7.2.4. HEC Funds Distribution

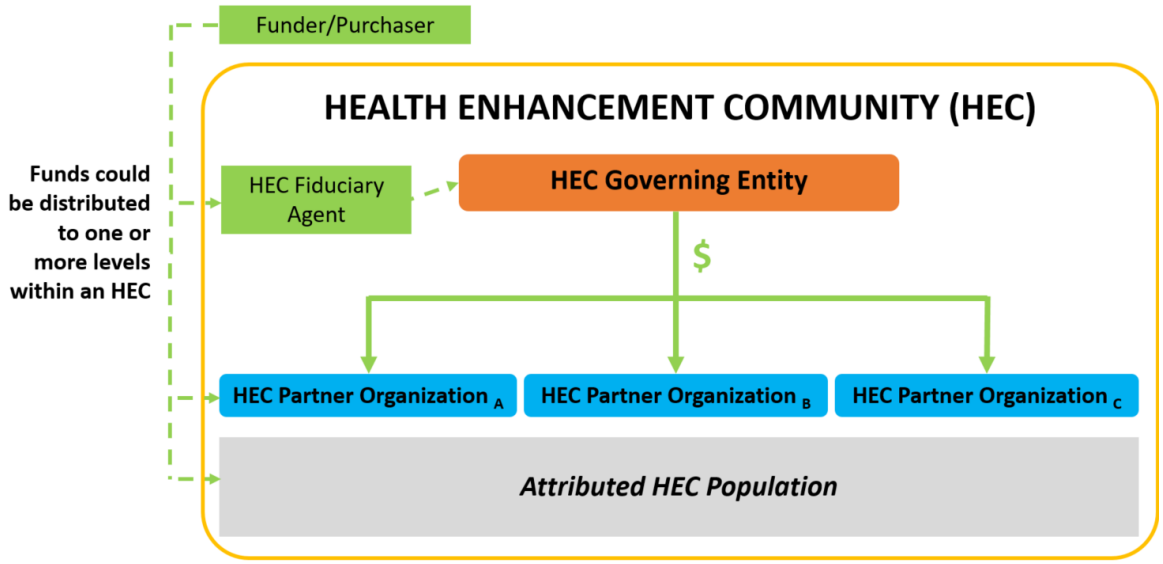
A key program design element is determining how funds received by an HEC and its participating organizations will be used to support HEC administration, operations, and prevention interventions. Two key design elements merit further description: how will HECs receive funding, and once funding is received, how will it be distributed?

7.2.4.1. HEC Mechanism for Receiving Financing

Financing to support HEC activities, both near- and long-term, is envisioned to come from a variety of sources as described above. These sources, which may include philanthropic grants; state, federal, and local investment dollars; existing programmatic revenue streams; shared savings payments; and other new sources may be received by individual HEC participating organizations or they may be received by the HEC. This financing model is meant to be flexible in this regard, in part because different HEC funders may have different preferences and requirements regarding which HEC-related organization(s) receive particular revenue streams. The goal is not to create additional barriers or unnecessary bureaucratic requirements but to recognize there will be many funding pathways, all of which should be encouraged.

To the extent an HEC receives financing centrally (e.g., shared savings distributions), it will need to have the capacity to receive and manage the monies itself or it will need to rely on a fiduciary agent under contract with the HEC or the State Partnership to manage and disburse the funding on its behalf. There are a few options for a fiduciary agent that will be explored. HECs may elect to contract with their own fiduciary agent, either one of their members or a vendor. The State Partnership may select one or more central fiduciary agents through a procurement process and give HECs the option of using the services with the goal of reducing the administrative burden on HECs. The State Partnership may also explore a procurement process to select a preferred list of fiduciary agents that meet criteria. Regardless of the option(s) selected, to ensure program integrity, the Population Health Council recommends that the State Partnership will develop a detailed set of financial management requirements and capabilities that HECs or a designated fiduciary agent will need to meet including adherence to generally accepted accounting rules, ability to receive and distribute funds, and reporting on revenues and expenses. See Figure 24 for an illustration of potential funding pathways.

Figure 24. Health Enhancement Community Funds Flow Illustration



7.2.4.2. HEC Financing Distribution

Once centralized funding is received by an HEC, an HEC will need a mechanism to determine how funding will be distributed, for what purpose, and to whom. These model design elements are often collectively referred to as aspects of "funds flow." In considering how HECs will manage their funds flow processes, a likely suggestion is to look to how ACOs manage similar processes. However, ACO approaches to developing funds flow models among participating provider organizations (e.g. primary care practices, specialists, hospitals, etc.) may have limited application in an HEC environment. This section explores those applications.

ACOs receive shared savings payments from payers based on their ability to achieve quality benchmarks and savings relative to total cost of care benchmarks. Once shared savings are received from a payer, ACOs typically have some degree of flexibility in the distribution of funds internally among ACO participating provider organizations. Funds are often distributed to participating provider organizations based on a formula determined by an ACO's governance body. Funds flow formulas are calculated by a series of weights and calculations that are tied to an ACO's shared savings payments and each provider organization's contribution toward meeting overall quality and cost metrics. These quality and cost metrics are usually related to the ACO's overall performance measures under contract with a payer. To the extent ACOs receive shared savings distributions from payers, it is often true that a portion of the shared savings revenue is used to fund investments in infrastructure, care coordination programs, or key system partners that are deemed strategically important to the overall success of the ACO.

Several features of ACO funds flow models have applicability in an HEC context. Firstly, ACO funds flow models are typically embedded in the organization's overall governance structure; decisions about funds flow weights and calculations are typically decided before financing is received, often through an annual process involving one or more governance committees. Similarly, HECs will need to prospectively agree upon such internal distribution formulas within any constraints imposed by funders and purchasers. Secondly, some portion of ACO funding is used to re-invest in the infrastructure and operations of the

organization itself. In an HEC context, this could be critical to sustaining HEC operations and will likely need to be a "first draw" on any funds received.

Unlike ACOs, however, many HEC partner organizations will not receive "base" revenue for providing health care services because they are not health care providers. This characteristic of HECs will make it difficult, if not impossible, to use such a revenue stream as a basis for determining each partner organization's relative share of the overall shared savings distribution. However, this may be an advantage of the HEC model because it will require discontinuing use of revenue and volume metrics to think more creatively about how to determine the proportionate economic value each partner organization contributes toward the overall success of an HEC in meeting prevention benchmarks and the improved health of the community.

Rather than create a set of detailed rules governing internal HEC funds flow, the Population Health Council recommends that HECs have formal governance processes in place to develop and manage the internal flow of funds *before* major sources of funding are received. Indeed, HECs having to decide on the process for funds flow is one of the primary reasons for requiring HECs to have formal partnership agreements and bylaws. In recognition that HECs may need further guidance however, the state will collaborate with HECs, consumer groups, and other stakeholders (e.g., private and public-sector employers, municipalities, and state agencies) to provide a set of guidelines, about how HEC funds could be distributed internally. For example, a minimum threshold for investment of funds into HEC infrastructure and operations may be a suggested guideline. Moreover, guidelines for the balanced distribution of funds between community-based organizations and more traditional health care providers may be developed. The guidelines will need to be sensitive to any constraints or requirements set by funders and purchasers. For example, purchasers may insist upon certain terms and conditions regarding funds flow that may vary.

The state will require annual public reporting on HEC internal funds flow to ensure HECs remain accountable to their communities.

7.3. Savings and Benefits

An important aspect of the HEC design process is to identify and forecast the potential economic savings and benefits that will accrue as a result of HEC efforts to improve child well-being pre-birth to age 8 years and healthy weight and physical fitness among all residents. Because these initiatives have the potential to cross multiple payers and sectors, a multi-pronged approach is necessary to identify savings and benefits among likely partners.

Medicare has strong potential to be a long-term HEC financing partner. Connecticut spends more per person than almost all other states. Connecticut ranked fifth in Medicare per capita spending in 2014—behind only New Jersey, Florida, New York, and Maryland.[169] Therefore, it is an area of significant focus in this section. The "Medicare Impact Model," described below, attempts to estimate these savings for Medicare.

MEDICARE OPPORTUNITY

Medicare has potential to be an early and significant long-term HEC financing partner. The magnitude of the financial opportunity among Connecticut's Medicare population is vast. Even modest reductions in obesity prevalence over a 5- or 10-year time horizon would save Medicare billions of dollars. Reinvesting a portion of those savings back into communities would enable communities to support and sustain HECs and their work. Because the funds would be generated by producing savings, they could be used to support HECs and their work overall, even though those savings are based on obesity outcomes This, in turn, creates new, long-term opportunities to improve health and well-being for all of Connecticut's residents.

Besides cost savings to the Medicare program, prevention efforts can yield savings and economic benefits to other health care payers and employers. This section also describes some of the work underway to leverage the Medicare Impact Model to develop and refine analyses applicable to other purchasers in order to produce a complete, statewide view of the potential economic value of health improved.

7.3.1. Medicare

Using publicly available data, a 10-year "Medicare Impact Model" was created to estimate baseline per capita costs for the Connecticut Medicare population (without HEC interventions) and estimate the potential health care savings that could be achieved due to HEC interventions. The model attempts to estimate, at a high-level, baseline Connecticut Medicare spending projections from 2021 to 2030 with and without HEC interventions focused around increasing healthy weight and physical fitness, an important health priority among the Medicare population which can affect a number of chronic co-morbid conditions, beneficiaries' overall quality of life, and utilization of health care services. The following section describes the data sources, methodology, key assumptions, and outputs of the analysis.

7.3.1.1. Data Sources

The Medicare Impact Model relies upon publicly available data from a variety of sources, including:

- **Medicare Geographic Variation Public Use File:** The Medicare Geographic Variation Public Use File, an online source of data tables that enables researchers and policymakers to evaluate variation in the utilization and quality of health care services for the Medicare Part A and Part B fee-for-service population by geographic area. The file includes 10 years of data (CY2007–CY2016) and includes demographic, spending, utilization, and quality indicators at the state, hospital referral region, and county levels. The Medicare Geographic Variation Public Use File also contains population-level average HCC risk scores. HCCs summarize each beneficiary's

[169] Kaiser Family Foundation, 2014. https://www.kff.org/medicare/state-indicator/per-enrollee-spending-by-residence/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Per%20Enrollee%20Medicare%20Spending%20by%20Residence%22,%22sort%22:%22desc%22%7D . Date accessed 8/15/18.

expected cost of care relative to other beneficiaries. An average HCC score for a population summarizes the expected cost of care for the population relative to the nationwide average expected expenditure. This data file was used as the primary data source for historical Medicare enrollment, Medicare FFS per capita costs, and HCC risk scores.

- **CMS Medicare Advantage/Part C Contract and Enrollment Data Database:** Data for Medicare Advantage payment rates, HCC risk scores (2007-2015) and Medicare Advantage state/county enrollment (2008-2018) by plan type were aggregated from this online database, which serves as a central repository for publicly available data on contracts and plans, monthly enrollment numbers, service area data, and contract information for Medicare Advantage. Using information from the database, average Medicare Advantage payments and HCC risk scores by county and year were calculated. Medicare Advantage penetration rates for 2017 and 2018 were also developed from this data.
- **Medicare Trustees Report (2018):** The Medicare Trustees Report is a comprehensive document prepared by CMS Office of the Actuary containing information on the past and estimated future financial operations of the Hospital Insurance and Supplementary Medical Insurance Trust Funds, including Medicare Part D (pharmacy) per person costs estimates and long-term trend projections. These long-term trend projections informed the Connecticut-specific Medicare expenditure trends used in the model.
- **Chronic Conditions Warehouse:** The Chronic Conditions Warehouse (CCW) from CMS includes Medicare data on prevalence rates, utilization, and spending for the Medicare FFS population by state/county for 19 chronic conditions (2007-2015). Conditions include Alzheimer's Disease and Related Dementia, Heart Failure, Arthritis (Osteoarthritis and Rheumatoid), Hepatitis (Chronic Viral B & C), Asthma, HIV/AIDS, Atrial Fibrillation, Hyperlipidemia (High Cholesterol), Autism Spectrum Disorders, Hypertension (High Blood Pressure), Cancer (Breast, Colorectal, Lung, and Prostate), Ischemic Heart Disease, Chronic Kidney Disease, Osteoporosis, Chronic Obstructive Pulmonary Disease, Schizophrenia and Other Psychotic Disorders, Depression, Stroke, and Diabetes. This data source was used to develop savings estimates associated with conditions related to obesity.
- **National Health Expenditure Data Projections (2018):** This data from CMS Office of the Actuary includes historical spending in each state by type of good or service delivered (hospital care, physician and clinical services, retail prescription drugs, etc.), source of funding for those services (private health insurance, Medicare, Medicaid, out-of-pocket spending, etc.) and by sponsor (businesses, households, and governments). Projections are based on the National Health Expenditures and are estimates of spending for health care in the U.S. over the next decade. These long-term trend projections informed the Connecticut-specific Medicare expenditure trends used in the model.
- **Connecticut State-Level Census Population Projections:** Statistical projections prepared by the University of Connecticut, Connecticut State Data Center that provides population projections to assist state agencies to identify demographic trends and changes within Connecticut. These projections of the population are created by sex and five-year cohort from 2015 to 2040 based on birth and mortality data from the Connecticut Department of Public Health, migration data from the U.S. Census Bureau Population Estimates and American Community Survey (ACS), and

MEDICARE'S HIERARCHICAL CONDITION CATEGORY (HCC) SCORES

Medicare's Hierarchical Condition Category (HCC) Scores capture how costly a person is anticipated to be relative to all other beneficiaries. A person's demographics and diagnoses are used to determine a risk score. Risk scores can be "rolled up" from the person-level to a population-level. A higher risk score denotes a person or population that has more health conditions or service needs that will result in higher health care spending. Hierarchical Condition Category (HCC) Scores are recalibrated by CMS each year, such that the national HCC risk score equals 1.0. A risk score in Connecticut higher than 1.0 would indicate that Connecticut's average morbidity is higher than the national average. A risk score lower than 1.0 would indicate that Connecticut's average morbidity is lower than the national average.

population data from the U.S. Census Bureau Decennial Census. These projections were used to estimate the projected total Medicare population in Connecticut through 2030.

- **CDC Collection of Online Resources & Inventory Database (CORIDOR) Behavioral Risk Factor Surveillance System (BRFSS)**: Connecticut prevalence data for obesity by age cohort relies upon BRFSS data compiled by the Connecticut Department of Public Health.

7.3.1.2. Methodology and Assumptions

The Medicare Impact Model estimates the impact of HEC interventions through a multi-step approach. A first step involves projecting Connecticut's baseline Medicare per capita spending (without any HEC interventions) from 2021 to 2030. Medicare per capita spending was projected to CY2030 based on historical Connecticut Medicare per capita trends, national Medicare per capita trends from the Medicare Trustees Report and National Health Expenditure projections. Historically, Connecticut Medicare per capita growth trends have been higher than the national average. The average annual per capita Medicare trend in Connecticut is estimated to be 5.1 percent without any HEC interventions.

Included within this first step is trending forward HCC risk scores for Connecticut's Medicare population. In examining historic risk trends among the Medicare fee-for-service (Part A and Part B) and Medicare Advantage (Part C) populations, differential risk trends were observed suggesting migration of healthier beneficiaries from Medicare fee-for-service to Medicare Advantage over time. Specifically, the data show increasing HCC risk scores over time for the fee-for-service population compared to relatively flat HCC risk scores for the Medicare Advantage population. (Table 11). Moreover, the percentage of Connecticut's Medicare beneficiaries enrolled in Medicare Advantage plans has steadily increased over time and now exceeds 30 percent. (Table 12). These trends suggest that the entire Medicare population, including beneficiaries enrolled in fee-for-service and Medicare Advantage plans, will likely need to be included in the HEC Initiative to guard against an otherwise serious confounding factor—specifically, if healthier Medicare beneficiaries are migrating to Medicare Advantage plans over time, the fee-for-service population will continue to become a relatively higher risk population. This phenomenon would make it a challenge to evaluate the success or failure of any HEC intervention focused solely on the Medicare fee-for-service population. Including the entire Medicare population in the HEC Initiative is also consistent with the goals and place-based design of the initiative more generally. HEC interventions will be broad-based and affect all Medicare beneficiaries. CMS, as the ultimate purchaser and owner of the health risk for both the fee-for-service and Medicare Advantage populations, will yield savings for both populations.

Table 11. Connecticut Average Medicare Fee-for-Service and Medicare Advantage HCC Risk Scores by Year

Medicare Population	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Fee-for-Service	1.01	1.02	1.03	1.03	1.04	1.03	1.04	1.05	1.05	1.06
Medicare Advantage	0.98	0.99	0.98	0.95	0.95	0.95	0.98	0.98	1.04	1.00
All Medicare	1.01	1.02	1.02	1.01	1.02	1.01	1.02	1.03	1.05	1.04

Table 12. Percent of Connecticut Medicare Beneficiaries Enrolled in Medicare Advantage by Year

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Medicare Advantage Penetration Rate	12.4%	16.5%	19.2%	20.7%	22.1%	24.8%	26.5%	27.5%	29.1%	30.2%

As indicated in Table 11, Connecticut's HCC risk score for the entire Medicare population (including both Part A and Part B fee-for-service beneficiaries and Medicare Advantage beneficiaries) increased from 1.01 to 1.04 from 2007 to 2016. If Connecticut's historic trend in HCC risk scores continues its upward trajectory relative to the national average of 1.00 (a fixed point that is annually reset), it suggests an HCC risk score equal to or close to 1.07 by approximately 2030.

With these baseline trend numbers, the second step of the model involves estimating the potential impact to Medicare expenditures should the HEC program be implemented (with HEC interventions). For Medicare, this included an examination of the current and projected prevalence rates of obesity in Connecticut's Medicare population and estimating how reductions in the projected rate of obesity could lead to overall Medicare health care expenditure savings.

7.3.1.3. Outputs

Three scenarios were tested to assess the range of the potential impact to Medicare expenditures should the HEC program be implemented and successfully reduce the rate of increase in obesity and related disease conditions in the Medicare population. The Medicare Impact Model tests potential changes in the HCC risk score and costs due to reductions in the prevalence rate of obesity and related disease conditions that could be directly attributable to HECs.

Using trend data provided by the Connecticut Department of Public Health, the rate of obesity among the Medicare population in 2030 is estimated to be 36.7 percent, an increase of 11.8 percentage points over 2016 data, which show the rate of obesity at 24.9 percent. The three scenarios tested the impact of limiting the growth of obesity prevalence in the Medicare population at the following levels in 2030:

- **Scenario 1**: 31.2 percent
- **Scenario 2**: 27.5 percent
- **Scenario 3**: 23.9 percent (one percentage point less than the 2016 prevalence rate)

Table 13. Summary of Medicare Impact Model Savings Scenarios [170]

Metric	2016	2030			
		Baseline	HEC Intervention Scenarios		
		(Without HEC interventions)	*Scenario 1 Lower Savings*	*Scenario 2 Medium Savings*	*Scenario 3 Higher Savings*
Obesity Prevalence (Age 65+)	24.9%	36.7%	31.2%	27.5%	23.9%
Percentage Point Change from 2016	*N/A*	*11.8*	*6.3*	*2.6*	*-1.0*
Percentage Change from 2016	*N/A*	*47.4%*	*25.3%*	*10.4%*	*-4.0%*
Total CT Medicare Risk Score (Fee for Service and Medicare Advantage populations)	1.04	1.07	1.05	1.04	1.02
Average Annual Per Capita Costs	$10,990	$20,954	$20,546	$20,272	$20,005
Average Annual Per Capita 10-yr Trend	N/A	5.1%	4.9%	4.8%	4.6%
Cumulative Savings (2021-2030) $ (billions)	N/A	N/A	$1.37 B	$2.32 B	$3.26 B
Cumulative Savings (2021-2030) %	N/A	N/A	1.1%	1.9%	2.7%

Note that the model assumes the HEC program starts January 1, 2021, is implemented statewide, and includes all full Medicare beneficiaries enrolled in either Medicare Advantage or fee-for-service. Medicare Part D is assumed to be excluded from any Medicare Shared Prevention Savings program, consistent with other Medicare Shared Savings Programs. However, the HEC program could similarly reduce costs to Medicare Part D if the model is successful in reducing the prevalence rate of obesity and related disease conditions.

[170] Estimates subject to change based on further actuarial analysis and review.

7.3.1.4. Data Limitations

The Medicare Geographic Variation Public Use File is summary level data and is not provided at the beneficiary level. This constrains the ability to stratify the data into more granular views of narrowly-defined population segments, including by age group and localized geography, such as by town or ZIP code.

Another limitation of the Medicare Public Use File is that it only includes Medicare Parts A and B data and does not include Medicare Advantage (coverage via a private health plan) and Medicare Part D [171] (pharmacy). The Medicare Impact Model estimated these spending categories using extrapolated data from national and state sources.

In addition, baseline projections assume the Medicare program continues under current law. Projections of long-term health care costs are highly uncertain. Technological advances, new treatments and/or efficiencies could serve to either increase or decrease future costs. As new data and information is available, projection assumptions will need to be updated. As HECs evolve, modeling assumptions will need to be updated. Actual results are likely to be different than expected.

7.3.2. Medicaid

In addition to the Medicare Impact Model, the Population Health Council recommends conducting a similar analysis using Medicaid claims and enrollment information. Of particular interest to Connecticut's Medicaid program will be modeling the potential impacts of both HEC health priorities—improving child well-being pre-birth to age 8 years and improving healthy weight and physical fitness among all residents. Since both priorities are relevant to Medicaid populations, impact modeling for Medicaid could be further stratified by age group and category of eligibility, to reflect the diversity of characteristics and costs of the Medicaid population. The Medicaid model would also need to consider the migration patterns into and out of Medicaid.

7.3.3. Employers

Like Medicare and Medicaid, employers are a significant purchaser of health care insurance in Connecticut. According to the Kaiser Family Foundation, approximately 54 percent (1.9 million) of Connecticut's residents received health insurance coverage through employer-sponsored insurance in 2016. For Connecticut state employees, OSC will begin examining employee health risk and cost data to consider a complementary shared savings model with HECs. Such a tool for analyzing employee health risk will be useful for engaging other Connecticut employers regarding their covered populations. However, for many employers, long-term shared savings arrangements with HECs may not be a practical pathway due to relatively small covered populations and the geographic distribution of employees.

Nevertheless, there may be opportunities to develop strategies with commercially insured and self-funded employers to use direct to ACO incentives that reward long-term improvements in employee health. There may also be opportunities to use VBID techniques to engage employees in long-term behavioral and lifestyle changes to support healthy weight and physical fitness (e.g., purchasing of

[171] Original Medicare includes Medicare Part A (hospital insurance) and Medicare Part B (medical insurance). Medicare Part A covers Medicare inpatient care, including care received while in a hospital, a skilled nursing facility (for a limited time period), and, in limited circumstances, at home. Medicare Part C is also known as Medicare Advantage and refers to private health plans that offer Parts A and B coverage. Medicare Part D covers prescription drugs.

healthy food, improving exercise habits) and adopt policies that support child well-being (e.g., work-family supports for low-income families). Employers that have a significant and enduring physical presence in communities or regions will also be encouraged to implement "anchor institution" strategies such as the examples indicated in Section 3.3.5.4**.** These approaches may be more amenable to employers than a place-based HEC strategy and would likely occur in later phases of HEC program design and development.

8. STATE AND FEDERAL ENABLING ACTIONS

8.1. Role of State in Administering the HEC Initiative

State government has a critical role in promoting health improvement, health care system transformation, and empowering local cross-sector governance and collaboration through the HEC Initiative. Using Connecticut's Behavioral Health Partnership as a model, the Population Health Council recommends establishing a multi-agency partnership, the State Partnership for Health Enhancement (State Partnership), to oversee and administer the HEC Initiative. The State Partnership would comprise multiple state agencies that have purviews that include child well-being and healthy weight and physical fitness. As with the Behavioral Health Partnership, agencies would support HECs in multiple ways. This includes pursuing legislative and regulatory changes that will support HECs and enable the HEC Initiative, enabling the provision of a centralized resource for technical assistance and other types of support as HECs form and implement interventions, and establishing an HEC Advisory Committee that would advise on the implementation and performance of the HEC Initiative. The agency participants, structure, and specific roles would have to be defined and Memoranda of Understanding executed to establish the State Partnership. However, the Behavioral Health Partnership provides a useful model for establishing a state structure that leverages existing agencies and minimizes the need for resources to support a new structure. Over time, whether as part of the State Partnership or as a critical partner, a variety of state agencies will likely be engaged partners in the HEC effort, including:

- Office of Health Strategy
- Department of Public Health
- Department of Social Services
- Department of Children and Families
- Department of Mental Health and Addiction Services
- Office of Early Childhood
- Connecticut Insurance Department
- Office of the State Comptroller
- Department of Education
- Department of Housing
- Department of Corrections
- Department of Developmental Services
- Department of Rehabilitation Services, State Unit on Aging

8.2. Statewide Support

8.2.1. Technical Assistance for HECs

The Population Health Council recommends that the State Partnership provide and/or contract for centralized technical assistance infrastructure support for HECs' planning and implementation and to foster cross-HEC learning. The recommended technical assistance includes training, targeted resources,

templates and other tools, coaching, access to experts with on-the-ground experience, and a facilitated learning community among HECs. Examples of support are:

- A *Building Your HEC Governance Structure Package* with sample formal partnership agreements, bylaws, contracts, backbone organization scopes, and job descriptions for key HEC personnel
- Near-term financing technical assistance, tools, and coaching for HECs to assess their needs
- Assistance with identifying, prioritizing, and pursuing near-term and upfront financing, including grant writing and other fundraising
- Assistance with developing financial plans and pro formas for the HEC, including exploring start-up and ongoing costs and capacity needs as well as evaluating existing resources and assessing revenue opportunities
- HEC change packages with high-level "change concepts," driver diagram, and logic model templates, critical change tactics, and other information and tools
- Access to existing toolkit and change packages on select interventions such as home visitation programs
- Trainings from experts on key topics such as effective and meaningful community engagement and involvement strategies, managing multi-sector collaboratives, and accessing and using data to understand and drive performance
- Sustainability planning guide and tools to support HEC-driven sustainability efforts
- Cultivating anchor institutions
- In-person and web-based trainings and interactive learning community group forums

8.2.1.1. Statewide HEC Advisory Committee

The Population Health Council recommends that the State Partnership establish an HEC Advisory Committee that will be responsible for advising the State Partnership and HECs on the implementation and performance of the HEC Initiative. The committee will comprise representatives from each HEC and key stakeholders. Examples of roles for the committee include:

- Reviewing progress and performance of the HEC Initiative and recommending strategies to accelerate progress and improve performance
- Reviewing and providing input on funding and financing strategies
- Identifying and recommending state-level and local policies to support HECs generally and health equity, child well-being, and health weight/physical fitness aims specifically
- Recommending state-level and local policies that would restructure service delivery in ways that support HECs' work
- Recommending technical assistance and other support for HECs

8.3. State-Level Statutory and Regulatory Levers

To ensure workable and successful implementation of the HEC Initiative, the Population Health Council recommends the creation of new legal and regulatory authorities that enable HECs and the financial,

operational, and administrative structures that will support them. There are a variety of potential regulatory and legislative changes that could be necessary or advisable to implement the HEC Initiative. At a high level, the following potential policy, legal, and operational needs must be considered:

- Modify VBP and VBID initiatives to align incentives with HEC and other state goals
- Assure an appropriate and adequate workforce for HECs
- Design and support the necessary health information technology (HIT) infrastructure to guide and inform HEC programmatic activities and state monitoring and reporting
- Enable appropriate governance and administrative structures for emerging HEC models

8.3.1. Modifying Existing VBP Initiatives

Certain modifications to existing VBP arrangements in Connecticut would help align health care payments from commercial payers, Medicaid, and Medicare with HEC activities.

A crucial element of the state's broader delivery system reform goals is the Primary Care Modernization (PCM) initiative, which would define primary care practice capabilities that enable more flexible and efficient care delivery and create payment model options to support the reform. The PCM initiative and associated reforms will be implemented on a multi-payer basis and will have a significant impact among providers participating in ACOs. As noted in Section 7, Connecticut will explore how to encourage existing organizations in the health care system, such as ACOs, employers, commercial health plans, and health care providers, to have formalized relationships with HECs.

Other alignment opportunities include increasing the use of VBID and direct-to-employee incentives (provided outside of the insurance benefit) described in Section 7.1.2. The models can place a greater emphasis on prevention-oriented activities and services to reward healthy behavior.

8.3.2. Workforce

HECs will design and implement a range of interventions, many of which may rely on Community Health Workers (CHWs). CHWs are currently working in Connecticut. Although community colleges offer education and training, there is currently no formal process for state certification. OHS issued a draft report of the SIM CHW Advisory Committee in July 2018 that included a series of recommendations for creating a statewide CHW certification program. The report urges the adoption of legislation to implement the CHW Advisory Committee's recommendations, which would support the HEC Initiative as well.

8.3.3. HIT and Privacy

The data and HIT infrastructure needs of the HEC Initiative are addressed in Section 6 of this report. Under a complementary SIM initiative, OHS is in the process of developing a Core Data Analytics Solution (CDAS) through the University of Connecticut (UConn) and its Analytics and Information Management Solutions (AIMS) group. Generally, the HEC Initiative will take a population-level approach, and the data that will need to be shared with HECs and across HECs will be population-level data, not individually identifiable data. While it is possible that, as the HECs and their interventions and relationships with payers evolve, there will be a need for exchange of more heavily protected confidential data, the current plan for data exchange and HIT will not require HECs to exchange personal

health information and therefore will not require changes to current regulatory and statutory schemes governing data exchange and privacy.

8.3.4. Governance and Administration

The Initiative will create new entities, HECs, at the local level. The Population Health Council also recommends the establishment of the State Partnership to administer the HEC Initiative. Therefore, the new legal entities and authorities recommended could potentially be enabled by statutory changes to empower relevant state and local agencies to structure and participate in the initiative. Such legislation might cover a range of topics including:

- Authority of the State Partnership member agencies to negotiate necessary agreements to enable the participation of Medicare and other payer or state agency purchasing partners
- Authority to define HECs and to select or arrange for a process to select HECs
- Authority to arrange financing for near-term and ongoing HEC investments
- Authority to direct revenue to HECs, including authority for the State Partnership to contract for services from fiduciary agents
- Authority to contract for other centralized HEC administrative or programmatic functions, such as technical assistance, training, and evaluation services
- Creation of an HEC Advisory Committee, including composition, charter, and authority of the committee

8.3.5. HEC Interventions

The statutory and regulatory levers addressed above emphasize changes that are necessary to enable HECs and their activities from an operational perspective. However, there are also key state-level legislative actions that would further support HECs in improving child well-being and healthy weight/physical fitness.

- **Child Well-Being:** Minnesota is an example of a state that passed legislation to expand children's mental health grants to include training for parents and local non-profits on the impact of adverse childhood experiences and developed a website "to share information and strategies to promote resilience and prevent trauma."[172]
- **Healthy Weight and Physical Fitness:** Thirty-six states and Washington, D.C. have adopted a shared use policy that either requires or recommends cooperation between schools and communities to allow local residents to access schools' recreational facilities outside of school hours. Shared use agreements can help increase opportunities for physical activity in communities.[173]

[172] Minnesota Statutes Section 245.4889. https://www.revisor.mn.gov/statutes/cite/245.4889. Date accessed 8/14/18.
[173] Shared Use of Facilities. (n.d.). *The State of Obesity*. https://stateofobesity.org/state-policy/policies/shareduse/. Date accessed 10/21/18.

8.4. Federal Regulatory Levers

8.4.1. Multi-Payer Model Agreement

The purpose of SIM is to accelerate health care system transformation. To further this purpose, CMS has issued guidance to states about how to engage CMS in discussions about Medicare participation in state-driven transformation, including the process for SIM states to engage CMS in the co-development of multi-payer models and the criteria that CMS will use to judge whether to consider Medicare participation in a multi-payer model. An explicit goal of the HEC Initiative is to engage private and public purchasers, including Medicare.

The vehicle through which Medicare participation in the HEC Initiative and PCM would be authorized is likely to be a "Multi-Payer Model Agreement" with CMS. The Model Agreement would define the innovative reform effort the state is undertaking, authorize Medicare's participation in that effort, and sets the terms and conditions of that participation. In Connecticut, the reform effort addressed in such an agreement would include the HEC Initiative and PCM, which together constitute Connecticut's broader payment and delivery reform model.

In guidance updated in October 2017, CMS re-asserted and expanded upon principles in previously established guidance for multi-payer models and Medicare participation.[174] The October 2017 guidance provided detail on the following six principles that CMS will use to assess state proposals for Medicare alignment with proposed multi-payer payment and service delivery models:

- Patient-centered
- Accountable for total cost of care
- Transformative
- Broad-based
- Feasible to implement
- Feasible to evaluate

To date, there are three such initiatives: Maryland's All-Payer Model, which initially focused on hospital spending and is expanding in 2019 to include more comprehensive services and initiatives; Vermont's All-Payer Model, which enables Medicare participation in an ACO Initiative; and Pennsylvania's Rural Health Model, which sets global budgets for hospital services. Delaware, Washington, Iowa, and Colorado, all SIM states, are also considering a Medicare Multi-Payer Model Agreement as part of their SIM sustainability strategies.

Connecticut has engaged in exploratory conversations with CMS about Medicare's participation in the HEC and PCM models. The working assumption, pending further development of the HEC financing model, is that such participation might involve Medicare support for start-up financing, ongoing financing, or both.

[174] Update to Guidance: Medicare Alignment in Multi-Payer Models under the State Innovation Models Initiative. (n.d.). *Centers for Medicare and Medicaid Services*. https://innovation.cms.gov/Files/x/sim-medicare-mpmodelsguidance.pdf. Date accessed 8/14/18.

Based on CMS guidance and other Multi-Payer Model Agreements, such an agreement will outline necessary waivers needed to authorize Medicare participation and define certain other expectations. Those expectations are outlined below.

8.4.1.1. Financial Targets

Multi-payer models have set explicit financial targets for all-payer spending growth, usually associated in some way with historic economic growth in a state. This is a fundamental component of a multi-payer reform, because it sets a goal to contain growth in overall health care spending to a set growth rate.

Multi-payer models have also set separate, explicit financial targets for Medicare spending growth. In a sense, these financial targets provide CMS with assurance that the operation of the initiative will save money or will not cause Medicare or overall spending to increase more than it otherwise would have in the absence of the initiative. There are certain important concepts with respect to financial targets that will need to be analyzed and discussed with CMS and with stakeholders in Connecticut.

MARYLAND'S ALL-PAYER MODEL AGREEMENT

CMMI is currently engaging in discussions with the state of Maryland to refine the expansion of the Maryland All-Payer Model beginning in 2019. One element of the expansion is particularly relevant to the HEC model. Maryland's original model, which focused primarily on hospital payments, was extended in 2017 and included a voluntary Care Redesign Model, which created incentives for hospitals to engage in projects with community partners to achieve defined goals. Going forward, CMMI and Maryland are discussing how to quantify actual Medicare savings from population health efforts, and how to ensure that savings can be leveraged to support those efforts.

First, a Model Agreement must define baseline Medicare spending growth. Maryland's original Model Agreement defined Medicare spending growth with reference to actual national Medicare growth rates in a given year. By contrast, Vermont's Model Agreement defines Medicare spending growth with reference to projected national Medicare growth (to provide the state with a "prospective" target).

Second, the Model Agreement must stipulate over what timeframe financial targets should be calculated. The HEC model is unique in its focus on mostly interventions that would yield longer-term savings. Maryland and Vermont's original agreements used a 5-year period, while Maryland's expanded model contemplates a 10-year agreement. The Pennsylvania initiative contains six performance years after an initial planning year. The timeframe of a Connecticut Model Agreement will be of central importance to accommodate the long-term health improvement goals of the HEC Initiative. A related issue concerns monitoring compliance with the financial targets: if interventions are expected to provide savings over a longer time frame, CMS and Connecticut must determine how to monitor whether the state is "on track" to achieve its targets during the operation of the model.

Third, the Model Agreement must describe what services will be included in calculating the financial target and whether those services need to be the same across payers. It will have to indicate if

prescription drug spending as well as services that are covered differentially across payers, such as behavioral health and substance abuse services and long-term services and supports, are included.

It is important to note that financial targets (as instituted in other states) do not represent state financial liabilities. The states are not obligated to "pay back" Medicare if the spending reduction target is not reached. Rather, the ultimate consequence of a failure to stay on track to meet a financial target is that the Model Agreement and Medicare's participation in the initiative may end.

8.4.1.2. Quality Measures

A central element of any Model Agreement will involve performance measures that allow CMS and Connecticut to assess the initiative. It will be important to align performance measures in a Model Agreement with measures used to assess HEC performance. Given the goals of the HEC model, these measures may be population- and prevalence-focused. Because a Model Agreement would cover both the HEC and the state's associated primary care payment reforms, the state or CMS may also wish to consider including certain more traditional health care delivery measures as well.

8.4.1.3. Scale Targets

Multi-payer models are intended to use the leverage of multiple payers acting in alignment to drive health system transformation. As a result, CMS will likely expect any Model Agreement to set targets for beneficiary/member participation in the initiative, such as the percentage of participating payers or the percentage of covered (or attributed) Connecticut residents.

9. HEC DESIGNATION

9.1. HEC Procurement Process

HECs will be designated through a state procurement process. The process will occur in three phases:

Phase 1 - Pre-Procurement: The State Partnership will prepare for the HEC procurement. If feasible, the Population Health Council recommends that during this period communities interested in becoming HECs begin to work with community members and stakeholders to develop initial plans for key HEC areas including their geographies, partners, governance structures, potential interventions (existing and new), and other key HEC implementation details in preparation for procurement.

Phase 2 - HEC Procurement and Pre-Implementation: The state will issue a Request for Applicants (RFA) to designate HECs. The prospective HECs will submit their proposals and engage in an iterative process with the state to conduct a readiness assessment; refine HEC proposals (including refining HEC geographies); finalize HEC designation; and assign or, in some cases, have HECs self-assign themselves to two implementation tracks based on the outcomes of the readiness assessment. The state will provide technical assistance, training, and access to Subject Matter Experts to assist applicants. This process will foster, from the beginning, collaboration between the State Partnership and HECs and among HECs. This will help ensure that designated HECs are ultimately structured to promote their success and sustainability.

Phase 3 - HEC Implementation: Selected HECs will begin implementation based on their track assignment. Having two implementation tracks recognizes that some existing community collaboratives will be ready to develop an HEC and, after initial planning and ramp-up periods, launch HEC activities. Other existing community collaboratives or new collaborations may need additional time and support to prepare to develop an HEC and initiate HEC activities. The two implementation tracks will help ensure that groups that are most ready can move ahead while others can continue to work on their readiness. The first track will complete ramp-up activities initiated in the HEC Procurement phase (such as establishing their governance structures; hiring and onboarding new staff; developing policies, procedures, and workflows; and developing and initiating a communication strategy about the HEC Initiative) and begin implementation. The second track will continue to receive technical assistance, training, and other support based on their readiness assessment and begin implementation six months after the first track.

9.2. Implementation Roadmap

The HEC Initiative will be implemented through a 10-year, multi-phased approach, estimated to begin April 1, 2019. The Population Health Council recommends the following phases.

9.2.1. Phase 1: Pre-Procurement (Months 0–6)

In this phase, the State Partnership will be established to oversee and support the HEC Initiative. If feasible, communities will begin to define their prospective HEC. Stakeholder and community engagement will initiate and continue through this phase as the HEC model is finalized. Groundwork will be laid for recommended statutory/regulatory changes to support the HEC model and goals. The State Partnership will work to establish the infrastructure needed to select and support HECs. The process to ultimately select the individual HECs will also be established, including the development of the HEC Request for Applicants (RFA), evaluation criteria and process, and award notification and contracting

process/terms. Communities interested in becoming HECs will work with community residents and stakeholders to prepare for the HEC RFA release in Phase 2.

9.2.2. Phase 2: HEC Procurement and Pre-Implementation (Months 7—24)

In this period, prospective HECs will apply and be designated as HECs. Building on the work in the pre-procurement process, selected HECs will undergo a brief ramp-up period to prepare for and ultimately implement interventions selected for and by their communities. The HEC financing model will be negotiated with potential funders and the HEC financing model will be finalized with the commitment of near-term financing. The State Partnership will establish and implement centralized HEC supports, including establishing the information technology infrastructure within CDAS, the statewide technical assistance model, and the development and initiation of the HEC Advisory Committee.

9.2.3. Phase 3: HEC Implementation (Months 25—120)

This phase will involve the full implementation of HECs across Connecticut and include the implementation of interventions in HECs' geographies. The State Partnership will implement ongoing monitoring and reporting of the HECs and adjustments to the model will be made to achieve and maximize outcomes. The State Partnership will also provide ongoing support to HECs through statewide strategies identified in Phase 1 and 2. HECs will report on progress annually, demonstrate results within this period, and any shared savings incentives/arrangements achieved will be distributed to HECs accordingly.

An implementation roadmap with specific goals, measurable milestones, and timeline is provided below.

9.2.4. Implementation Roadmap: Goals, Milestones, Timeline

Goal	Milestone	Timeline
PHASE 1: PRE-PROCUREMENT (Months 0-6)		
HEC Oversight and Support	Establish State Partnership for Health Enhancement (State Partnership)	Month 3
	Finalize MOU for State Partnership agencies	Month 6
	HEC Y1 workplan completed	Month 3
Financing Model Plan: Development and Implementation	Financing options selected and prioritized	Month 4
	Concept paper/proposal for funders developed	Month 5
	Concept paper/proposal for funders submitted/provided to potential funders	Month 6
HEC Design Details: Finalized	HEC design elements/guidelines are finalized with community member and stakeholder input	Month 5
	Detailed HEC model updated and finalized	Month 6

Goal	Milestone	Timeline
Statutory and Regulatory Changes (State level): Development	Statutory and regulatory levers identified	Month 6
HEC Selection: RFA Planning	HEC pre-planning process initiated for interested communities with community members and other stakeholders	Month 3-6
	Selection criteria and iterative selection process established	Month 4
	Contracting requirements and process established	Month 5
	HEC Request for Applicants (RFA) created	Month 6
PHASE 2: HEC PROCUREMENT AND PRE-IMPLEMENTATION (Months 7—24)		
HEC Selection: Iterative Selection Process	RFA released	Month 7
	Final HEC geographic boundaries identified	Month 10
	HECs selected for Tracks 1 and 2 and notified	Month 12
	Ramp-up TA provided to HECs	Months 12-24
Financing Model: Development & Finalization	Terms negotiated	Month 12
	Terms finalized	Month 14
	Agreements drafted and finalized	Month 18
Statewide Intervention: Design	Statewide interventions (e.g., legislation, regulatory changes, social media campaigns) designed	Month 12
IT Infrastructure: Established	CDAS reporting mechanisms for HECs developed	Month 12
	Training for HECs on data measurement collection, reporting, and use of CDAS developed	Month 12
HEC Oversight and Support	Statewide centralized HEC supports designed	Month 12
	HEC Y2-5 workplan completed	Month 12
	HEC Advisory Committee established	Month 15
	HEC Advisory Committee convened	Month 15 - Ongoing

Goal	Milestone	Timeline
	Statewide centralized HEC supports implemented	Month 18-Ongoing
	Statewide interventions (e.g., social media, legislative/regulatory changes) implemented	Month 18 – ongoing
HEC Implementation: Initiation	HEC Track 1 ramp-up period completed and Track 1 launched	Month 18
	HEC Track 2 ramp-up period completed and Track 2 launched	Month 24
HEC Interventions	Interventions implemented	Month 18 - Ongoing
Statutory and Regulatory Changes (State-level): Legislation Development	Legislation drafted, reviewed and finalized	Month 16
	Legislation filed	Month 18
	Legislation enacted	Month 24
PHASE 3: HEC IMPLEMENTATION (Months 25—120)		
HEC Oversight and Support	HEC Demonstration Y1 progress and outcome report submitted by HECs	Year 3, Month 3
	HEC Y2 annual report completed by state	Year 3, Month 6
	HEC Demonstration Y2 progress and outcome report submitted by HECs	Year 4, Month 3
	HEC Y3 annual report completed by state	Year 4, Month 6
	HEC Demonstration Y3 progress and outcome report by HECs	Year 5, Month 3
	HEC Y4 annual report completed by state	Year 5, Month 6
	3-year analysis of HEC impact completed by state	Year 5, Month 6
	HEC Y6-10 workplan completed by state	Year 5, Month 9
	HEC Demonstration Y4 progress and outcome report submitted by HECs	Year 6, Month 3
	HEC Y5 annual report completed by state	Year 6, Month 6
	HEC Demonstration Y5 progress and outcome report submitted by HECs	Year 7, Month 3

Goal	Milestone	Timeline
	HEC Y6 annual report completed by state	Year 7, Month 6
	HEC Demonstration Y6 progress and outcome report submitted by HECs	Year 8, Month 3
	HEC Y7 annual report completed by state	Year 8, Month 6
	6-year analysis of HEC impact completed by state	Year 8, Month 6
	HEC Demonstration Y7 progress and outcome report submitted by HECs	Year 9, Month 3
	HEC Y8 annual report completed by state	Year 9, Month 6
	HEC Demonstration Y8 progress and outcome report submitted by HECs	Year 10, Month 3
	HEC Y9 annual report completed by state	Year 10, Month 6

10. APPENDICES

APPENDIX 1. PROVISIONAL MEASURES LIST

The table below includes the provisional measures under the two priority areas: child well-being and healthy weight and physical fitness. Measures will be consistent statewide and will be assessed at both the HEC and state levels. The provisional measures were chosen based on stakeholder input, evidence connecting them with the two priority aims, and identified data sources. This list is not final and will continue to evolve through the collaborative HEC design process prior to procurement as stakeholder engagement continues and additional feedback is received. The total number of measures may also change to achieve the optimal balance between developing a comprehensive set of meaningful targets and avoiding an overly burdensome HEC design. As baseline data is collected, sub-categories of measures will be added to address observed health disparities. In addition, health equity/inequity measures will be incorporated into the provisional measures list based on the results of a concurrent project under the Health Information Technology Program Management Office. Additionally, provisional measures may include relevant Medicaid HEDIS measures to ensure alignment with primary care.

In addition to the statewide prevention measures, each HEC must individually choose process and outcome measures to target and track related to each of their chosen programmatic, systems, policy, and cultural norm interventions. These requirements are discussed further in Section 4.3 of this report.

Domain	Provisional Measure	Numerator Description	Denominator Description	Source
Child Well-Being				
Primary Composite Measure	Substantiated child abuse/neglect cases per 1,000 population ages birth to 8	Total number of population under 18 years of age with at least one substantiated allegation of abuse or neglect	Total population under 8 years of age divided by 1,000	Connecticut Department of Children and Families
	Rate of chronic absenteeism	Number of students chronically absent per school year	Total student population enrolled	Connecticut State Department of Education EdSight
	Performance level on all six domains of the Kindergarten Entrance Inventory	Number of students scoring a one or two across the six domains of the entrance inventory including literacy skills, numeracy skills, physical/motor skills, creative/aesthetic skills, and personal/social skills.	Total population in kindergartener	Connecticut State Department of Education EdSight
Secondary Measures Related to Children	Children in Placement per 1,000 population under 18 years of age	Total number of population under 18 years in placement with the Department of Children and Families	Total population under 18 years of age divided by 1,000	Connecticut Department of Children and Families
	Infants removed from mother at birth	Total number of infants in the population removed from mothers at birth	Total population births	Connecticut Department of Children and Families;

Domain	Provisional Measure	Numerator Description	Denominator Description	Source
				Connecticut Department of Public Health, Vital records
	Children referred to Juvenile Court per 1,000 population under 18 years of age	Total number of population under 18 years of age referred to Juvenile Court	Total population under 18 years of age divided by 1,000	State of Connecticut Judicial Branch, Case Management Information System
	Rate of school suspensions	Number of students suspended per school year	Total student population enrolled	Connecticut State Department of Education EdSight
	Rate of non-graduates no longer enrolled in a four-year graduation cohort	Number of students in a four-year graduation cohort that did not graduate and are no longer enrolled in the school	Total student population in four-year graduation cohort	Connecticut State Department of Education EdSight
	Rate of children who moved schools more than once in the past two years	Number of students who moved schools more than once in the past two years	Total student population enrolled divided by 1,000	Connecticut State Department of Education EdSight
	Hospital emergency department visits for children with injuries per 1,000 population under 18 years of age	Number of population under 18 years of age hospital emergency department visits due to a primary external injury code for any injury, any intent	Total population under 18 years of age divided by 1,000	Hospital Emergency Department Data
	Hospital emergency department visits for children related to substance abuse per 1,000 population under 18	Number of population under 18 years of age hospital emergency department visits due to substance abuse	Total population under 18 years of age divided by 1,000	Hospital Emergency Department Data
	Hospital emergency department visits for children related to mental health issues per 1,000 population under 18 years of age	Number of population under 18 years of age hospital emergency department visits due to mental health issues	Total population under 18 years of age divided by 1,000	Hospital Emergency Department Data
	Hospital emergency department visits for children for asthma per 1,000	Number of child hospital emergency department visits due to asthma	Total population under 18 years of age divided by 1,000	Hospital Emergency Department Data

Domain	Provisional Measure	Numerator Description	Denominator Description	Source
	population under 18 years of age			
	Hospital inpatient admissions for children related to substance abuse per 1,000 population under 18 years of age	Number of population under 18 years of age hospital inpatient admissions due to substance abuse	Total population under 18 years of age divided by 1,000	Hospital Admissions Data
	Hospital inpatient admissions for children related to mental health issues per 1,000 population under 18 years of age	Number of population under 18 years of age hospital inpatient admissions due to mental health issues	Total population under 18 years of age divided by 1,000	Hospital Admissions Data
	Percent of babies breastfed	Number of population under 1 year that were ever breastfed	Total population under 1 year	Electronic Health Records
	Disruptive behavior disorder prevalence	Population under 18 years of age diagnosed with disruptive behavior disorders	Total population under 18 years of age	Electronic Health Records
	Composite measure: Population screened for elevated blood lead levels under 6 years of age and population testing positive for elevated blood lead levels	Number of population screened for elevated blood lead levels under 6 years of age Number of population testing positive for elevated blood lead levels	Number of population under 6 years of age Number of population under 6 years of age tested for elevated blood lead levels	Connecticut Department of Public Health, Lead Poisoning Prevention and Control Program
Secondary Measures Related to Parents Child Well-Being	Births to parents who have not completed high school	Number of babies born to parents who have not completed high school	Total population births	Connecticut Department of Public Health, Vital records
	Births to a mother who smoked during pregnancy	Number of babies born to a mother who smoked during pregnancy	Total population births	Connecticut Department of Public Health, Vital records
	Child Low Birthweight	Number of babies born with weight below 2,500 grams	Total population births	Connecticut Department of Public Health, Vital records
	Teen birth rate	Number of female population ages 15-19 given birth	Total female population ages 15-19	Connecticut Department of Public Health, Vital records

Domain	Provisional Measure	Numerator Description	Denominator Description	Source
	Incarcerated caregiver per 1,000 population under 18 years of age	Number of incarcerated caregivers	Total population under 18 years of age divided by 1,000	Connecticut Department of Corrections
	Percent of mothers screened for maternal depression	Number of mothers receiving screening for maternal depression	Total mothers in population	Electronic Health Records
Future Secondary Measures	*Kindergarten students with no early intervention*	*Number of Kindergarten students without having accessed an early intervention prior to starting school*	*Number of Kindergarten students in population*	*Integrated Data Set from Early Intervention Implementing Organizations*
	Additional measures protective factors	*TBD*	*TBD*	*TBD*
Healthy Weight and Physical Fitness				
Primary Measures	Adult obesity prevalence	Number of adults 18 or older who are obese. Obesity is defined as having a body mass index (BMI) of 30.0 or greater.	Population age 18 or older.	Electronic Health Records; tracked in alignment with existing weight- and nutrition-related measures (e.g., HEDIS)
	Child obesity prevalence	Number of population under 18 years of age who are obese. Obesity is defined as falling into the weight category greater than or equal to the 95th percentile.	Population under 18 years of age	Electronic Health Records; tracked in alignment with existing weight- and nutrition-related measures (e.g., HEDIS)
Secondary Measures	Students reaching health standard on Connecticut Physical Fitness Assessment – grade 4	Number of population in grade 4 assessed reaching the health standard on the Connecticut Physical Fitness Assessment	Number of population assessed in grade 4	Connecticut State Department of Education EdSight
	Students reaching health standard on Connecticut Physical Fitness Assessment – grade 6	Number of population in grade 6 assessed reaching the health standard on the Connecticut Physical Fitness Assessment	Number of population assessed in grade 6	Connecticut State Department of Education EdSight
	Students reaching health standard on Connecticut	Number of population in grade 8 assessed reaching the health standard on the Connecticut Physical Fitness Assessment	Number of population assessed in grade 8	Connecticut State Department of Education EdSight

Domain	Provisional Measure	Numerator Description	Denominator Description	Source
	Physical Fitness Assessment – grade 8			
	Students reaching health standard on Connecticut Physical Fitness Assessment – grade 10	Number of population in grade 10 assessed reaching the health standard on the Connecticut Physical Fitness Assessment	Population assessed in grade 10	Connecticut State Department of Education EdSight
	Adult hypertension prevalence • Age-adjusted • Non-age-adjusted	Number of adults 18 and older diagnosed with hypertension.	Population age 18 or older.	Electronic Health Records
	Adult diabetes prevalence • Age-adjusted • Non-age-adjusted	Number of adults 18 and older diagnosed with diabetes.	Population age 18 or older.	Electronic Health Records
	Congestive heart failure prevalence	Number of adults 18 and older diagnosed with congestive heart failure.	Population age 18 or older.	Electronic Health Records
	Coronary heart disease prevalence	Number of adults 18 and older diagnosed with coronary heart disease	Population age 18 or older.	Electronic Health Records
	Stroke prevalence	Number of adults 18 and older diagnosed with stroke	Population age 18 or older.	Electronic Health Records
	Chronic kidney disease prevalence	Number of adults 18 and older diagnosed with chronic kidney disease	Population age 18 or older.	Electronic Health Records
	Rheumatoid Arthritis/Osteoarthritis prevalence	Number of adults 18 and older diagnosed with rheumatoid arthritis or osteoarthritis	Population age 18 or older.	Electronic Health Records
Future Secondary Measures	*Activity levels*	*Potentially: Number of steps walked by adults*	*Total adult population*	*Fitness Tracker*

Domain	Provisional Measure	Numerator Description	Denominator Description	Source
	Prevalence of hunger	*TBD*	*TBD*	*TBD*

APPENDIX 2. PLANNING PROCESS APPROACH AND STAKEHOLDER ENGAGEMENT

Note: This appendix reflects stakeholder engagement as of 11/21/18. Please note that the lists of groups/individuals engaged may not be exhaustive.

The Health Enhancement Community design and planning process is informed and driven by community input from a diverse set of multi-sector stakeholders across Connecticut. The community and stakeholder engagement principles deployed throughout the planning process included:

- Bi-directional communication and feedback with stakeholders where HEC components and recommendations were continuously vetted and adjusted
- In-person meetings, follow-up meetings, webinars, emails, and public posting of information
- Input from a broad array of stakeholders—including but not limited to community members, existing collaboratives, health care providers, employers, community organizations, local government representatives, and others—as active participants and co-creators of the ultimate HEC approach
- An emphasis on obtaining input from community members whose lived experience within communities must be a key factor shaping what HECs are and do
- An emphasis on health equity and garnering input from those who represent or serve populations with health disparities
- Broad dissemination of HEC concepts using easy-to-understand messaging
- Review and consideration of prior input and recommendations available from other related advisory groups, and relevant reports and resources

The HEC strategy is an initiative of the Connecticut State Innovation Model (SIM), which is jointly implemented by the newly established Office of Health Strategy (OHS) and the Department of Public Health (DPH). Connecticut received SIM funding from the Center for Medicare and Medicaid Innovation (CMMI) in 2014. This phase of the SIM HEC planning process initiated in February 2018, and consulting firm Health Management Associates was hired to work with the SIM Program Management Office and the SIM Population Health Council to develop an innovative, actionably strategy to support and enable HECs.

A critical element of the planning process has been to build a strong foundation that enables the HEC strategy to be successful. To do this, it was essential to design the HEC strategy based on perspectives and considerations from stakeholders across Connecticut whose communities will benefit from HECs, and/or who may be involved in implementing and sustaining HECs. To that end, the planning process has incorporated stakeholder input and thought leadership at every juncture and on all key HEC design topics. This was achieved through:

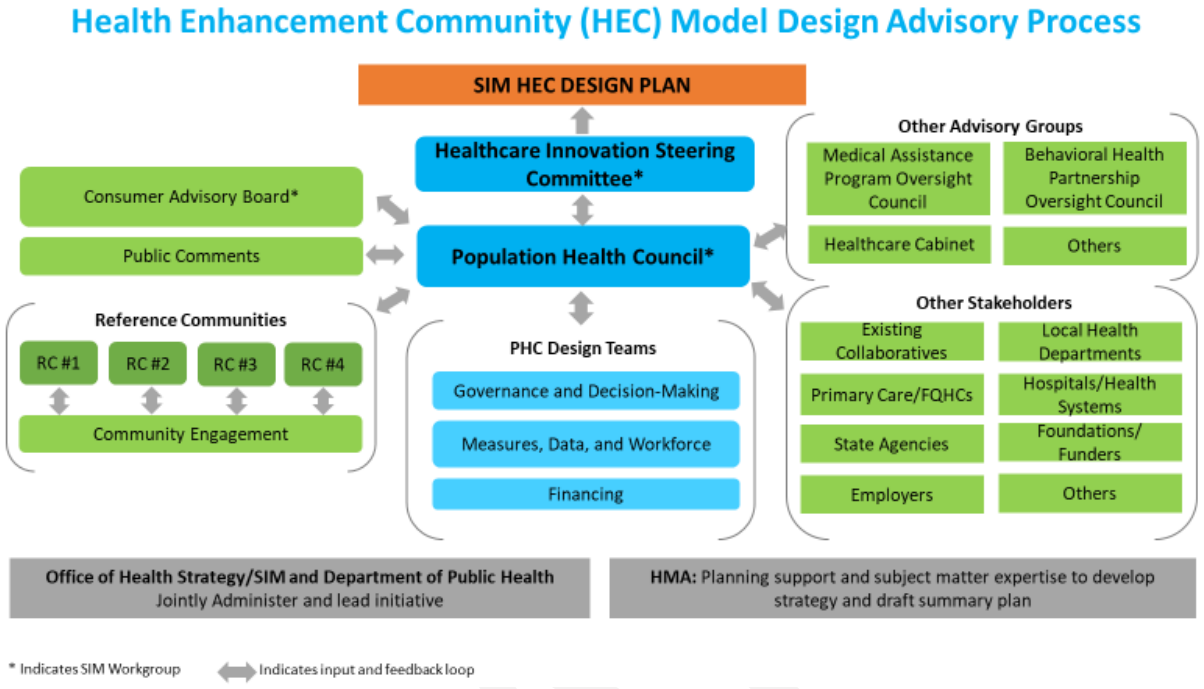
- Working with **Reference Communities**, which are existing community health collaboratives in Hartford, New London, Norwalk, and Waterbury with which the state contracted to engage in an in-depth framework design process from July to November 2018. The Reference Communities

provided recommendations on most aspects of the framework. The Reference Communities collectively include more than 100 organizations and have broad representation, including the following sectors: academic institutions; associations; community members; community organizations; consumer advocacy groups; employers and businesses; government; health care systems and providers; health plans/payers; investors, housing organizations; philanthropic organizations; public health agencies; and social service organizations. (Additional detail on the Reference Communities and how their input contributed to the framework are in Section 5 of this Technical Report.)

- Engagement of **community members**, through direct engagement by the Reference Communities and Health Management Associates, the consulting firm working with the state. The engagement process included meetings and facilitated discussion sessions with existing community groups and at existing events, community conversations and mini-focus groups, brief in-person surveys, and key informant interviews. Healthcare Innovation Steering Committee (HISC) members and the Consumer Advisory Board (CAB) also provided input on the community engagement process for developing the framework and on future engagement as HECs form and operate.
- Meetings with stakeholder groups such as the **Population Health Council** and Design Teams, the **HISC**, the **CAB**, the **Connecticut Health Improvement Coalition SHIP Advisory Council,** the **Medical Assistance Program Oversight Council (MAPOC),** the **Healthcare Cabinet**, the **Health IT Advisory Council**, and the **Behavioral Health Partnership Oversight Council** to get input on the HEC framework and key elements.
- **Interviews and meetings** with specific stakeholder organizations and individuals across multiple sectors.
- **Targeted webinars** to share information and seek input from local health departments, Federally Qualified Health Centers, School-Based Health Centers, and other state agencies in Connecticut.
- A broad **communication strategy** that included dissemination of information through SIM e-newsletter updates and **public posting** of materials and webinars on the SIM website.

The figure below shows the planning process framework for stakeholder input and multi-directional information sharing.

Figure 25. Multidirectional Flow of Information and Stakeholder Input to Support Decision-Making



This report is the culmination of this phase of the planning process and articulates the SIM Population Health Council's HEC recommendations to the Healthcare Innovation Steering Committee. The Population Health Council, the Office of Health Strategy, and the Department of Public Health are grateful for the significant and ongoing input and involvement of all the organizations and individuals who have contributed to the HEC framework.

Below is a listing of key stakeholder meetings and stakeholder groups that have been involved in the design process.

Key Stakeholder Meetings – This list will be updated with additional meetings that occur.

Key Stakeholder Engagement Meetings	
March 8, 2018	Healthcare Innovation Steering Committee Meeting
March 29, 2018	Population Health Council Meeting
April 24, 2018	Connecticut Health Improvement Coalition: SHIP Advisory Council Meeting
April 26, 2018	Population Health Council Meeting
May 31, 2018	Population Health Council Meeting
May 31, 2018	Connecticut Hospital Association Community Health Coordinators Meeting
June 7, 2018	Reference Community Deep Dive Session #1 with Health Improvement Collaborative of Southeastern Connecticut
June 11, 2018	Reference Community Deep Dive Session #1 with Greater Waterbury Health Partnership
June 12, 2018	Reference Community Deep Dive Session #1 with Greater Norwalk Health Improvement Collaborative
June 12, 2018	Consumer Advisory Board Meeting

June 14, 2018	Healthcare Innovation Steering Committee Meeting
June 21, 2018	Population Health Council Webinar on Value-Based Payment Design to Support HECs
June 28, 2018	Population Health Council Meeting
July 10, 2018	Reference Community Deep Dive Session #1 with North Hartford Triple Aim Collaborative
July 10, 2018	Consumer Advisory Board Meeting
July 12, 2018	Healthcare Innovation Steering Committee Meeting
July 17, 2018	Connecticut Health Improvement Coalition: SHIP Advisory Council Meeting
July 19, 2018	PHC Design Team #3, Webinar #1: Governance and Decision-Making
July 20, 2018	PHC Design Team #1, Webinar #1: HEC Interventions, Measures, Data, Workforce PHC Design Team #2, Webinar #1: HEC Financing
July 23, 2018	Reference Community Deep Dive Session #2 with Greater Waterbury Health Partnership
July 25, 2018	Reference Community Deep Dive Session #2 with North Hartford Triple Aim Collaborative
July 26, 2018	Population Health Council Meeting
July 26, 2018	Reference Community Deep Dive Session #2 with Health Improvement Collaborative of Southeastern Connecticut
July 30, 2018	Reference Community Deep Dive Session #2 with Greater Norwalk Health Improvement Collaborative
July 30, 2018	PHC Design Team #2, Webinar #2: Financing
July 31, 2018	PHC Design Team #1, Webinar #2: Interventions, Measures, Data, Workforce
August 1, 2018	PHC Design Team #3, Webinar #2: Governance and Decision-Making
August 8-9, 2018	Reference Community Follow-Up Webinars with North Hartford Triple Aim Collaborative
August 30, 2018	Reference Community HEC Data and Information Technology Infrastructure Webinar
September 5, 2018	Reference Community HEC Financing and Funds Flow Webinar
September 17, 2018	Healthier Greater New Haven Partnership Collaborative Webinar
September 18, 2018	Local Health Departments Webinar
September 25, 2018	Bridgeport Primary Care Action Group Collaborative Webinar
September 25, 2018	State Agency Webinar
September 27, 2018	Population Health Council Meeting
October 4, 2018	PCMH+ Participating Entities Meeting
October 9, 2018	Population Health Council Webinar
October 10, 2018	CT Behavioral Health Partnership Oversight Council Meeting
October 11, 2018	Clifford Beers – Parents Group Meeting
October 11, 2018	Healthcare Innovation Steering Committee Meeting
October 18, 2018	Community Health Center Association of Connecticut Webinar
October 23, 2018	Connecticut Association of School-Based Health Centers Webinar
October 23, 2018	Northwest Cares Meeting
October 25, 2018	PHC Design Team #1, Webinar #3: Measures
October 29, 2018	Population Health Council Webinar

November 1, 2018	Population Health Council Meeting
November 6, 2018	Consumer Advisory Board Meeting
November 8, 2018	Christian Community Action HEALTH Group Meeting
November 9, 2018	Council on Medical Assistance Program Oversight Meeting
November 13, 2018	Healthcare Cabinet Meeting
November 15, 2018	Health IT Advisory Council Meeting
November 15, 2018	Healthcare Innovation Steering Committee Meeting
November 29, 2018	**Population Health Council Meeting (planned)**
December 4, 2018	**Funders Roundtable Discussion (planned)**
December 13, 2018	**Healthcare Innovation Steering Committee Meeting (planned)**

Stakeholder Groups

Community Members

Information provided by community members from the SIM Listening Sessions and State Health Improvement Plan engagement influenced the selection of the priorities and other aspects of the model. The Consumer Advisory Board had provided input on the community engagement process so that the process meaningfully captures input of community members, the community member input helps shape the HEC design, and community members hear how their input shaped the design.

Reference Communities also either included community members in the planning activities and/or did outreach to get their input on the HEC design. Community residents provided meaningful feedback that influenced or validated the design of the model and/or will inform the planning and implementation of HECs and the HEC Initiative.

Community Member Engagement Summary

As part of the HEC Initiative, Connecticut worked with four existing community collaboratives in Hartford, New London, Norwalk, and Waterbury. These "Reference Communities" gave input and feedback on the development of the HEC framework. Part of the Reference Communities' work was to get direct community member feedback. Reference Communities have been part of the HEC framework design process since May 2018. Each Reference Community did a final report that includes the input they got from the community.

Health Management Associates, the HEC Community Initiative consultant, also met with community members Clifford Beers Clinic's Parents Group and the Christian Community Action HEALTH Group to get feedback on the HEC framework.

Table 14. Examples of How Community Member Feedback Influenced the HEC Draft Framework

What Community Members Said:	How it Influenced the HEC Design:
A community member said that the model should the adopt the community involvement philosophy of "nothing for us without us."	The draft model includes locally owned and directed community groups selecting and leading interventions about the things that matter most to them in their communities.

Community advocates also gave feedback about how this could happen.	The draft model also includes a governance group that will include community members, including in decision making.
Many community members model should include multiple ways to meaningfully engage community members, including: • Funds specifically for community engagement • Requirement of having community members at every table • Multiple roles to collect outreach information and bring that back/represent to group • Support for capacity building for community leaders and members • Meetings and other types of engagement after hours and in easy-to-get-to community locations • Providing child care, transportation, food, etc.	These were included in the draft model. *We did hear some disagreement among stakeholders about payment and food.*
Some community members were frustrated and angry at how they have previously been included by not meaningfully involved or listened to on governance bodies or advisory committees. They want to be part of planning this initiative and those structures but only if it is real and their expertise about their communities is a valued part of decision making.	*Re-engaging this group to provide more feedback on how the state can best ensure real involvement.*
Many community members said they were interested and enthusiastic about the priority areas: 1) Child well-being and 2) Healthy weight/physical fitness	This was a validation of the priorities in the draft model.
Many community members were eager to talk about what they think the root causes of poor health are in their communities and what should be done about them. Examples of root causes they talked about: • Lack of or not enough family/social supports • People existing on "survival income" not "living income" • Parks, sidewalks, and streets that make it difficult to get healthy • Housing instability and lack of access to affordable housing • Lack of access to transportation Example of an intervention a parent's group discussed: A group pf parents talked how easy it was to get unhealthy food and how hard it was to get healthy food, especially if	The draft model has community groups identifying root causes of poor health, what matters to them, and what they want to do about them and then leading interventions.

corner stores are the easiest place to shop. They talked about how they would redesign the store, including putting health, fresh food upfront and making healthy food cost less. They also said they would like to have a mobile grocery store that comes to their community and has good prices.	
A community member gave an example of a child who recently drowned to illustrate that you can't just do one thing and think you are going to solve the problem (like try to hire more lifeguards). You have to implement several related things to solve the problem and use it as a way to make other things better, including addressing programs and policies in schools for more kids learn how to swim, create more employment opportunities for kids through becoming lifeguards, and challenging the cultural norm that says Black kids don't swim.	This was a validation of the draft intervention framework, which included policy, systems, programs, and cultural norm interventions.
Some community members talked about how many serious issues there are in their communities and how this initiative has to have real solutions to things like drugs, violence, and lack of opportunities for formerly incarcerated.	This was a validation of the child well-being health priority, which includes all of those issues.
One community member said the state should define the geographies or be part of making the decisions otherwise it will take too long for collaboratives to decide.	This influenced the HEC and state process for defining geography together with some requirements.
Some community members said they should be involved in designing interventions. • They gave an example of a curriculum they are starting to create called Partnering with Parents. That curriculum is to teach service organizations how to work with parents more effectively and respectfully. They also shared a document they had created that gave guidance for working with parents and balancing power between parents and service providers.	That curriculum was used in the draft model as an example of community member-lead interventions and a cultural norm change for organizations. The information in the document was used to add to the community involvement aspect of the draft model.
Parents in the Parents Group said that they are frustrated by how difficult it can be to access existing programs, especially as a family. • One parent said she had one child who was 4 years old and another who was 8. One child was eligible for one program, but it was only open to children over 6 years old. She struggled to find a place for her younger child, which was difficult because of transportation and cost issues. The parents said they	This influenced how the draft model described the connecting existing interventions to create a more seamless experience for community members.

wish they programs would work together to make it easier for parents to get the help they need.	
One community member talked about how important it is to have Community Health Workers doing this work in communities.	Community Health Workers are an important part of the initiative.
Some community members said that community members may not be accessing existing funding or resources because they aren't aware of them or services weren't coordinated coordination of services or easy to use.	The draft model recommends using, linking, or improving what is already in place and not just adding new interventions.

Reference Communities

The four Reference Communities collectively include more than 100 member organizations, with broad representation including the following sectors:

- Associations
- Community members
- Community organizations
- Consumer advocacy groups
- Education/academic institutions
- Employers and businesses
- Government
- Health care services/infrastructure
- Health plans/payers/insurers
- Investors, philanthropy organizations, foundations
- Housing organizations
- Public Health services/infrastructure
- Social services organizations

Membership for each Reference Community is provided below. For additional detail on Reference Communities and their input and engagement throughout this process, see Section 5 of this report.

Reference Community: Greater Norwalk Health Improvement Collaborative Members

American Heart Association	Norwalk Community Health Center
AmeriCares Free Clinic	Norwalk Grows
Campbell's Soup Company	Norwalk Office of Early Childhood
City of Norwalk, Health Department	Norwalk Public Library
Connecticut Counseling Centers	Norwalk Public Schools
Day Street Community Health Center	Pepperidge Farm
Fairfield Health Department	Riverbrook Regional YMCA
Grade A ShopRite	Sacred Heart University
Liberation Programs	Stepping Stones Museum for Children
Mountainside Treatment Center	United Way of Coastal Fairfield County
Norwalk ACTS	Western Connecticut Health Network/Norwalk Hospital
Norwalk Community College	Westport Family YMCA

Reference Community: Greater Waterbury Health Partnership Members

American Heart Association	Physician One Urgent Care
AmeriCorps/FoodCorps	Pomperaug District DPH
Benchmark Quality	Salute Homecare
Boys & Girls Club	St. Mary's Hospital/ Trinity Health of New England
Brass City Harvest	St. Vincent DePaul Mission
Bridge To Success	StayWell Health Center
Central Naugatuck Valley Regional Action Council	TEAM
Chesprocott Health District	UConn Waterbury
Cigna	Unite Here Health
City of Waterbury	United Way of Greater Waterbury
Community Health Center, Inc.	Value Options/Beacon Health
ConnectiCare	Visiting Nurse Association
Connecticut Community Foundation	Waterbury Department of Public Health
Connecticut Department of Mental Health & Addiction Services (DMHAS)	Waterbury Health Access Program
Connecticut Department of Public Health (DPH)	Waterbury Hospital/ Prospect Medical Holdings, Inc.
Health 360/NWCT AHEC	Waterbury Housing Authority
Heart Center of Greater Waterbury	Waterbury Neighborhood Council
Independence Northwest	Waterbury Public Schools
Malta House of Care	Wellmore Behavioral Health
Melissa's Project	Wellspring
Naugatuck Valley Community College	Western Connecticut Area Agency on Aging
Naugatuck Valley Project	Western Connecticut Mental Health Network
New Opportunities	YMCA

Reference Community: Health Improvement Collaborative of Southeastern Connecticut Members

Alliance for Living	New London Branch National Association for the Advancement of Colored People
Catholic Charities	New London Community and Campus Coalition
Child and Family Agency of SECT	New London County Food Policy Council
City of New London	New London Parks and Recreation
Community Foundation for Eastern Connecticut	New London Police Department
Community Health Center, Inc.	Partners for Healthy Communities
Connecticut College	Sound Community Services
Connecticut Community for Addiction Recovery	Southeastern Council on Alcohol and Drug Dependency
Connecticut Legal Services	Southeastern Connecticut Council of Governments
Eastern Area Health Education Center	Southeastern Connecticut Enterprise Region

FRESH New London	Southeastern Mental Health Authority
Groton Parks and Recreation	Thames Valley Council for Community Action, Inc.
Health and Technology Vector Inc	The Connection
Hispanic Alliance	United Action CT
Homeless Hospitality Center	United Community and Family Services
L+M Hospital/ Yale New Haven Health	Visiting Nurses Association of SECT
Ledge Light Health District	

Reference Community: North Hartford Triple Aim Collaborative Members

City of Hartford Health and Human Services	North Hartford Promise Zone/ City of Hartford Office of the Mayor
Connecticut Children's Medical Center	Saint Francis Hospital and Medical Center/Trinity Health Of New England
Connecticut Health Foundation	UConn
Hartford HealthCare	United Way of Central and Northeastern Connecticut
North Hartford NRZ resident liaison	Wellville

Table 15. Reference Community Engagements as of 10/25/18

Reference Community	Date	Event, Venue, Audience	Attendees/ Residents	Presenter	Demographic Breakdown (if captured)
Hartford	7/10/18	**Event:** CT HEC Deep Dive 1 **Venue:** St. Francis Hospital	26 (5 resident advocates)	Hosted by Collaborative, HMA	Race/Gender Breakdown: 5-African American women 1-African American man 2-Latina women 2-White men 16-White women Ages: 26-18 to 64
Hartford	7/25/18	**Event:** CT HEC Deep Dive 2 **Venue:** Urban League of Greater Hartford	14 (4 resident advocates)	Hosted by Collaborative, HMA	Race/Gender Breakdown: 2-Latina women 2-White men

Reference Community	Date	Event, Venue, Audience	Attendees/ Residents	Presenter	Demographic Breakdown (if captured)
					3-African American women 1-African American man 6-White women Ages: 14-18 to 64
Hartford	8/8/18	**Event:** CT HEC Stakeholder Feedback Session 1 **Venue:** Webinar	5	Hosted by Collaborative, HMA	Unknown
Hartford	8/9/18	**Event:** CT HEC Stakeholder Feedback Session 2 **Venue:** Webinar	3	Hosted by Collaborative, HMA	Unknown
Hartford	9/10/18	**Event:** Community Member Survey **Venue:** Charter Oak Health Center	9 (all residents)	Collaborative intern	Race/Gender Breakdown: 5-Latinos (unknown gender) 4-African American (unknown gender) Ages: 9-18 to 64 Language: 5 Spanish Speakers
Hartford	9/10/18	**Event:** Community Member Survey **Venue:** Gengras Clinic, St. Francis Hospital	8 (all residents)	Collaborative intern	Race/Gender Breakdown: 3-Latinos (unknown gender) 3-African American (unknown gender) 1-White (unknown gender)

Reference Community	Date	Event, Venue, Audience	Attendees/ Residents	Presenter	Demographic Breakdown (if captured)
					Ages: 7-18 to 64 Language: 3 Spanish Speakers
Hartford	9/14/18	**Event:** Community Member Survey **Venue:** Wheeler Clinic	6 (all residents)	Collaborative intern	Race/Gender Breakdown: 3-Latinos (unknown gender) 2-African American (unknown gender) 1-White (unknown gender) Ages: 6-18 to 64
Norwalk	7/6/18	**Event:** Norwalk Hospital Community Health Committee (CHC) **Venue:** Norwalk Hospital **Audience:** CHC Members (Hospital Trustees, Hospital Staff, Community Partners in philanthropy, wellness, and health care)	16 (unknown # of residents)	Theresa Argondezzi	Did not collect information on participants' race, ethnicity, gender, or age. Did outreach to groups to talk to people who are representative of Norwalk's populations.
Norwalk	8/12/18	**Event:** Healthy for Life Project Partners Meeting **Venue:** Norwalk Health Department **Audience:** Community partners collaboratively promoting healthy	14 (~40% area residents)	Theresa Argondezzi	

Reference Community	Date	Event, Venue, Audience	Attendees/ Residents	Presenter	Demographic Breakdown (if captured)
		eating and physical activity as part of Greater Norwalk Community Health Improvement Plan (Health Department, YMCA, School Garden Organization, United Way, Norwalk Office of Early Childhood, Norwalk ACTS, Urgent Care Center, Food Retailer, Campbell's Healthy Communities, Children's Museum, Library, others)			
Norwalk	8/28/18	**Event:** Health Enhancement Communities Update for Norwalk Leadership **Venue:** Norwalk Health Department **Audience:** Norwalk Mayor, Assistant to the Mayor, Norwalk Board of Health Members	4 (3 residents)	Theresa Argondezzi	
Norwalk	9/12/18	**Event:** Help Me Grow networking meeting **Venue:** Ben Franklin School/Family & Children's Agency Offices **Audience:** Community providers representing education, health, and social services	41 (~50% area residents)	Theresa Argondezzi	

Reference Community	Date	Event, Venue, Audience	Attendees/ Residents	Presenter	Demographic Breakdown (if captured)
		(home visitors, family advocates, nurses, social workers, parent group facilitators, nutritionists, outreach workers, case managers)			
Norwalk	9/18/18	**Event:** Norwalk ACTS Community Convening **Venue:** Stepping Stones Museum for Children **Audience:** Member agencies of Citywide Collective Impact Agency with a mission to help children thrive from cradle to career. Represented education, housing, business, health, social/emotional learning, legislators, early childhood, philanthropy, others.	46 (~50% area residents)	Theresa Argondezzi	
Norwalk	10/2/18	**Event:** Norwalk Health Department Emergency Response Team meeting **Venue:** Norwalk Health Department **Audience:** Diverse group of adults living/working in Norwalk and New Canaan areas who volunteer with the Norwalk Health Department. Various ages, professions,	21 (~90% area residents)	Theresa Argondezzi	

Reference Community	Date	Event, Venue, Audience	Attendees/ Residents	Presenter	Demographic Breakdown (if captured)
		and backgrounds (some medical, but many non-medical).			
Norwalk	*9/21 – 10/19*	**Event:** Online survey **Audience:** Sent via email blasts to Chamber of Commerce members and Norwalk ACTs Members. Posted on Norwalk Health Department Facebook page and local news blog. No advertising or incentives to complete the survey were provided.	24	*n/a*	
New London	7/31/18	**Event:** "Setting the Table" **Venue:** FRESH NL Urban Farm in New London **Sponsors:** Ledge Light Health District, FRESH NL, RD86, United Way of Southeastern Connecticut, New London County Food Policy Council	50 (all community residents)	FRESH NL & LLHD	Did not collect information on participants' race, ethnicity, gender, or age. Indicated that people they spoke with were representative of New London's populations.
New London	8/11/18	**Event:** "Setting the Table" **Venue:** FRESH NL Urban Farm in New London **Sponsors:** Ledge Light Health District, FRESH NL, RD86, United Way of Southeastern Connecticut, New	20 (all community residents)	FRESH NL & LLHD	

Reference Community	Date	Event, Venue, Audience	Attendees/ Residents	Presenter	Demographic Breakdown (if captured)
		London County Food Policy Council			
New London	9/13/18	**Event:** RSVP Volunteer Recognition Luncheon **Venue:** Filomena's Restaurant in Waterford	6 (all community residents)	Megan Brown, TVCCA	
New London	9/24/18	**Event:** "Setting the Table" **Venue:** RD86 in New London **Sponsors:** Ledge Light Health District, FRESH NL, RD86, United Way of Southeastern Connecticut, New London County Food Policy Council	30 (all community residents)	LLHD	
New London	10/11/18	**Event:** Parent Engagement Group **Venue:** TVCCA Head Start	1 (community resident)	Megan Brown, TVCCA	
Hartford	7/10/18	**Event:** CT HEC Deep Dive 1 **Venue:** St. Francis Hospital	26 (5 resident advocates)	Hosted by Collaborative, HMA	Race/Gender Breakdown: 5-African American women 1-African American man 2-Latina women 2-White men 16-White women Ages: 26-18 to 64

Reference Community	Date	Event, Venue, Audience	Attendees/ Residents	Presenter	Demographic Breakdown (if captured)
Waterbury	9/6/18	**Event:** Yoelle Iglesis, ED, Madre Latina, Inc **Venue:** Key informant interview	1 (community resident/ organizational leader)	Alison Johnson	Latina
Waterbury	10/3/18	**Event:** Kim Kelly Myers, Housing Counselor, Neighborhood Housing Services of Waterbury **Venue:** Key informant interview	1 (community resident/ organizational leader)	Alison Johnson	

Population Health Council

Description: The Population Health Council is charged with developing a vision for improving Population Health in the context of payment, insurance and practice reforms, and community integration and innovation. The Council will leverage existing resources and build on the framework established in the State Health Improvement Coalition to advance population health planning and establish a long term public health strategy. The Council will focus on addressing root causes of disease and defining priorities based on burden of cost, reducing inequities and improving overall health. The Council will make recommendations regarding the establishment of Community Prevention Service Centers and the designation of Health Enhancement Communities.

Population Health Council meeting materials, presentations, and handouts provided throughout the HEC planning process, are available on its website: https://portal.ct.gov/OHS/SIM-Work-Groups/Population-Health-Council

Population Health Council Members

Craig Glover	Norwalk Community Health Center
Elizabeth Beaudin	Connecticut Hospital Association
Elizabeth Torres	Bridgeport Neighborhood Trust
Frederick Browne	Griffin Hospital
Garth Graham	Aetna Foundation
Hayley Skinner	ProHealth Physicians
Hugh Penney	Yale University
Hyacinth Yennie	Maple Avenue NRZ Group
Jeannette Weldon	Connecticut Health and Educational Facilities Authority
Lisa Honigfeld	Child Health and Development Institute
Lyn Salsgiver	Bridgeport Hospital
Martha Page	Hartford Food System
Patricia Baker	Connecticut Health Foundation
Rick Brush	Wellville

Steven Huleatt	West Hartford Bloomfield Health District
Susan Walkama	Wheeler Clinic
Tekisha Everette	Health Equity Solutions

Population Health Council Design Team #1: Interventions, Measures, Data, Workforce

Edith Karsky	Connecticut Access for Community Action
Hayley Skinner	ProHealth Physicians
Karen Siegel	Health Policy Fellow (Connecticut Voices for Children)
Katie Piwnica-Worms	Pediatrician & Healthy Policy Fellow at Yale School of Medicine
Lisa Hageman	Backus Hospital - Hartford HealthCare
Lisa Honigfeld	Child Health and Development Institute
Martha Page	Hartford Food System
Kate McEvoy	Connecticut Department of Social Services
Michelle James	Community Action Agency of Western CT
Rick Brush	Wellville
Supriyo Chatterjee	CHF Health Leadership Program, Former Fellow

Population Health Council Design Team #2: Financing

Deborah Monahan	Thames Valley Council for Community Action
Jeanette Weldon	Connecticut Health and Educational Facilities Authority
Karen Siegel	Health Policy Fellow (Connecticut Voices for Children)
Kate McEvoy	Connecticut Department of Social Services
Lyn Salsgiver	Bridgeport Hospital
Rick Brush	Wellville
Susan Walkama	Wheeler Clinic
Toni Hirst	New Opportunities

Population Health Council Design Team #3: Governance and Decision-Making

Amos Smith	Community Action Agency of New Haven
Craig Glover	Norwalk Community Health Center
Nancy Hamson	Yale New Haven Health System/Bridgeport Hospital
Pat Baker	Connecticut Health Foundation
Patrick McCormack	UNCAS Health District
Peter DeBiasi	The Access Agency
Rick Brush	Wellville
Roderick Bremby	Connecticut Department of Social Services
Susan Walkama	Wheeler Clinic

Healthcare Innovation Steering Committee

Description: The Healthcare Innovation Steering Committee (HISC) is a diverse, multi-stakeholder committee comprised of providers, consumers, advocates, health plans, and state agencies. The

Steering Committee is charged with providing oversight and guidance to the SIM Program Management Office and activities related to the implementation of the SIM Model Test Grant and the Connecticut Healthcare Innovation Plan. The Steering Committee is chaired by Lieutenant Governor Nancy Wyman.

HISC meeting materials, presentations, and handouts provided throughout the HEC planning process, are available on its website: https://portal.ct.gov/OHS/SIM-Work-Groups/Healthcare-Innovation-Steering-Committee

Healthcare Innovation Steering Committee Members

Alta Lash	United Connecticut Action for Neighborhoods
Anne Foley	Connecticut Office of Policy and Management
Bruce Liang	UConn School of Medicine
Catherine Abercrombie, State Representative	Connecticut House of Representatives
Deremius Williams	Anthem Blue Cross Blue Shield
Elsa Stone	CT Chapter, American Academy of Pediatrics
Frances Padilla	Universal Healthcare Foundation of CT
Jan VanTassel	Connecticut Legal Rights Project
Jeffrey Beadle	Windham Regional Community Council
Joseph Quaranta	Community Medical Group
Katharine Wade	Connecticut Insurance Department
Kristina Stevens	Connecticut Department of Children and Families
Mary Bradley	Pitney Bowes
Miriam Delphin-Rittmon	Connecticut Department of Mental Health & Addiction Services
Nancy Wyman, Committee Chair	Lieutenant Governor
Patricia Baker	Connecticut Health Foundation
Patrick Charmel	Griffin Hospital
Raul Pino	Connecticut Department of Public Health
Dr. Robert McLean	Connecticut Medical Group, LLC
Robin Lamott Sparks	The Coalition for New Britain's Youth
Roderick Bremby	Connecticut Department of Social Services
Shan Jeffreys	Access Health CT
Sharon Langer	Connecticut Voices for Children
Suzanne Lagarde	Fair Haven Community Health Center
Terry Gerratana, State Senator	Connecticut State Senate
Thomas Woodruff	Connecticut Office of the State Comptroller

State of Connecticut Consumer Advisory Board

Description: The mission of the Consumer Advisory Board (CAB) is to advocate for consumers and provide for strong public and consumer input in health care reform policies in Connecticut. The purpose of the Consumer Advisory Board is to ensure significant consumer participation in the planning and implementation process.

CAB meeting materials, presentations, and handouts provided throughout the HEC planning process, are available on its website: https://portal.ct.gov/OHS/SIM-Work-Groups/Consumer-Advisory-Board

State of Connecticut Community Advisory Board Members

Alan Coker	
Alice Ferguson	
Ann R. Smith	African Caribbean American Parents of Children with Disabilities, Inc.
Arlene Murphy (Co-Chair)	
Denise O. Smith	UCONN Health Disparities Institute
Jason Prignoli	
Jeffrey G. Beadle	Windham Regional Community Council
Kelly Ray	
Kevin Galvin (Co-Chair)	Small Business for a Healthy Connecticut
Linda Guzzo	
Nanfi Lubogo	PATH Parent to Parent/Family Voices of Connecticut, Connecticut Family to Family Health Information Center
Rev. Bonita Grubbs	Christian Community Action, Inc.
Robert Krzys	
Stephen Karp	National Assoc. of Social Workers – Connecticut Chapter
Terry Nowakowski	Partnership for Strong Communities
Theanvy Kuoch	National Cambodian-American Health Initiative, Khmer Health Advocates
Velandy Manohar, MD	

Connecticut Health Improvement Coalition: SHIP Advisory Council

Description: Established in January 2013, The Connecticut Health Improvement Coalition is a diverse partnership of local, regional, and statewide organizations and agencies that address public health from a variety of traditional and non-traditional perspectives. The implementation framework for the coalition is based on Healthy CT 2020: The Connecticut State Health Assessment (SHA) and Connecticut State Health Improvement Plan (SHIP). DPH provides a leadership role in convening coalition partners through 7 Action Teams and facilitates a collaborative process to successfully implement the SHIP. The strength of the Coalition is the active participation of partners from across the state working together to connect health improvement efforts, leverage activities, maximize resources, and build upon existing infrastructure.

Meeting materials are available on its website: https://portal.ct.gov/DPH/State-Health-Planning/State-Health-Assessment--Plan-2012/State-Health-Improvement-Planning-Coalition

Connecticut Health Improvement Coalition: SHIP Advisory Council Members

Andrea Boissevain	Connecticut Association of Directors of Health
Brenetta Henry	Consumer Representative
Colleen Gallagher	Department of Correction
Elaine O'Keefe	Yale School of Public Health

Elizabeth Beaudin	Connecticut Hospital Association
George McDonald	Consumer Representative
Glenn Cassis	Multicultural Health Partnership
James Maloney	Connecticut Institute for Communities, Inc.
Janet Storey	CT Dept. of Mental Health and Addiction Services
John Frassinelli	Department of Education
Jordana Frost	March of Dimes
Judy Dicine	Chief State's Attorney Office
Kathi Traugh	Connecticut Public Health Association
Lynne Ide	Universal Health Care Foundation
Lynne Weeks	Connecticut Association of School Based Health Centers
Marcus McKinney	Trinity Health-New England
Mark Abraham	DataHaven
Mary Boudreau	Connecticut Oral Health Initiative
Mehul Dalal	Department of Public Health
Nancy Yedlin	Donaghue Foundation
Patricia Baker	Connecticut Health Foundation
Patrick McCormack	Uncas Health District
Phyllis DiFiore	Department of Transportation
Raul Pino	Department of Public Health
Rob Zavoski	Department of Social Services
Robyn Anderson	Advanced Behavioral, Inc.
Robyn Gulley	North Central Area Agency on Aging
Scott Sjoquist	Mohegan Tribal Health
Shawn Lang	AIDS CT
Terry Nowakowski	Partnership for Strong Communities
Yvette Bello	Hartford Foundation for Public Giving

Other Stakeholders

This list may not be exhaustive. It will continue to be updated with additional stakeholders engaged.

Others who contributed to, informed, and/or provided input into various aspects of the HEC design and planning process include the following.

Alan Fontes, UConn AIMS – Analytics and Information Management Solutions	CT Office of Health Strategy
Center for Medicare and Medicaid Innovation	CT Office of the State Comptroller
Charlie Slaughter, CT Department of Children and Families	Data Across Sectors for Health (DASH)
Connecticut Hospital Association; Connecticut Hospital Association Community Health Coordinators	Eleanor Michael, Multi-System Trauma Informed Collaborative (MSTIC)

CT American Academy of Pediatrics Executive Committee	General Dynamics Electric Boat
CT Association for Community Action (CAFCA)	Jenna Lupi, SIM Community Health Worker Advisory Committee
CT Department of Corrections	Marcus Smith, Healthy Homes Program
CT Department of Public Health	Nancy Trout, Connecticut Children's Medical Center
CT Department of Social Services, Division of Health Services	Stew Leonard's
CT Health and Housing Stability Workgroup	Susan Nappi, United Way of Greater New Haven
CT Health Foundation	Vita Health and Wellness District
CT Health IT Officer Allan Hackney	Yale-Griffin Prevention Research Center
CT Health IT PMO	

Stakeholders Engaged – Summary Unduplicated List

This list may not be exhaustive. It will continue to be updated with additional stakeholders engaged.

Below is a summary unduplicated list of stakeholder entities/organizations engaged, including the stakeholder groups listed above. (Individual members and member organizations are not listed below.)

Bridgeport Primary Care Action Group Collaborative	Connecticut Office of Policy and Management
Center for Medicare and Medicaid Innovation	Connecticut Office of the State Comptroller
Christian Community Action HEALTH Group	Consumer Advisory Board
Clifford Beers – Parents Group	Council on Medical Assistance Program Oversight (MAPOC)
Community Health Center Association of Connecticut (CHCACT)	Data Across Sectors for Health (DASH)
Connecticut American Academy of Pediatrics Executive Committee	General Dynamics Electric Boat
Connecticut Association for Community Action (CAFCA)	Health IT Advisory Council
Connecticut Association of School-Based Health Centers	Healthcare Cabinet
Connecticut Behavioral Health Partnership Oversight Council	Healthcare Innovation Steering Committee
Connecticut Children's Medical Center	Healthier Greater New Haven Partnership Collaborative
Connecticut Department of Children and Families	Healthy Homes Program
Connecticut Department of Corrections	Local Health Departments
Connecticut Department of Public Health	Multi-System Trauma Informed Collaborative (MSTIC)
Connecticut Department of Social Services, Division of Health Services	Northwest Cares

Connecticut Health and Housing Stability Workgroup	PCMH+ Participating Entities
Connecticut Health Foundation	Population Health Council and Design Teams
Connecticut Health Improvement Coalition: SHIP Advisory Council	Reference Communities (4)
Connecticut Health IT Officer	SIM Community Health Worker Advisory Committee
Connecticut Health IT PMO	Stew Leonard's
Connecticut Hospital Association	UConn AIMS – Analytics and Information Management Solutions
Connecticut Hospital Association Community Health Coordinators	United Way of Greater New Haven
Connecticut Office of Early Childhood	Vita Health and Wellness District
Connecticut Office of Health Strategy	Yale-Griffin Prevention Research Center

APPENDIX 3. REFERENCE COMMUNITY ENGAGEMENT FRAMEWORK

The following interrelated topics and questions guided the Reference Community engagement process.

Topic	Questions that will be answered in partnership between the reference communities and the state *If your Collaborative were to enter into this demonstration…*	What will enable us to answer that question?	After we answer the questions, what will we need to have
Community Overview	What do we need to know about your community to provide context for this work?	Data and information collected and presented by the Collaborative on community characteristics and current and prior efforts, including from community health needs assessments, focus groups, listening sessions, surveys, etc. Data and information provided by the State and consultants on community characteristics. Examples from SMEs	Synthesis of key community characteristics and current and prior efforts
Health Improvement Priorities	What are the biggest health problems that you would prioritize for the next 3, 5, and 10 years?	A process to assess and pick priorities using criteria such as: • Is the problem preventable? • How many people in your community are directly or indirectly effected? • Is problem or risks associated with the problem increasing? • How bad are the health outcomes of the problem? • How costly are the poor outcomes and who pays those costs?	3-5 priorities by timeframe

Topic	Questions that will be answered in partnership between the reference communities and the state *If your Collaborative were to enter into this demonstration…*	What will enable us to answer that question?	After we answer the questions, what will we need to have
		• Are their evidence-informed strategies that show good outcomes or promise of good outcomes? • Can our collaborative can do something to improve outcomes and reduce costs? • Can make significant improvements in 3, 5, and 10 years? • Are their existing resources available to support solutions? • How likely is it that we can sustain solutions with existing resources? • How likely is it that we can sustain solutions with new lasting resources? • What interests community members the most? Data and information from the Collaboratives, the State, and consultants from community needs assessments, Community Health Improvement Plans, Department of Population Health data (BRFSS), national reports (e.g., 500 cities report), All-Payer Claims Database, etc. New data and information from community focus groups, listening sessions, surveys, etc.	

Topic	Questions that will be answered in partnership between the reference communities and the state *If your Collaborative were to enter into this demonstration…*	What will enable us to answer that question?	After we answer the questions, what will we need to have
Root Causes	What are the biggest drivers of the above health problems in your community?	Data and information from the Collaboratives, the State, and consultants from community needs assessments, Community Health Improvement Plans, Department of Population Health data (BRFSS), Quality Improvement tools, local reports, curated evidence-based literature (from State, local health departments, and SMEs) New data and information from community focus groups, listening sessions, etc.	1-3 root causes per priority
Health Improvement Strategies	What are the evidence-informed strategies that would be undertaken to address the root causes?	Community Health Improvement Plans, existing local initiatives, curated resources/options (from the State and SMEs) New information from community focus groups, listening sessions, etc.	2-3 strategies per root cause
Target Population	What are the populations that you will target your strategies to achieve the expected outcomes	Community Health Improvement Plans, existing local initiatives, curated resources/options (from the State and SMEs) New information from community focus groups, listening sessions, etc.	Target populations per strategy
Activities	What are the activities that would support each strategy?	Community Health Improvement Plans, existing local initiatives, curated resources/options (from the State and SMEs)	2-3 activities per strategy

Topic	Questions that will be answered in partnership between the reference communities and the state *If your Collaborative were to enter into this demonstration…*	What will enable us to answer that question?	After we answer the questions, what will we need to have
Existing Resources	What existing resources (e.g., funds, reimbursement, staff, infrastructure, etc.) could be leveraged to support implementing and sustaining the HEC infrastructure, strategies, and activities?	Scan of community resources and assets by organizations and source (municipal, state, private, etc.) Examples from other states (from State and SMEs)	Resource plan
Implement-ation Funds	How would the upfront funds be raised to implement the proposed HEC infrastructure, strategies, and activities?	Scan potential or committed implementation funds by source Examples from other states (from State and SMEs)	Financing plan for raising funds to support implementation
Sustainable Financing	What additional financial vehicles will be explored to sustain this effort?	Financing scope, including details of what will need to be sustained long term Scan of community sustainable financing options by source (municipal, state, private, etc.), including opportunities to braid or blend resources Examples from other initiatives (from State and SMEs) (e.g., social impact bonds, wellness trust)?	Financing plan for raising sustainable financing

Topic	Questions that will be answered in partnership between the reference communities and the state *If your Collaborative were to enter into this demonstration…*	What will enable us to answer that question?	After we answer the questions, what will we need to have
Accountability Management	How will strategies and activities be coordinated, managed, and monitored?	Management resources that leverage existing Collaborative infrastructure Examples from other initiatives and states (from State and SMEs)	Accountability framework and management plan
Tracking Progress	Which process and outcome measures would you track?	Current indicators being tracked Examples from other initiatives and states (from State and SMEs)	2-3 process measure per activity; 1-2 outcome measures per priority
Data and Qualitative Information	What data and qualitative information would you need to manage each activity and track progress and performance? *Note that data must be granular enough to assess progress on activities* What barriers will have to be overcome to sharing data?	Current local and state data assets Data from other sources (Data Haven, BRFSS, etc.) Information from community focus groups, listening sessions, surveys, etc. Examples from other initiatives and states (from State and SMEs)	Summary of activity specific data needs and potential solutions to overcome barriers
Key Partners	Which organizations would be responsible for what aspect of implementation?	Assessment of existing Collaborative engagement Examples from other initiatives and states (from State and SMEs)	Engagement plan describing which stakeholders would

Topic	Questions that will be answered in partnership between the reference communities and the state *If your Collaborative were to enter into this demonstration…*	What will enable us to answer that question?	After we answer the questions, what will we need to have
	Which stakeholders, sectors, and organizations would need to be represented on the Collaborative and in what way?		be involved and how
Partner Commitment	How will responsibility be shared? What would be needed to maintain commitment and engagement?	Local examples Matching strategies, activities, and other roles to specific partners Examples from other initiatives and states (from State and SMEs)	Proposed principles and strategies of commitment; agreement template
Community engagement	How would you engage community residents? How would you communicate progress?	Community focus groups, listening sessions, town hall meetings, and current communication methods	Engagement and communication plan
Partners Capacity	What additional capacity would be needed among partners to support implementation and HEC operations?	Assessment of current capacity vs. anticipated demand Existing capacity-building resources and infrastructure	Partner capacity plan

Topic	Questions that will be answered in partnership between the reference communities and the state *If your Collaborative were to enter into this demonstration…*	What will enable us to answer that question?	After we answer the questions, what will we need to have
Geographic Size	How large or small would the catchment area of the Collaborative have to be to make an impact and garner investments while still being able to manage the effort?	Granular data and information (from Collaborative and State) Assessment of partners, local assets, and current service areas demarcations	Outline of sufficient geographic boundaries
Collaborative Capacity	What is the additional capacity does the Collaborative need to coordinate and manage the HEC, implementation of strategies and activities, and funds administered by the Collaborative?	Assessment of gaps current capacity Examples from other initiatives and states (from State and SMEs)	Summary of capacity needed, including FTEs and roles
Governance	Would your governance model need to change? If so, how (e.g., nonprofit status)? Who would be the organization leading the effort (the backbone organization)?	Assessment of current governance structure Examples from other initiatives and states (from State and SMEs)	Governance model, proposed changes, and backbone organization

Topic	Questions that will be answered in partnership between the reference communities and the state *If your Collaborative were to enter into this demonstration…*	What will enable us to answer that question?	After we answer the questions, what will we need to have
Funds Distribution	How would the Collaborative govern and distribute the implementation funds? What principles should govern the distribution of sustainable financing?	Assessment of current fund distribution methods Examples from other initiatives and states (from State and SMEs)	Funds distribution model
Authority	Is the authority that currently exists within the Collaborative and among the partners sufficient to enable implementation? Is state designation needed?	Assessment of current authority Examples from other initiatives and states (from State and SMEs)	Summary of authority levers
Feasibility and Risks	How feasible is it for your region to do this? What are the risks and considerations that should be considered?	Assessment of part successes, barriers, and risks Examples from other initiatives and states (from State and SMEs)	Summary of risks, mitigation strategies, and feasibly analysis
Other Considerations and New Ideas	What would you do differently from what you are doing now	TBD	TBD

Topic	Questions that will be answered in partnership between the reference communities and the state *If your Collaborative were to enter into this demonstration…*	What will enable us to answer that question?	After we answer the questions, what will we need to have
	that was not captured in the above? What are new ideas that the State should consider in relation to this demonstration?		

APPENDIX 4. CHILD WELL-BEING INTERVENTION EXAMPLES

This Appendix provides examples of child well-being interventions that Health Enhancement Communities may choose to implement. This list includes interventions that focus on pre-birth to age 8 years as well interventions which promote protective factors for caretakers or potential caretakers meeting characteristics correlated with the presence of adverse childhood experiences. This list is for illustrative purposes and will continue to evolve. A full menu of options will be developed and provided by the state which can be used by HECs as part of their intervention selection process.

#	Intervention Name	Source	Intervention Category	Root Cause	Descriptions	Resources Needed	Timeline on ROI	Evidence
1	School-Based Violence Prevention	https://www.cdc.gov/policy/hst/hi5/violenceprevention/index.html	Programmatic	Violence and crime	Universal school-based violence prevention programs provide students and school staff with information about violence, change how youth think and feel about violence, and enhance interpersonal and emotional skills such as communication and problem-solving, empathy, and conflict management. These approaches are considered "universal" because they are typically delivered to all students in a particular grade or school.	Delivered in school-settings	2 years	Strong evidence
2	Treatment Foster Care Oregon: Foster Care Program for Severely delinquent youth	http://toptierevidence.org/programs-reviewed/multidimensional-treatment-foster-care	Programmatic	Stress and trauma	TFCO (formerly Multidimensional Treatment Foster Care, or MTFC) provides severely delinquent youths with foster care in community families trained in behavior management and emphasizes preventing contact with delinquent peers. Typical community treatment for such youth, by contrast, often involves placement in a group residential care facility with other troubled youth.	Requires foster families deliver the intervention	2 years	Strong evidence

#	Intervention Name	Source	Intervention Category	Root Cause	Descriptions	Resources Needed	Timeline on ROI	Evidence
3	Peer Support in Mental Health	https://www.mentalhealthamerica.net/sites/default/files/Evidence%20for%20Peer%20Support.pdf	Programmatic	Stress and trauma	Peer services are effective in assisting individuals self-manage their whole health needs. When trained peers employed by a local community organization provide a variety of services, including connections to social and rehabilitation services, participants with peer support are significantly more likely to make connections to primary medical care	Requires Peer Support Specialists	1-3 years	Some evidence
4	Treatment for Pregnant Women with Opioid Use Disorders	https://ncsacw.samhsa.gov/resources/opioid-use-disorders-and-medication-assisted-treatment/default.aspx	Programmatic	Stress and trauma	The rate of opioid misuse and dependence is escalating in many communities, including amongst pregnant and parenting women. In addition, substance use treatment systems are reporting increases in the number of individuals seeking treatment for opioid use disorders. Child welfare systems are reporting increases in caseloads, primarily among infants and young children coming into care and hospitals are reporting increases of infants born with neonatal abstinence syndrome. A coordinated, multi-systemic approach that is grounded in early identification and intervention can assist child welfare and treatment systems in conducting both a comprehensive assessment and ensuring access to the range of services needed by families. Collaborative planning and implementation of services are yielding promising results in communities across the country.	Requires working with providers and child welfare.	1-3 years	Some evidence
5	Nurse Family Partnership	http://evidencebasedprograms.org/document/nurse-family-partnership-	Programmatic	Economic instability	A nurse home visitation program for first-time mothers – mostly low-income and unmarried – during their pregnancy and children's infancy.	Delivered by nurses.	3 years	Strong evidence

#	Intervention Name	Source	Intervention Category	Root Cause	Descriptions	Resources Needed	Timeline on ROI	Evidence
		nfp-evidence-summary/						
6	Child FIRST: Home Intervention Program for Low-Income Families with at risk children	http://evidencebasedprograms.org/programs/child-first/	Programmatic	Economic instability	A home visitation program for low-income families with young children at high risk of emotional, behavioral, or developmental problems, or child maltreatment.	Visitation done by a master's level developmental/mental health clinician and a bachelor's level care coordinator.	3 years	Strong evidence
7	Violence: Early Childhood Home Visitation to Prevent-Child Maltreatment	https://www.thecommunityguide.org/findings/violence-early-childhood-home-visitation-prevent-child-maltreatment	Programmatic	Physical insecurity (violence and crime)	Home visitation to prevent violence includes programs in which parents and children are visited in their home by: nurses, social workers, paraprofessionals, community peers. Some visits must occur during the child's first 2 years of life, but they may be initiated during pregnancy and may continue after the child's second birthday.	Delivered by nurses, social workers, paraprofessionals, and/or community peers	3 - 5 years	Strong evidence
8	Permanent Supportive Housing	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5975075/	Systems	Economic instability	Five recommendations include: 1) child welfare agencies need systematic efforts to help family apply for public housing waitlists. 2) Create partnerships between child welfare agencies and community-based homelessness prevention providers. 3) Create model for investing funds for contract with homelessness prevention. 4) Child welfare leadership joins local homeless services provider networks to advocate for children and families. 5) Diversify	Policy and systems	5 - 10 years	Some evidence

#	Intervention Name	Source	Intervention Category	Root Cause	Descriptions	Resources Needed	Timeline on ROI	Evidence
					approaches to addressing inadequate housing that threatens child well-being.			
9	Parent Education Programs (conducted outside of the home)	http://www.academyhealth.org/files/RapidEvidenceReview.ACEs_.Prevention.pdf	Programmatic	Education	These programs have been shown to address some "changeable" parental risk factors associated with ACEs, such as inadequate parenting skills, attitudes about child rearing, and dysfunctional parenting habits. They are shown to have a marginal impact on other risk factors such as depression and stress.		1-3 years	Some evidence

#	Intervention Name	Source	Intervention Category	Root Cause	Descriptions	Resources Needed	Timeline on ROI	Evidence
10	Dual treatment programs for substance abuse	http://www.academyhealth.org/files/RapidEvidenceReview.ACEs_.Prevention.pdf	Programmatic	Education	Combined substance abuse treatment and parenting interventions improve parenting more than substance abuse treatment alone, though few studies include long-term outcomes related to ACEs risk factors.	Generally, the studies found that the earlier these interventions take place, the better in regard to preventing negative outcomes among children. Common obstacles to session attendance include lack of transportation, hunger, unsupervised children, and stigma. Interventions should be accompanied by strategies for addressing each of these obstacles, such as providing vouchers or courtesy rides, meals, child care and a safe, supportive and non-judgmental environment.	1 -3 years	Some evidence
11	Provide Quality Care and Education Early in Life	https://www.cdc.gov/violenceprevention/pdf/can-prevention-technical-package.pdf	Policy	Education	Preschool enrichment with family engagement and improved quality of child care through licensing and accreditation are two approaches for enhancing parenting practices, parental education, social support, and access to community resources, while		3 - 5 years	Significant evidence

#	Intervention Name	Source	Intervention Category	Root Cause	Descriptions	Resources Needed	Timeline on ROI	Evidence
					simultaneously creating optimal learning environments for young children.			
12	Change social norms to support patents and positive parenting	https://www.cdc.gov/violenceprevention/pdf/can-prevention-technical-package.pdf	Cultural Norms	Social norms	Two types of approaches seek to change social norms and the way we think and talk about child abuse and neglect. These include public engagement and education campaigns and legislative approaches to reduce corporal punishment.		5 - 10 years	Some evidence
13	Strengthen economic supports for families	https://www.cdc.gov/violenceprevention/pdf/can-prevention-technical-package.pdf	Policy	Equitable systems	Economic supports for families can be strengthened by targeting household financial security and family-friendly work to include child support, tax credits, SNAP, assisted housing mobility, subsidized child care, family-friendly work policies		3- 5 years	Some evidence
14	Early Childhood Consultation Partnership	https://www.jaacap.org/article/S0890-8567(16)30283-0/abstract	Programmatic	Stress and trauma	Provides assistance to preschool to better manage challenging childhood behaviors: Children who received Early Childhood Consultation Partnership (ECCP) had significantly lower rating of hyperactivity, restlessness, externalizing behavior, problem behavioral and total problems compared with children in the control group even after controlling for gender and pretest scores.		1 - 3 years	Some evidence

#	Intervention Name	Source	Intervention Category	Root Cause	Descriptions	Resources Needed	Timeline on ROI	Evidence
15	The Incredible Years	http://www.incredibleyears.com/	Programmatic	Stress and trauma	The Incredible Years® program was selected as a model "Strengthening Families" program by the Center for Substance Abuse Prevention (CSAP), as an "exemplary" program by the Office of Juvenile Justice Delinquency Prevention (OJJDP), and as a "Blueprints" program by OJJDP. The Incredible Years® program series have also been recommended by the Home Office in the United Kingdom as one of the evidenced-based interventions for antisocial behavior and by Sure Start as a recommended program for families with children under five years. As such, the series has been subject to quality reviews by independent groups of scientists, evidenced excellent effectiveness in multiple randomized control group studies, and attained high overall consumer satisfaction ratings.	Strongly recommend leaders become certified as group leaders and that one of our certified trainers is involved in training your staff and providing ongoing consultation. We ask that you let us know about research projects and send us copies of the research results.	1- 3 years	Strong evidence
16	Cognitive Behavioral Therapy Intervention for Trauma in Schools (CBITS)	https://www.cdc.gov/prc/prevention-strategies/intervention-lessen-effects-violence-urban-school-children.htm	Programmatic	Stress and trauma	The Cognitive Behavioral Intervention for Trauma in Schools (CBITS) program is a school-based, group and individual intervention. It is designed to reduce symptoms of post-traumatic stress disorder (PTSD), depression, and behavioral problems, and to improve functioning, grades and attendance, peer and parent support, and coping skills.	CBITS has been used with students from 5th grade through 12th grade who have witnessed or experienced traumatic life events such as community and school violence, accidents and injuries, physical abuse and domestic violence, and natural and man-made disasters.	1 - 3 years	Strong evidence

#	Intervention Name	Source	Intervention Category	Root Cause	Descriptions	Resources Needed	Timeline on ROI	Evidence
17	Bounce Back	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4573344/	Programmatic	Stress and trauma	Bounce Back is a school-based group intervention for elementary students exposed to stressful and traumatic events. With 20-50 percent of American children experiencing trauma within their families, at their schools, and in their communities, it is essential to help children heal. Bounce Back teaches students ways to cope with and recover from traumatic experiences, so they can get back to doing what they want to do and need to do.	The Bounce Back program includes 10 group sessions, 1-3 group parent sessions, and 2-3 individual student sessions.	1 year	Some evidence
18	Promoting Positive Cultural Norms	https://www.cdc.gov/violenceprevention/pdf/efc-promoting-positive-community-norms.pdf	Cultural Norms	Violence	Recognizing safe, stable, nurturing relationships (SSNRs) and environments as essentials for childhood provides a new and exciting shift in the prevention of child maltreatment. This focus on healthy relationships moves beyond focusing on reducing risk. To be successful in increasing safe, stable, nurturing relationships and environments in our communities, we will need broad engagement with not just parents and primary caregivers, but with all those who provide such relationships with children (teachers, day care providers, and coaches), as well as those in decision-making positions (health care providers, school principals, and elected officials). To foster broad engagement and adoption, it is critical to establish a context in our communities that supports safe, stable, nurturing relationships and environments.	7 – step process	3 – 5 years	Some evidence

#	Intervention Name	Source	Intervention Category	Root Cause	Descriptions	Resources Needed	Timeline on ROI	Evidence
19	Circle of Security – Parenting (COS-P)	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5543687/	Programmatic and cultural norm	Trauma	**Circle of Security International** presents trainings around the globe focusing on the early intervention models to increase attachment and security developed by Glen Cooper, Kent Hoffman, and Bert Powell.	Trained facilitators	1-3 years	Some evidence
20	Wraparound New Haven (a program of the Clifford Beers Clinic)	https://www.scattergoodfoundation.org/sites/default/files/innovation-submissions/FINAL%20Wraparound%20New%20Haven%20Brochure_0.pdf	Programmatic	Trauma	The CBC Wrap Around New Haven (WANH) program delivers comprehensive and coordinated care to families with behavioral and physical health needs. Its features include: • Connecting families to services that build a healthy lifestyle, including medical services, behavioral health services, and social supports (e.g., housing, school and employment) • Assigning to families a care coordinator who supports the family while helping them identify strengths and needs • Helping families learn to advocate for their children and their family • Identifying a team of supports who will work together to develop a family plan of care • Working to help the family reach their goals within six to twelve months • Visiting in home or another place of family's choosing	Trained care coordinators	1-3 years	Some evidence

APPENDIX 5. HEALTHY WEIGHT AND PHYSICAL ACTIVITY INTERVENTION EXAMPLES

This Appendix provides examples of healthy weight and physical fitness interventions that Health Enhancement Communities may choose to implement. This list is for illustrative purposes and will continue to evolve. A full menu of options will be developed and provided by the state which can be used by HECs as part of their intervention selection process.

#	Intervention Name	Source	Intervention Category	Root Cause	Description	Resources Needed	Timeline on ROI	Evidence
1	Obesity: Behavioral Interventions that Aim to Reduce Recreational Sedentary Screen Time Among Children	https://www.thecommunityguide.org/findings/obesity-behavioral-interventions-aim-reduce-recreational-sedentary-screen-time-among	Programmatic	Physical Insecurity	These interventions teach children behavioral self-management skills to help them start or maintain behavior change. Interventions use one or more of the following components: classroom-based education, tracking and monitoring, coaching or counseling sessions, family-based or peer social support.	Most U.S. programs trained existing classroom teachers to deliver the intervention but competing demands with other school subjects was identified as a barrier to implementation.	1-3 years	Strong evidence
2	Physical Activity: Social Support Interventions in Community Settings	https://www.thecommunityguide.org/findings/physical-activity-social-support-interventions-community-settings	Programmatic	Lack of Access	Interventions focus on building, strengthening, and maintaining social networks that provide supportive relationships for behavior change (e.g., setting up a buddy system, making contracts with others to complete specified levels of physical activity, or setting up walking groups or other groups to provide friendship and support).	Included studies reported favorable effects of the intervention on body fat, confidence about exercise, and knowledge of and social support for exercise.	1-3 years	Strong evidence
3	CHAMPS (Community Health Activities Model Program for Seniors)	http://dne2.ucsf.edu/public/champs/	Programmatic	Lack of Access	A public health model program to promote increased lifetime physical activity levels of seniors. CHAMPS promotes and facilitates physically active lifestyles for seniors. It encourages participants to develop physical activity regimens based on their		1-3 years	Some evidence

#	Intervention Name	Source	Intervention Category	Root Cause	Description	Resources Needed	Timeline on ROI	Evidence
					readiness, preferences, health, and abilities.			
4	Nutrition: Gardening Interventions to Increase Vegetable Consumption Among Children	https://www.thecommunityguide.org/findings/nutrition-gardening-interventions-increase-vegetable-consumption-among-children	Programmatic	Built environment and food desserts	Gardening interventions provide children with hands-on experience planting, growing, and harvesting fruits and vegetables in an effort to increase their willingness to consume fruits and vegetables. Interventions must at least one of the following: outside gardens, microfarms, container gardens, other alternative gardening methods.	May be implemented in early care and education settings, schools, afterschool programs, or communities. May incorporate parental component.	1-3 years	Strong evidence
5	Safe Routes to Schools	https://www.cdc.gov/policy/hst/hi5/saferoutes/index.html	Policy/Systems	Safety	Safe Routes to School (SRTS) encourages increased student physical activity through safe and active transport to and from school. SRTS promotes walking, bicycling, or other forms of active transportation among students and their families. SRTS can include educating the community and improving the built environment to ensure safe places for children to walk and bike to and from school.	May require significant up-front cost and community cooperation to build infrastructure.	3 years	Strong evidence

#	Intervention Name	Source	Intervention Category	Root Cause	Description	Resources Needed	Timeline on ROI	Evidence
6	Physical Activity: Built Environment Approaches Combining Transportation System Interventions with Land Use and Environmental Design	https://www.thecommunityguide.org/findings/physical-activity-built-environment-approaches	Systems	Built environment and food desserts	Built environment interventions to increase physical activity create or modify environmental characteristics in a community to make physical activity easier or more accessible. Coordinated approaches must combine new or enhanced elements of transportation systems with new or enhanced land use and environmental design features. Intervention approaches must be designed to enhance opportunities for active transportation, leisure-time physical activity, or both.	Significant up-front cost to build infrastructure.	10 years	Strong evidence
7	Physical Activity: Creating or Improving Place for Physical Activity	https://www.thecommunityguide.org/findings/physical-activity-creating-or-improving-places-physical-activity	Systems	Built environment and food desserts	In these types of interventions, worksites, coalitions, agencies, and communities work together to change local environments to create opportunities for physical activity. Changes can include creating or improving walking trails, building exercise facilities, or providing access to existing facilities.	Many of these programs also provide training in use of equipment, other health education activities, and incentives such as risk factor screening and counseling. Several programs reviewed were conducted at worksites.	10 years	Strong evidence

#	Intervention Name	Source	Intervention Category	Root Cause	Description	Resources Needed	Timeline on ROI	Evidence
8	Obesity: Meal and Fruit and Vegetable Snack Interventions to Increase Healthier Foods and Beverages Provided by Schools	https://www.thecommunityguide.org/findings/obesity-meal-fruit-vegetable-snack-interventions-increase-healthier-foods-beverages-schools	Policy /Systems/Cultural Norm	Lack of Access	Meal interventions and fruit and vegetable snack interventions aim to provide healthier foods and beverages that will be consumed by students, limit access to less healthy foods and beverages, or both.	Intervention success may vary based on school characteristics and intervention components. Schools with greater resources will likely be better able to implement interventions with high fidelity compared with schools that have higher needs.	3 - 5 years	Strong evidence
9	Obesity: Multicomponent Interventions to Increase Availability of Healthier Foods and Beverages in Schools	https://www.thecommunityguide.org/findings/obesity-multicomponent-interventions-increase-availability-healthier-foods-and-beverages	Policy	Lack of Access	Interventions aim to provide healthier foods and beverages in schools that will be consumed by students, limit access to less healthy foods and beverages, or both.		3 - 5 years	Strong evidence
10	Falls Prevention Programs: Matter of Balance, Otago Exercise, Stepping On, Tai Chi	https://www.ncoa.org/wp-content/uploads/2017-Evidence-Based-Falls-Programs-Infographic.pdf	Programmatic	Lack of Access	Workshops and exercise programs to build muscle, improve balance, reduce fear of falling, and develop strategies to reduce falls.		1-3 years	Strong evidence
11	Secrets of Baby Behavior	http://www.calwic.org/storage/documents/webinars/web4_jackie.pdf	Programmatic	Lack of education	Baby behavior was a big reason why many mothers stop breastfeeding, give too much formula, give solid food too early, and give unhealthy food to their babies. Inappropriate feeding may lead to overweight.		1 - 3 years	Some evidence

#	Intervention Name	Source	Intervention Category	Root Cause	Description	Resources Needed	Timeline on ROI	Evidence
12	Baby Friendly Hospital Initiative	https://www.babyfriendlyusa.org/about-us	Systems/Policy	Lack of education	A global program to encourage the broad-scale implementation of the Ten Steps to Successful Breastfeeding and the International Code of Marketing of Breast-milk Substitutes. The BFHI assists hospitals in giving mothers the information, confidence, and skills necessary to successfully initiate and continue breastfeeding their babies or safely feed with formula and gives special recognition to hospitals that have done so.		1 - 3 years	Strong evidence
13	Minding the Baby Home Visitation Program	https://medicine.yale.edu/childstudy/education/practitioner/mtb/	Programmatic	Trauma	Grounded in attachment theory and reflective parenting, Minding the Baby® (MTB) home visiting provides an integrated model of care for first-time young mothers and their families that bridges primary care and mental health approaches to enhancing the mother-infant relationship.		1-3 years	Strong evidence

#	Intervention Name	Source	Intervention Category	Root Cause	Description	Resources Needed	Timeline on ROI	Evidence
14	Black Barbershop Health Outreach Program	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4244298/	Cultural Norm and Programmatic	Lack of education and access	African American men die disproportionately more than any other segment from preventable diseases. Over the past decade, the Black Barbershop Health Outreach Program has found success in its three-pronged approach to community engagement: • **SCREEN:** We screen men for diabetes as well as high blood pressure. • **EDUCATE**: We educate men about making life style choices. • **REFER:** We refer men to local, affordable health care resources.		1-3 years	Some evidence

APPENDIX 6. ADDITIONAL SIM WORKGROUPS AND WORK STREAMS

Equity and Access Council

The recommendations of this group are intended to promote appropriate safeguards to protect against under-service and patient selection as shared savings programs become the predominant model of health care financing in CT. These recommendations must be considered in the development of finance models for the HEC Initiative.

Health Information Technology (HIT) Council

The HIT Environmental Scan (January 2018) resulted in published recommendations by nearly 300 individuals representing over 130 organizations from across the health care system in Connecticut. Current gaps include incomplete and siloed data which create barriers to managing gaps in care, targeting interventions, and comparing performance to peers and to aggregated populations. Continued work of the HIT Council will ensure communities are able to measure and evaluate success by confirming all appropriate data capabilities are in place and leveraging any existing infrastructure.

Quality Council

Ongoing Council work will ensure measure alignment and development of a public scorecard that broadly represents all involved communities and is meaningful and relevant to HEC measures. Evolution of current measure sets to be inclusive of root causes should be an ongoing scope of work and analysis.

Practice Transformation Task Force

The role of the Practice Transformation Task Force is to recommend advanced medical home standards provide advice on practice transformation processes, foster the alignment of care with delegated delivery care models in the state, and provide ongoing advice during implementation process.

Advanced Medical Home

As of May 2018, 125 practices achieved 2014 NCQA Level II or II recognition under the Advanced Medical Home Program. These practices must be engaged in future community-based efforts to promote health and the essential role of primary care.

Accountable Care Organizations (ACOs)

Five ACOs participate in Connecticut's Medicare Shared Savings Program, two of which also participate in the Advanced Payment ACO model program. In addition, in October of 2016 nine provider networks received authorization to negotiate for participation in PCMH+ (formerly MQISSP), Connecticut Medicaid's shared savings program. This work will leverage ACOs as partners in HECs, including participating in HECs and potentially being a source of and/or conduit for sustainable financing. All efforts under the HECs will be complementary to the ACO work and not duplicative.

Value-Based Insurance Design (VBID) Consortium

Exploration of the role of insurance design that is intended to promote high-value services and employers, particularly those that are self-insured, must continue as an integral component of a multi-factor, multi-sector approach to population health. The 11 self-insured employers recruited into the targeted VBID technical assistance initiative will be consulted to evaluate benefits and challenges of the approach and its potential applicability to other insurance products.

APPENDIX 7. ADDITIONAL REFERENCE MATERIALS

Child Well-Being

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Healthy Weight and Physical Activity

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Health Equity

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