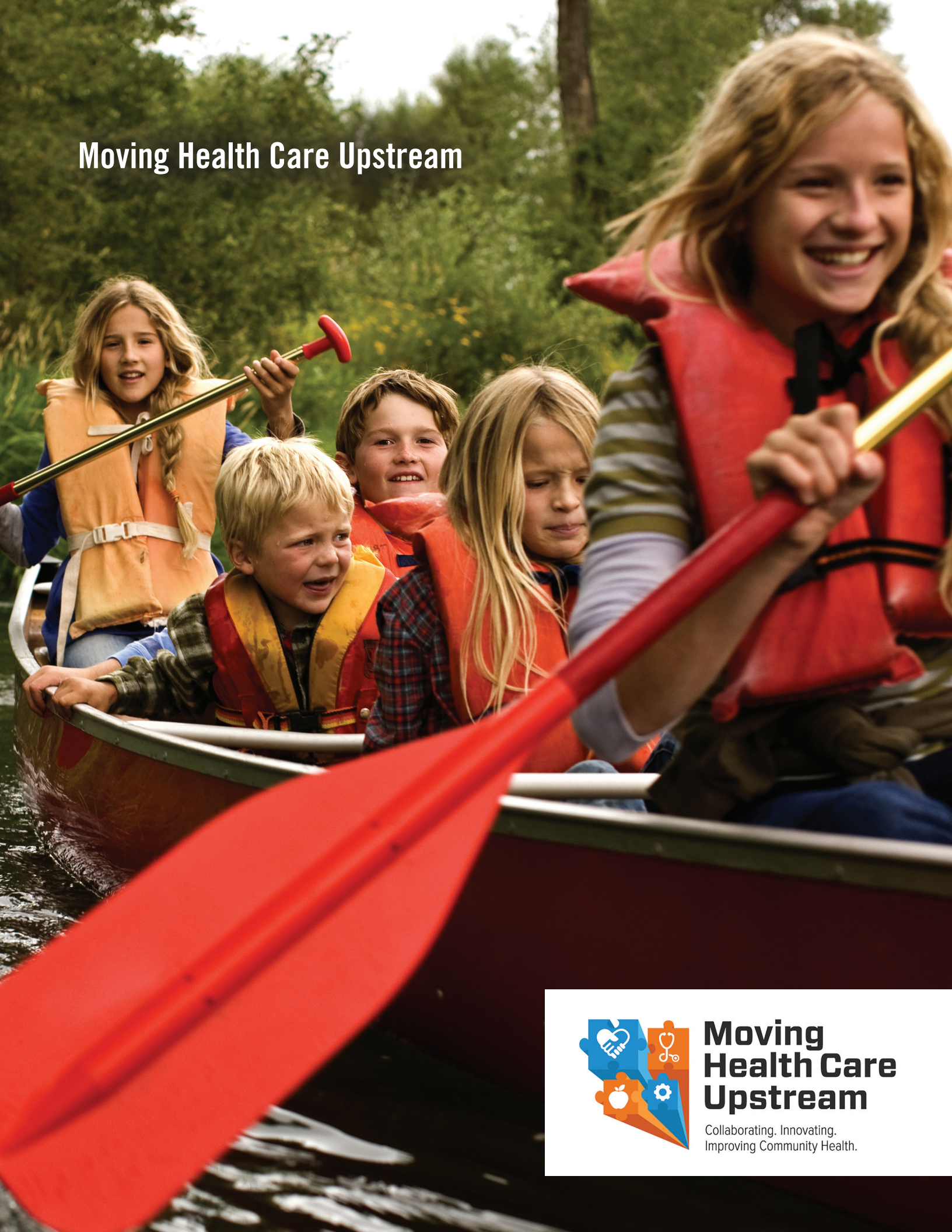
Moving Health Care Upstream



Moving Health Care Upstream

Collaborating. Innovating.
Improving Community Health.

Moving Health Care Upstream

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National Early Child Care Collaboratives (NECCC) Acknowledgement and Disclaimer: Nemours is currently funded by the Centers for Disease Control and Prevention (CDC) under a five-year Cooperative Agreement (1U58DP004102-01) to support states/localities in launching early care and education learning collaboratives focused on childhood obesity prevention. The views expressed in written materials or publications, or by speakers and moderators do not necessarily reflect the official policies of the U.S. Department of Health and Human Services, nor does the mention of trade names, commercial practices, or organizations imply endorsement by the U.S. Government.

Optimizing Health Outcomes for Children with Asthma in Delaware Health Care Innovation Award (OHO) Acknowledgement and Disclaimer: The project described was made possible by Grant Number 1C1CMS331017 from the U.S. Department of Health and Human Services, Center for Medicare & Medicaid Services. The contents of this presentation are solely the responsibility of the authors and do not necessarily represent the official views of the U.S. Department of Health and Human Services or any of its agencies.

Introduction

The U.S. health care delivery system is undergoing a necessary evolution. There is broad recognition that health care costs are too high, and that our care delivery models and payment mechanisms need to be realigned to promote prevention, as well as improve quality and health outcomes and reduce costs. A growing number of health care providers are looking beyond their role within the clinical setting to focus on factors that affect the health of populations.

The federal government recognized the need to accelerate health care transformation and invested considerable funding through agencies such as the Centers for Medicare & Medicaid Services' (CMS) Center for Medicare & Medicaid Innovation (Innovation Center) and the U.S. Centers for Disease Control and Prevention's (CDC) Prevention and Public Health Fund. These investments acknowledge population health and the need to address the upstream determinants of health, with a focus on prevention and health promotion. This brief profiles the innovative population health initiatives of three children's hospitals. In addition, policies are recommended that can further accelerate and improve population health initiatives.

Overarching Framework for Population Health Initiatives

The Moving Health Care Upstream Initiative[1] developed a set of primary drivers for population health initiatives that address the social determinants of health through collaborative, cross-sector community systems of care. The drivers include:

1. Empower and activate children and families to manage their health and health care needs.
2. Engage and activate communities to support collective health goals.
3. Provide a seamless continuum of cross-sector supports and services.
4. Strengthen community infrastructure to guide and support collective work toward population health goals.
5. Increase extrinsic motivation through supportive policy, financing and regulations.

Implicit in the paradigm is the assumption that innovations and strategies linked to these drivers are cross-cutting strategies that break down silos and can be applied across a variety of health conditions (e.g., asthma, obesity) or health care sites (e.g., school-based centers, children's hospitals).

Profiles

The five primary drivers described above provide a common framework for understanding and translating the lessons learned from three programs into policy objectives and recommendations. The profiles that follow highlight population health initiatives from three children's health systems: Nemours Children's Health System, Boston Children's Hospital and Seattle Children's Hospital. While each initiative encompasses many of the above drivers, for the purposes of this brief, two are selected for each initiative. In addition to sharing touchpoints within the five drivers presented above, each initiative includes the following characteristics:

The initiative seeks to improve health through a focus on upstream determinants.

6. The initiative is supported by both federal and private or community benefit funds.
7. The initiative has demonstrated promising early findings.

The initiatives profiled represent a continuum of population health, ranging from efforts that are primarily targeted to a particular patient population to broader approaches targeting individuals in a geographic area or community setting. All of the initiatives go beyond the clinical setting to promote health in the places where children live, learn and/or play.

These profiles and the subsequent policy recommendations are presented to accelerate the adoption of spreadable and scalable innovations that are generalizable across multiple disease strategies or service location types, with an ultimate goal of improving population health.

Recommendations to Accelerate Health Care Innovation and Transformation

The innovative initiatives designed to improve child health occurring at Nemours, Boston Children's and Seattle Children's were accelerated because of investments from the federal government. The following recommendations build upon the lessons learned from these initiatives and are intended to continue to accelerate health care innovation and transformation in the U.S.

Recommendations for Congress:

1. Prioritize sufficient, continuous and reliable funding to promote community-based prevention and help health care systems connect with nonclinical and social needs of their patients and families. Examples include programs or initiatives funded by:
   a. The Prevention and Public Health Fund
   b. The Centers for Disease Control and Prevention's (CDC) base discretionary funding (e.g., Partnerships to Improve Community Health & Racial and Ethnic Approaches to Community Health)
   c. The Center for Medicare & Medicaid Innovation's (Innovation Center's) population health portfolio
2. Encourage federal agencies to work together to pilot funding opportunities that cut across agencies and silos and support geographically based population health, using common applications and reporting requirements.

Recommendations for Federal Agencies:

3. Convene and provide technical assistance to current and previous grantees/awardees to prioritize sustainability of the most effective parts of an initiative beyond the award period. Require that grantees place greater emphasis on sustainability planning in both their applications and in the first year of their award.
4. Pilot an initiative that permits grantees/awardees to blend and braid federal funds from different agencies to develop a comprehensive initiative that combines clinical and community-based prevention, with a goal of improving the health of a geographic population.
5. Encourage state Medicaid and Managed Care Organizations to share data with innovators and awardees and to partner for data analysis.
6. Include a longer time horizon for award periods of at least five years, and an expected Return on Investment of seven to 10 years for population-based prevention initiatives.

Recommendations for Payers:

7. Engage with CDC and Innovation Center awardees, as well as other innovators, regarding federally funded initiatives and the types of impacts/measures of interest to payers (i.e., building the "business case").

8. Work with CDC and Innovation Center awardees and other innovators on pilots or full-scale payment models to sustain successful initiatives.

Recommendations for Private Funders/Foundations:

9. Provide bridge funding for grantees/awardees with effective models, upon the conclusion of their funding periods, to give awardees time to negotiate sustainable funding mechanisms with payers.

10. Offer training and technical assistance to innovators regarding building a business case for payers.

Recommendations for Innovators:

11. Engage in sustainability planning early on, including developing a value proposition/business case for funders and discussing potential options for sustaining the work with payers.

12. Develop a culture of continuous learning, including compiling best practices and engaging in learning platforms and other opportunities to share lessons learned with other innovators.

Profile 1:
Nemours Children's Health System addresses asthma and healthy eating/physical activity

Nemours Children's Health System has focused on improving population health within the communities it serves and nationally. Two of Nemours' initiatives – Optimizing Health Outcomes for Children with Asthma in Delaware (OHO)[2] and the National Early Child Care Collaboratives (NECCC), also known as the National Early Care and Education Learning Collaboratives – best showcase the potential for innovation and transformation when public and private partnerships are forged to improve population health. The OHO initiative particularly illustrates drivers three and four presented above – providing a seamless continuum of cross-sector supports and community-based services; and strengthening community infrastructure to guide and support the collective goals of partnering organizations. The NECCC exhibits driver four.

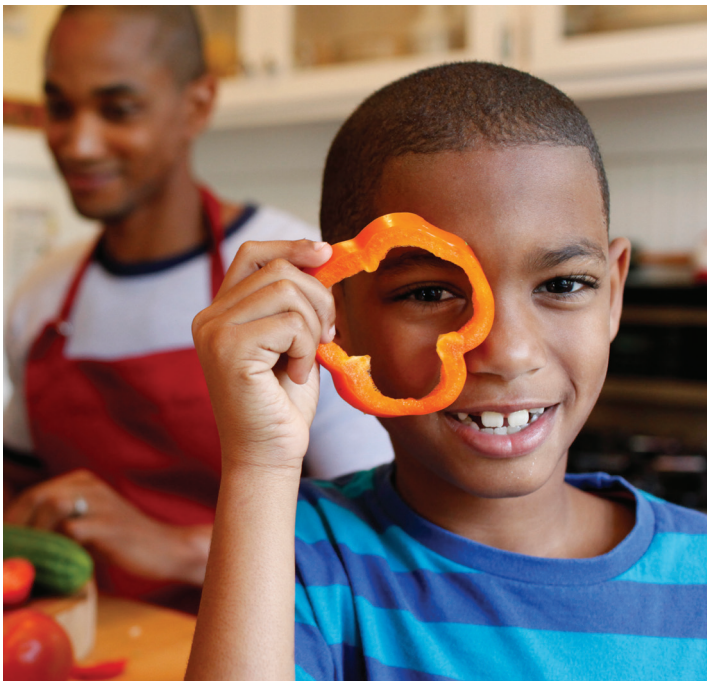
The Model

In an effort to connect clinical care to community infrastructure in order to address upstream determinants of

health for children, Nemours partnered with the Center for Medicare & Medicaid Innovation (Innovation Center) in 2012 to prevent and manage asthma in a targeted pediatric population in Delaware through the Optimizing Health Outcomes (OHO) award. Also in 2012, Nemours partnered with the U.S. Centers for Disease Control and Prevention (CDC) to promote healthy eating and physical activity in the early care and education setting through the establishment of peer-to-peer learning collaboratives in nine states, as part of the National Early Child Care Collaboratives program (NECCC).

Asthma: The OHO award is aimed at implementing a multifaceted approach to addressing pediatric asthma by integrating clinical care with community-based prevention for a targeted pediatric population in three primary care sites in Delaware, as well as systems-level changes that have the potential to impact 42,000 children in the surrounding communities. The model includes four key elements: a family-centered medical home integrated with behavioral health, a navigator workforce (community health workers) who address individual needs; integrators (community health liaisons) who address larger systems issues, working with key community coalition partners; and innovative use of technology, through a partnership between Nemours and schools.

Healthy Eating and Physical Activity: The NECCC program promotes healthy early childhood environments and has reached approximately 134,000 young children in 1,300



early care and education (ECE) settings by encouraging practice change at the provider level and broader state level systems changes through partnerships with state and local entities. Learning collaboratives that enable ECE providers to interact directly and engage in shared learning have been established in Arizona, Florida, Indiana, Kansas, Missouri, New Jersey, Kentucky, Virginia and Los Angeles, California.

Analysis: The initiatives build upon drivers three and four by: 1) OHO only – providing a seamless continuum of care through the connection of clinical care to community infrastructure and community-based interventions; and 2) OHO and NECCC – strengthening existing infrastructure to support collective goals of reduced instances of asthma-related hospital admissions, and addressing healthy eating and physical activity in the early care and education setting.

Innovation and Transformation

Both the OHO and NECCC programs include innovative elements. The common thread that underlies the innovation in both of these initiatives is the focus on making change on the individual level (through work with early care and education providers in the NECCC and through interaction with families in the OHO model), while simultaneously working at a systems level to strengthen community infrastructure to guide and support collective goals.

Asthma – As part of the OHO initiative, Nemours employed its existing family-centered medical home model and state-of-the-art technology to identify the highest risk patients. Community health workers (CHWs), supported by Innovation Center funding, work with children and families to identify triggers in patients' homes and surrounding areas, and coach families on how to eliminate or mitigate these triggers to avoid asthma attacks. Through an innovative partnership with schools, school nurses have access to the Nemours Electronic Health Record (EHR) and asthma action plan for asthma registry patients, with parent permission. Additionally, Nemours supplies funding to employ community health liaisons to work at a systems level to identify and mitigate issues within the community, such as reducing bus idling that exacerbates asthma and reducing asthma triggers in public housing. This work occurs within the context of close community bonds with other organizations from a variety of sectors that are working with Nemours to address community issues and that are sustained beyond the initiative. With these integrated elements, Nemours has demonstrated an effective approach to prevention and care that both connects cross-sector supports and services, and strengthens existing community infrastructure to attain shared goals.

Healthy Eating and Physical Activity – Within the NECCC program, each collaborative convenes a series of five in-person workshops to assist ECE providers in adopting best practices to promote healthy eating and physical activity, enable providers to exchange ideas with peers, learn from experts and receive training and technical assistance. Bringing ECE providers together to learn from each other and empowering the providers to determine where change is most necessary in their local setting is an innovative way to create a sense of ownership and buy-in. Nemours encourages providers to make incremental steps toward significant, sustainable change and supports those changes with a technical assistance program focusing on change management as the key. In addition to directly working with providers, Nemours is working to make sustainable change by providing technical assistance to its state and local implementing partners on how to integrate a greater focus on healthy eating and physical activity into early childhood and children's health systems at the state level.

Early Findings and Testimonials

Asthma – Preliminary self-monitoring analysis indicates promising findings. Third-party evaluation is pending.

PROVIDER SPOTLIGHT: In one example of how Nemours is tackling asthma within the broader context of the challenges a family may be facing, Jenice Rodriguez, a care coordinator at Nemours duPont Pediatrics, Dover, demonstrates the importance of knowing and responding to each family's hierarchy of needs. According to Jenice, "If a mother is worried about how she is going to feed her children their next meal or whether they are living in a safe place, it is much harder to teach her about asthma compliance." This proved to be the case with a family on Community Health Worker Jason Scott's asthma registry.

A mother and child on Jason's caseload were living in a domestic violence shelter. The child's asthma was not well controlled. Jason knew that to ultimately improve this child's health, he needed to help address her social circumstances first. He connected the family to Jenice, and together they were able to find a home for the family and a slot in child care. The child now has a more stable home, and her asthma is better controlled. According to Jenice, "In order to improve a child's health, it is our responsibility to look beyond the walls of our health care system to help families address their most basic needs." Dr. Kevin Sheahan, who leads the Dover practice, agrees. "CHWs provide us with critical information about our patients' housing, transportation and food security. They are an integral part of our care team."

Healthy Eating and Physical Activity – Project Year 1 evaluation of the NECCC also shows encouraging findings. To measure changes in implementation of best practices, programs completed the Let's Move! Child Care (LMCC) Quiz and the Go Nutrition and Physical Activity Self-Assessment for Child Care (Go NAP SACC) at the start and end of the collaborative.

- At baseline, programs participating in the NECCC were meeting 68.1 percent of LMCC best practices. After NECCC Learning Sessions and ongoing technical assistance, ECE programs were meeting 77.4 percent of LMCC best practices; a statistically significant increase of 9.2 percent.

- At baseline, programs participating in the NECCC were meeting 53.4 percent of Go NAP SACC best practices. After NECCC Learning Sessions and on-going TA, ECE programs were meeting 65.4 percent of Go NAP SACC best practices; a statistically significant increase of 12 percent.

According to recent research, there are approximately 129,000 center-based ECE programs serving 6.98 million children birth through age five years in the United States. By targeting this setting, the NECCC model can play a key role in promoting healthy eating and physical activity in early childhood settings. If the changes to best practices made in ECE programs participating in the NECCC are sustained, they have the potential to impact many more children than those currently served by these programs, allowing future generations of children the opportunity to grow up healthy.

PROVIDER SPOTLIGHT: "I could not stand junk food being brought into our program any longer," says Center Director Maritza Lopez. "We knew healthy eating was very important for the children we serve, but after we joined Taking Steps to Healthy Success, we wanted more!" Taking Steps to Healthy Success is the curriculum Nemours developed through NECCC-funding from CDC.

In the beginning, the program's menus included foods that were fried and breaded. Water was made available, but it was only located outside the classrooms. "Our interest was sparked at the Taking Steps to Healthy Success's Learning Session 2. We saw how much the children could benefit from healthier eating and family-style dining." Maritza and her husband began working with food vendors to find healthier food options to serve in their program. While working with the vendors, the program's menu changed. Whole grain breads, whole wheat pasta, brown rice and fresh fruit were served. Additionally, 100 percent fruit juice was limited to 4-6 ounces daily. To engage families, Maritza provides program families with information about healthy eating at home, and families are invited once a month to join the children for a meal or snack.

"We were inspired to develop goals, prioritize those goals, and put them into practice. Now we have proof of our success. Children will eat healthy food and family-style dining works!" says Maritza Lopez.

Funding and Sustainability

Both the OHO and NECCC initiatives are examples of successful public-private partnerships. Nemours has devoted in-kind resources and has leveraged federal and private foundation funding to catalyze and spread the initial innovation. Nemours is now developing a strategy to sustain the initiatives once the federal awards periods end.

Asthma – Nemours received a three-year, $3.7 million Health Care Innovation Award from the Center for Medicare & Medicaid Innovation to fund the OHO initiative. In addition to these federal funds, Nemours has invested significant in-kind resources, such as project leadership staffing (director, medical director, community liaisons, care coordinators, etc.), as well as staffing from the Nemours Health Information Technology and KidsHealth teams. Federal funding for this project will end on June 30, 2015, unless a request for carryover funding is granted. Nemours will continue to fund salaries for positions it was already funding in-kind, such as community health liaisons. Nemours is considering multiple options to continue this important work, including self-funding two community health workers through the end of 2015. Nemours will continue to support the salaries of the care coordinators, will hire psychologists for all of its primary care sites and will continue to support three community health liaisons, as they play a critical role in the transformation of our health care system. Additionally, Nemours is exploring ways to work with payers to support the most effective elements of this program going forward.

Healthy Eating and Physical Activity – The NECCC program builds upon a successful Delaware initiative that Nemours funded to engage Delaware's ECE providers in a learning collaborative focused on healthy eating and physical activity.

The national work to continue to innovate, spread and scale this model is funded by the CDC via the Prevention and Public Health Fund. The funding is up to $20 million in total over five years (Fiscal Years 2012-2016), subject to annual appropriations. CDC funding has enabled Nemours to create an infrastructure to support healthy eating and physical activity promotion in ECE settings in various locations across the country, in addition to the in-kind staffing support Nemours has also contributed.

Additionally, Nemours has leveraged other private funds to maximize the impact of its work and reach more children:

- *Private Foundation:* In 2015, Nemours received a $375,000 grant to establish learning collaboratives in Oakland, California, using the curriculum from the NECCC.
- *General Mills Foundation:* In 2014, the General Mills Foundation provided approximately $350,000 to Nemours to support 286 ECE programs enrolled in the collaboratives in Fla., N.J. and Mo. to purchase materials and equipment that enabled providers to make healthy changes.
- *The Florida Department of Health*: The Florida Department of Health is using Section 1305 CDC funds to offer a collaborative in rural Florida.

As is the case with the OHO initiative, Nemours is also looking to sustain impact beyond the end of the NECCC federal grant period. Nemours is providing technical assistance to its state and local implementing partners regarding how to integrate healthy eating and physical activity into existing early childhood and child health systems and initiatives. These systems-level changes will extend the reach of this program far beyond the providers

directly participating in the collaborative, with the goal of embedding support for healthy eating/physical activity promotion into the state or locality's system so that children now and in the future will benefit.

Profile 2:
Boston Children's Hospital's Community Asthma Initiative

At Boston Children's Hospital, asthma was one of the leading causes of hospitalization – 70 percent of patient admissions were children living in five low-income neighborhoods of Boston. Additionally, a community health needs assessment identified asthma as one of four major concerns for families living in these same areas.[3] Living with asthma can affect more than a child's health status – children may miss school, parents or caregivers often need to miss work and stress is added to the entire family. To help address the issue and the health disparities it can create, Boston Children's developed the Community Asthma Initiative (CAI) to provide a continuum of asthma care from providing individualized education and management, supporting advocacy efforts and policy changes, to leveraging existing partnerships and local resources to reach families community-wide.

The Model

CAI, which is based on the Institute of Medicine's socio-ecological model, targets its interventions across multiple levels to meet the complex needs of patients based on the context of their lives. CAI provides care and services at each level as described below:

- Individual and Family: Nurses and community health workers provide case management services and home visits to deliver asthma education on topics such as Asthma Action Plans and medication administration, home environmental assessments and help with the remediation of triggers, and referrals to local resources.
- Community: In addition to offering educational workshops in schools, Head Starts and other community venues, CAI has worked closely with the Boston Public Health Commission and other health care agencies in Boston (including several that also provide asthma home visits) to develop and sustain the Boston Asthma Home Visit Collaborative. This collaborative was formed to ensure that all children in Boston have access to high-quality, culturally and linguistically appropriate asthma home visits with current capacity to provide home visits in six languages. This work has included the development of a standard asthma home visit protocol for community health workers, the pooling of home visit data for analysis, and monthly supervision groups for the community health workers, co-facilitated by the CAI clinical director. CAI also collaborates closely with the Boston Public Health Commission, Boston inspection services and public housing officials to support efforts to improve public and subsidized housing conditions for families in Boston.
- Systemwide: CAI has worked with partners and coalitions to support advocacy efforts around ensuring payment for asthma case-management and home visit services through Medicaid (MassHealth) and also engages in other efforts to improve systems change around social-determinant-of-health factors (e.g., healthy housing and schools).

Through these efforts, the CAI program of Boston Children's demonstrates drivers four and five presented above by strengthening community infrastructure focused on asthma management to support reduced health care utilization, and increasing extrinsic motivation through supportive Medicaid payment policies in the state of Massachusetts. Under these coalescing principles, Boston Children's has been able to initiate real and lasting change in the lives of its pediatric asthma population.

Innovation and Transformation

A bundled payment pilot for high-risk pediatric asthma patients was approved as part of the Medicaid waiver received by the Commonwealth of Massachusetts on December 20, 2011. After extensive input from stakeholders and a Request for Response (RFR) process, Boston Children's was selected as one of three sites for implementation. The bundled payment is slated to be launched in 2015 with the goals of 1) improving health outcomes, 2) preventing unnecessary hospital admissions and emergency department utilization, and 3) reducing associated Medicaid costs.

The bundled payment will provide a per member/per month rate for pediatric asthma patients identified as high-risk, and served by sites that participate in the MassHealth Primary Care Clinician Plan (MHPCC).

Each primary care site receiving the bundled payment will institute an integrated, medical home-based delivery system, using a population health model. This system must include:

- outreach to families and scheduling of routine asthma visits

- review on a monthly basis of these high risk patients and determining who needs follow-up
- offer of at least one home visit per family to provide additional education and support for asthma management, including medication adherence, as well as assessment for home environmental triggers
- assessment of asthma control at multiple points of contact, using the validated tool, the Asthma Control Test
- social work and case management services
- connection to the child's school nurse in order to provide the child's current Asthma Action Plan, as well as establish ongoing communication between the medical home and the school nurse
- outreach to all asthma patients to encourage the annual flu shot

Early Findings and Testimonials

- For the 1,361 children treated through September 2014, there were significant reductions in health care utilization and improved quality of life. At 12 months of follow-up:
  - 57 percent of patients had a decrease in Emergency Department visits
  - 80 percent of patients had a decrease in hospital admissions
  - 43 percent of patients had a decrease in missed school days
  - 52 percent of parents/caregivers reported fewer missed work days
- Significant reductions in costs of inpatient admissions and ED visits, compared with a cohort from a demographically similar Boston neighborhood, demonstrating a positive return on investment.

Provider Spotlight: Linda Haynes, the nurse practitioner who works on the asthma team in the primary care clinic at Boston Children's Hospital, reflected on the work that the Community Asthma Initiative did with just one of the many families that she and CAI follow together: "Families in our clinic face many social challenges that interfere with their asthma care. Jerome and his family had moved from Massachusetts to Texas and back to Massachusetts. In doing so, they temporarily lost all of their benefits, including Medicaid, [SNAP] and eligibility for shelter placement. His family was in dire circumstances and facing homelessness. The Community Asthma Initiative provided comprehensive case management, in addition to asthma education and advocacy, and supported Jerome's mother as she worked to re-establish much-needed services in our community. They also provided one-on-one parent support that kept this family connected to their medical home and kept Jerome's asthma under control."

Margie Lorenzi, the community health worker who works with Jerome's family had this to say: "I met Jerome and his mother during Jerome's hospitalization for asthma at Boston Children's this past November. During that admission many social needs were identified, related to the fact that the family had just moved to Boston from Texas. The family was living in very crowded conditions in the maternal aunt's apartment, where there were smokers, and mom and all three children were sleeping together in one twin bed.

"Jerome's mother was having trouble getting the family signed up for Medicaid, which meant that she couldn't get Jerome the controller (preventive) asthma medications that he had been on in Texas, nor had he or his siblings yet been seen at a clinic for primary care since they arrived in Boston. The lack of medication and routine asthma care contributed significantly to Jerome's hospitalization and we wanted to make sure he was well connected to primary care and wouldn't have any further gaps in care or medications. Mom chose to bring him to the Boston Children's primary care clinic, and I made sure that Jerome had an appointment with Linda within a few days of being discharged from the hospital and that all three children were registered for the clinic. We helped his mother with transportation to and from the clinic to ensure that they made it to his first appointment and connected them with social work. At the clinic they were able to come up with an interim plan to get medications filled at the hospital until Jerome's Medicaid became active. Once these plans were in place, I began to work with mom around making sure that her Medicaid application was all set, getting Jerome signed up for school, applying for emergency benefits, and after our first home visit, provided her with a letter to the state agency in charge of shelter placement, regarding the urgency of the family's housing needs. Eventually, mom did get Jerome back on Medicaid and obtained emergency food stamps. Unfortunately, the family is still waiting to be placed in a shelter, but despite the triggers in their current living situation, Jerome's asthma remains under good control."

Funding and Sustainability

The CAI program was funded by private philanthropy for the first three years. It received a Health Resources and Services Administration (HRSA) Healthy Tomorrows grant from 2006-2011, which was renewed for an additional five years in 2011. In October 2007, CAI received a CDC Racial and Ethnic Approaches to Community Health (REACH) grant that provided funding for five years.

In 2012, CAI became part of the New England Asthma Innovations Collaborative (NEAIC), which is a multi-state and sector partnership that includes providers, payers and policy makers. The Asthma Regional Council of New England (ARC), a policy group focused on asthma and healthy homes and school policies, was awarded funding from the Innovation Center in 2012 to create a region-wide collaborative of asthma home visiting organizations, as well as Medicaid payers. CAI is one of the programs funded by this grant, a goal of which is to provide a rigorous cost analysis, using claims data, to calculate a return on investment (ROI). This ROI can then be used to negotiate with payers around reimbursement for these generally non-reimbursable services.

Additionally, the MassHealth bundled payment pilot for high-risk pediatric asthma patients is intended to be the basis for a key policy change to provide the financial support essential to sustain effective asthma management. MassHealth will evaluate cost savings within three years. A positive ROI would provide evidence for expanding the bundled payment to other practices throughout the state, promoting population health and best practices and increasing access to community health worker-provided asthma home visits – and potentially home visits for other chronic care conditions – in parts of Massachusetts where no programs currently exist. Boston Children's anticipates that this work with Medicaid will provide the basis for a payment model applicable to high-risk children with asthma covered by private health plans as well.

Profile 3:
Seattle Children's Hospital Addresses Health Equity

After reviewing alarming statistics on chronic disease in their own state and county, Seattle Children's Hospital and its partners, together with community organizations, cities, schools and others, decided to focus on achieving health equity for South Seattle and South King County in Washington state. In partnership with Public Health-Seattle, King County and the Healthy King County Coalition, this approach exemplifies drivers two and four – engage and activate communities to support collective health goals and strengthen community infrastructure to guide and support collective work toward population health goals – presented above.

- Statewide, two out of three deaths each year are from diseases related to tobacco use or obesity.
- King County has the most extreme smoking inequities based on demographics and geography within the county of the 15 largest metropolitan counties in the nation.
- One in five youth in King County is overweight or obese with obesity rates highest among males, youth of color and those in South King County.

The Model

In 2012, with Centers for Disease Control and Prevention (CDC) Community Transformation Grant funding, Seattle Children's Hospital, Public Health-Seattle, King County, and the Healthy King County Coalition came together to focus on the shared goal of creating healthier communities by making healthy living easier and more accessible to where people work, live, learn and play. Since then, this group has

aimed to reduce health inequities by improving nutrition, increasing physical activity, and decreasing smoking rates and other tobacco use. Together, this work focuses on ensuring everyone has equal access to healthy options, lifestyles and environments.

Based in part on the work done in King County through Communities Putting Prevention to Work from 2010-2012, Seattle Children's Hospital and partners obtained Community Transformation Grant-Small Communities funding from the Prevention and Public Health Fund. Among many other projects, examples of projects completed with this funding include:

- Behavioral Economics: working with a school district in South King County, with high rates of free and reduced lunch participants, to make subtle, inexpensive, but potentially impactful changes in school cafeteria settings based on evidence-based behavioral economic strategies.
- Healthy Hospital Food: working with four hospitals in South King County to create healthy food and beverage choices in hospital retail settings, including cafeterias and vending machines.

Innovation and Transformation

While the work in South Seattle and South King County builds on past successes, the collaboration between private and public organizations is innovative. Particularly innovative is the development of diverse partnerships outside of the usual organizations working to support population health efforts, lending multidimensional expertise in navigating poverty, racism, language and cultural barriers to attain health equity and justice to the work. It also uses a strengths-based model, recognizing and building on community assets rather than only focusing on health deficits.

Behavioral Economics: The intent of this project was to support kitchen coordinators in applying behavioral economic principles (small, low-cost changes) in their school cafeterias to encourage students to select healthy lunch items. Behavioral economics examines the various physical, social and other environmental factors that influence individuals' behaviors and choices. In the school cafeteria setting, this includes the use of attractive displays, containers and coolers for fruit, vegetables and milk; placement of fruit and vegetables at multiple locations throughout the food selection areas within the cafeteria; placement of white milk on top of or in front of chocolate milk; offering made-to-order salad bars, grab-and-go sandwiches and sliced fruit; and posting signs to highlight healthy foods. Innovative pieces of this project include its use of students to develop ideas for encouraging healthy food selection in a school cafeteria and plans to market healthy food throughout the school.

Healthy Hospital Food: The goal of this project was to increase healthy options in the food retail environment (cafeteria, vending) in four hospitals in or mostly serving South Seattle and South King County. Hospitals were asked to commit to making three to four of the following changes:

1) Increase fresh fruit and vegetable purchasing by 20 percent over baseline year.

2) Offer at least one healthy cafeteria meal option daily at breakfast, lunch and dinner, as applicable.

3) Provide at least 50 percent healthy snacks in all hospital vending machines, cafeterias and gift shops.

4) Increase access to tap water through cafeteria "hydration station" installation and promotion.

5) Increase healthy beverage purchases by 20 percent per year above existing levels.

Innovative pieces of this work include treating the hospital retail food environment as a location to promote good nutrition, and the creation of a learning network where hospitals openly discussed how to make changes, address barriers and facilitate the work.

Early Findings and Testimonials

Behavioral Economics: It is estimated that approximately 6,100 students were reached by changes to school cafeterias that make healthy choices easier. Kitchen coordinators who were interviewed after implementation found the program helpful. The University of Washington has completed a rigorous case control evaluation of this work, including analysis of student's purchase and then subsequent plate waste. Early findings are promising and will be shared via peer-reviewed publication.

Spotlight: "I've noticed just the little things that I do now that I didn't before, like putting the white milk* in front and making sure that it's really full and that it's what they see first." *(Kitchen Coordinator)*

"I feel like it's given me a better way of laying out food… I do think that it has helped as far as with giving them more options in the line, in the way that I set it up. I wouldn't have ever thought to put fruit in two spots. I would have never thought of slicing the oranges, you know?" *(Kitchen Coordinator)*

Healthy Hospital Food: Most hospitals met or exceeded their goals (one hospital was unable to achieve its third goal because the planned installation of a hydration station was deemed unfeasible due to existing plumbing). Additionally, environmental scans of each facility before and after the food environment changes documented an overall improvement in the health of food items offered, including three hospitals experiencing increases in fruit and vegetable purchases ranging from 42-50 percent. In total, these four hospitals made changes to their food environment that will reach over 104,000 people annually based on employee, discharge and visitation estimates.

Funding and Sustainability

Seattle Children's Hospital and its partners prioritize sustaining the progress achieved to date. By designing interventions that focus on systems and environmental change rather than on just programmatic interventions, they are able to ensure that outcomes are sustained after external funding is suspended. Changes made to school cafeterias, such as adding fruit and vegetables in more places throughout the line, are environmental changes that should be in place for many years to come and continue to positively impact students' food choices. In the Healthy Hospital Food intervention each hospital developed its own post-funding sustainability plan. Seattle Children's Hospital and their partners have also sought opportunities to connect their work to larger county or statewide initiatives; two hospitals, along with Seattle Children's have committed to ongoing participation in the statewide Healthier Hospital Initiative's Healthier Food Challenge.

With funding from the Prevention and Public Health Fund (Community Transformation Grants) and the Centers for Disease Control and Prevention's base discretionary funding (Partnerships to Improve Community Health), Seattle's Children's Hospital and partners continue their work to address health disparities in South King County. The close collaboration among the core partners of the Healthy King County Coalition (Public Health-Seattle, King County and Seattle Children's Hospital) brings diverse and critical perspectives to helping facilitate healthy communities. The Healthy King County Coalition has been a key to success in ensuring health equity is a core component of this work. The coalition consists of people who are passionate about this work, build momentum and build community engagement. Sustained federal funding has helped to support the coalition over time and to advance the important work to improve health equity in the community in the long run. Health equity in South King County and obesity are community benefit priorities of Seattle Children's Hospital. The focus of these grants on healthy eating and active living and on promoting positive changes that are being made are in close alignment with community benefit priority strategies identified by community and hospital stakeholders.

Conclusion

These three children's health systems – Nemours Children's Health System, Boston Children's Hospital and Seattle Children's Hospital – illustrate the range of innovation taking place in pediatric population health initiatives. From asthma prevention and control to promotion of healthy eating and physical activity to addressing health equity gaps, each health system has worked to address the needs of its unique communities using the tools and resources available. Yet, there is a common thread linking these success stories:

Each organization has been able to positively impact the lives of children as a result of public and private funding. Continued public-private partnerships are necessary to accelerate population health improvement, enable further innovation and ultimately achieve greater impact for children and families across the country.

**This was done because white milk has fewer calories and sugar than chocolate or strawberry milk.*

Acknowledgements and Disclaimers

The following contributed content to this issue brief.

Nemours Children's Health System

Nemours is an internationally recognized children's health system that owns and operates the Alfred I. duPont Hospital for Children in Wilmington, Delaware, along with major pediatric specialty clinics in Delaware, Florida, Pennsylvania and New Jersey. In October 2012, we opened the full-service Nemours Children's Hospital in Orlando, Florida. The Nemours promise is to do whatever it takes to treat every child as we would our own. We are committed to making family-centered care the cornerstone of our health system.

Established as The Nemours Foundation through the legacy and philanthropy of Alfred I. duPont, Nemours offers

pediatric clinical care, research, education, advocacy and prevention programs to families in the communities we serve. We leverage our entire system to improve the health of our communities by creating unique models, creating new points of access and delivering superlative outcomes. Our investment in children is a response to community health needs as Nemours aims to fulfill our mission to provide leadership, institutions and services to restore and improve the health of children through care and programs not readily available.

Boston Children's Hospital

Until every child is well™

Boston Children's Hospital is the nation's premier pediatric hospital. The hospital serves as the community hospital for the children of Boston, provides specialty pediatric care throughout the region, and offers access to innovative, life-saving care to children across the world. Boston Children's vision is to advance pediatric care – both in the local neighborhoods and worldwide – through a commitment to innovation and science-based care. All of our activities are driven by four interwoven missions: providing access to safe, high quality and compassionate clinical care, researching new cures and treatments for diseases, training the next generation of pediatric caregiver and improving the health and well-being of children in the local community.

Boston Children's offers a complete range of health care services for children from birth through 21 years of age. There are approximately 24,000 inpatient admissions each year and the 200+ specialized clinical programs schedule over 581,200 visits annually. Last year the hospital performed more than 26,900 surgical procedures and 158,700 radiological examinations.

Seattle Children's®

HOSPITAL • RESEARCH • FOUNDATION

Consistently ranked as one of the best children's hospitals in the country by *U.S. News & World Report*, Seattle Children's serves as the pediatric and adolescent academic medical referral center for the largest landmass of any children's hospital in the country (Washington, Alaska, Montana and Idaho). For more than 100 years, Seattle Children's has been delivering superior patient care while advancing new treatments through pediatric research. Seattle Children's serves as the primary teaching, clinical and research site for the Department of Pediatrics at the University of Washington School of Medicine. The hospital

works in partnership with Seattle Children's Research Institute and Seattle Children's Hospital Foundation. For more information, visit www.seattlechildrens.org or follow us on Twitter or Facebook.

Moving Health Care Upstream
Collaborating. Innovating. Improving Community Health.

The Moving Health Care Upstream (MHCU) initiative is a comprehensive national effort, designed to cultivate and spread innovative system re-design strategies focused on improving population health. MHCU, funded by a grant from The Kresge Foundation, is led by a team of collaborators from UCLA and Nemours, who have worked closely together for nearly a decade on improving child health policy, systems and population health. The project involves communities, community health centers and community health systems across the U.S., and is supported by the expertise of an advisory committee with extraordinary experience tackling challenging innovation, improvement and systems redesign efforts.

National Early Child Care Collaboratives (NECCC) Acknowledgement and Disclaimer: Nemours is currently funded by the Centers for Disease Control and Prevention (CDC) under a five-year Cooperative Agreement (1U58DP004102-01) to support states/localities in launching early care and education learning collaboratives focused on childhood obesity prevention. The views expressed in written materials or publications, or by speakers and moderators do not necessarily reflect the official policies of the U.S. Department of Health and Human Services, nor does the mention of trade names, commercial practices or organizations imply endorsement by the U.S. Government.

Optimizing Health Outcomes for Children with Asthma in Delaware Health Care Innovation Award (OHO) Acknowledgement and Disclaimer: The project described was made possible by Grant Number 1C1CMS331017 from the U.S. Department of Health and Human Services, Center for Medicare & Medicaid Services. The contents of this presentation are solely the responsibility of the authors and do not necessarily represent the official views of the U.S. Department of Health and Human Services or any of its agencies.

[1] The Moving Health Care Upstream initiative aims to improve health and health equity for children and families within geographies by addressing the social determinants of health through collaborative cross-sector community systems of care.

[2] Optimizing Health Outcomes for Children with Asthma in Delaware (OHO) is the name of Nemours' Health Care Innovation Award, funded by the Center for Medicare and Medicaid Innovation.

[3] Cammisa M, Woods E. Boston Children's Hospital's Approach to Community Health: Using programs to achieve systemic change. Trust for America's Health website. http://healthyamericans.org/health-issues/prevention_story/boston-childrens-hospitals-approach-to-community-health-using-programs-to-achieve-systemic-change. 2015. Accessed April 13, 2015.

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