



November 15, 2017

Amy Bassano
Acting Deputy Administrator for Innovation and Quality
Acting Director, Center for Medicare and Medicaid Innovation
Mail Stop WB-06-05
7500 Security Boulevard
Baltimore, MD 21244

Dear Ms. Bassano,

Nemours Children's Health System (Nemours) appreciates the opportunity to provide comments on the Center for Medicare and Medicaid Innovation's (Innovation Center) Request for Information (RFI) on a new direction. We offer input on how new models can improve the health of the pediatric population.

Nemours is an internationally recognized and integrated children's health system that owns and operates the Nemours/Alfred I. duPont Hospital for Children in Wilmington, Delaware, and Nemours Children's Hospital in Orlando, along with major pediatric specialty clinics in Delaware, Florida, Pennsylvania and New Jersey. 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 in the communities we serve. The Nemours promise is to do whatever it takes to treat every child as we would our own. We care for more than 400,000 children each year and are committed to making family-centered care the cornerstone of our health system.

The Innovation Center has the potential to catalyze models that significantly improve the health of children. Pediatric providers are innovating, and like their adult-focused counterparts, they need support to bring these innovations to scale and to sustain them. We believe that the Innovation Center should play a critical role in supporting and spreading effective existing and emerging innovations designed with children and pediatric providers/health systems in mind that improve health and reduce costs while meeting the needs of the patient and family. Consistent with our mission, we support the Innovation Center's goal to "foster an affordable, accessible healthcare system that puts patients first."

Nemours believes there is great opportunity to address the needs of the pediatric population through models focused on Medicaid and the Children's Health Insurance Program (CHIP). Children represent nearly half of all enrollees in Medicaid, and Medicaid therefore has great potential to drive innovations impacting the pediatric population. For all of the relevant focus areas set forth in the RFI, as the Innovation Center considers its new direction, we ask that you specifically test pediatric models through the Medicaid and CHIP programs. Additionally, we ask that you consider the regional nature of pediatric care. Children cross state lines because they live near a state border or have a specialized need that is best treated outside of their home state. Furthermore, national shortages of pediatric specialists cause many children, particularly those with complex medical conditions, and their families to travel across state lines to access appropriate specialty care. As a result, we encourage the Innovation Center to consider model tests that are responsive to the regional nature of pediatric care, including testing alternative payment models designed specifically for the pediatric population.

Nemours appreciated the Innovation Center's RFI for pediatric alternative payment models earlier this year, and we hope the Innovation Center will move forward with a request for proposals in this area. Additionally, we see great opportunity to advance the needs of the pediatric population within the focus areas set forth in this RFI. We offer the following comments in response to the specific questions posed in the RFI and have also replied through the web form.

Focus Area #2: Consumer-Directed Care & Market-Based Innovation Models

Nemours recognizes the importance of placing individual consumers and patients at the center of health care models. We are especially interested in ensuring that parents of children, particularly young children, have the information and power to make informed decisions about their children's health care needs and treatments. There is a significant need to make the health care system more navigable and transparent, as CMS suggests, for these parents in particular and consumers in general. Therefore, we would suggest that testing new models of payment for care that meets consumer demand is equally important. Not only can consumer-driven care models improve patient satisfaction, but Nemours also believes there is significant opportunity to improve outcomes and reduce health care costs.

Models of care for pediatric patients are not often considered as options for increased savings, with the exception of children with complex medical needs. Therefore, more should be done to ensure that parents have the information to choose the most appropriate provider for their children's health needs. In addition, investing in health and wellbeing before a child becomes ill could avert future costs associated with acute or chronic illness. This is especially true for Medicaid and CHIP, wherein pediatric patients may be beneficiaries for multiple years, thereby creating the potential for these programs to realize a return on investment in prevention and early intervention.

Meeting the needs of consumers means that we need to provide high quality care in the places where children and families live, learn and play, not just within the four walls of the health care system. For children enrolled in Medicaid and CHIP, CMS should test models in which access to services is expanded to those places – schools, child care sites, at home and in the community – through the use of 21st century technology like mobile apps, telehealth and remote patient monitoring. In order to achieve CMS' goals of increased transparency and enhance the consumer experience, we recommend packaging digital health tools in a single model to make health care more navigable.

At Nemours, we are working to build access points and service lines that meet our patients and families where they are. For example, we are developing tools and processes to help schools and childcare programs easily access Nemours' unique health resources for educators, parents, and students. A pilot project between Head Start, Early Head Start, a Federally Qualified Health Center (FQHC), and Nemours is underway to streamline communication, enhance health care and health information access, and improve health outcomes among participants. In addition, we will soon launch a telehealth consultation model for parents to review their preschooler's early literacy development in order to promote reading success as a long-term strategy for improving adult health literacy capabilities and health outcomes across the lifespan. Most closely aligned with a potential test model are the two projects outlined in more detail below.

Nemours is in the process of piloting a model of care for medically complex children leveraging our partnerships with existing home nurse programs to bring routine specialty care visits into the home instead of unnecessarily requiring the family to travel to the medical center because we know that often, a majority of the costs are post-discharge, in post-acute or home health care. To accomplish this, we will leverage our telehealth infrastructure and deploy remote patient monitoring devices that will allow our physicians to listen to heart and lung sounds and look into the child's ear. We have chosen children with complex conditions that require more than one specialist and who have demonstrated high utilization, principally through emergency room visits and admissions. We will test this model and have data to report at a later date. We expect to find lower utilization due to early detection and intervention and subsequent cost reduction. We also believe that by helping the children get better in their home setting, we will increase patient and family satisfaction.

Nemours. Children's Health System

We are also building an app that integrates all of Nemours' digital assets including telehealth, the patient portal, and education with the goal of simplifying the user experience of navigating the healthcare system and providing patients and families tools they need in order to better manage their care through the types of digital technology they are using every day in other aspects of their lives. Our first test group will be children with asthma as this chronic condition is the number one cause of emergency room visits and admissions. We want to support families in the management of this chronic condition between visits, whether it's routing them to the appropriate level of care at the right time or supporting the relationship between the patient and provider so there is a better understanding of what's happening with the patient in real-time. We believe and will test our theory that focusing on improved outcomes and partnering with families in their management by utilizing these innovative tools will result in reduced costs while better meeting the needs of consumers. We anticipate having test data to report in 2018 and would happy to share with CMS and the Innovation Center.

The pediatric asthma model (which in the future we plan to apply to additional chronic diseases) depends upon the use of remote patient monitoring (RPM) devices to monitor our patients and analyze acute episodes in real-time. RPM can be used for many disease states, and has the potential to prevent or shorten acute episodes of care. In 2016, AHRQ published an overview of the evidence for various telehealth interventions, including remote patient monitoring (RPM).¹ As is typical in many areas of children's health, researchers found that telehealth applications within pediatric cancer and chronic pediatric health conditions are areas not well represented in the research. However, one of their major findings was that sufficient evidence exists to support the effectiveness of RPM in patients with chronic conditions. The review found 49 studies that showed either potential benefit or positive benefit to the use of RPM for respiratory disease. With regard to cost and utilization, 24 studies found potential benefit for patients with mixed chronic conditions and 7 studies found benefit, while 23 found potential benefit for patients with respiratory disease.

In addition to the large number of studies that examine RPM in adults with chronic conditions, several studies have examined the use of RPM on younger cardiology patients. For example, a 2016 study examining RPM in young patients with cardiac implantable devices found that the small number of alerts that required physician review were recognized 76 days prior to the next scheduled appointment.² Additionally, most of the patient-initiated transmissions proved to be non-issues after physician review, effectively avoiding unnecessary hospital admissions. Similarly, a 2014 study of pediatric patients with cardiac implantable devices also found that RPM allows for timely identification of arrhythmias with great accuracy, potentially allowing fewer clinical visits.³ Overall, RPM within pediatric cardiology improves care, increases patient satisfaction, and allows for the timely identification and resolution of problems.⁴ More broadly, RPM programs can reduce costs associated with transportation and time off from work for family members, and reduced clinic time for providers.⁴

To build on these promising early findings, Nemours suggests testing a value-based payment model with a small set of vanguard health systems and/or providers (e.g., remote home health) that encourage prevention, early intervention and diversion of care to the most appropriate venue using telehealth, remote

¹ AHRQ, 2016. Telehealth: Mapping the Evidence For Patient Outcomes From Systematic Reviews. Retrieved from: https://ahrq-ehc-application.s3.amazonaws.com/media/pdf/telehealth_technical-brief.pdf

² Silveti, M. S., Saputo, F. A., Palmieri, R., Placidi, S., Santucci, L., Di Mambro, C., . . . Drago, F. (2016;2015;). Results of remote follow-up and monitoring in young patients with cardiac implantable electronic devices. *Cardiology in the Young*, 26(1), 53-8. doi:10.1017/S1047951114002613

³ Malloy, L.E., Gingerich, J., Olson, M.D. et al. Remote Patient Monitoring of Cardiovascular Implantable Devices in the Pediatric Population Improves Detection of Adverse Events. *Pediatr Cardiol* (2014) 35: 301. <https://doi-org.proxygw.wrlc.org/10.1007/s00246-013-0774-5>

⁴ Olen, M., & Dechert-Crooks, B. (2017). Implantable cardiac devices: The utility of remote monitoring in a paediatric and CHD population. *Cardiology in the Young*, 27(S1), S143-S146. doi:10.1017/S1047951116002390

patient monitoring and access to care in non-traditional settings for children with chronic disease. As it currently stands, the business case for meeting consumer needs is woefully underdeveloped due to policy barriers that affect providers' ability to be reimbursed for 21st century care. The greatest challenge we face right now is that telehealth reimbursement policy varies widely across states, and Medicare and many Medicaid/CHIP programs do not allow reimbursement for at-home visits using RPM. In our comments related to Medicaid, we propose a test model to address many of the policy barriers impacting telehealth. With relation to RPM, in states where Medicaid does reimburse for RPM, the restrictions for RPM use are so great that RPM programs cannot reach scale. Only 21 state Medicaid programs currently reimburse for RPM in some fashion; however, the requirements and restrictions for RPM vary significantly across states.⁵ Some states restrict the clinical conditions or symptoms which can be monitored or limit the information that can be collected, for example.

The Innovation Center could work with providers to test a payment model with a vanguard set of health systems on the cutting edge of consumer-focused care that addresses the needs of consumers and builds evidence and best practices to support similar models across the nation. Such a payment model could focus on pediatric chronic disease management using a suite of digital health tools including telehealth; remote patient monitoring; direct message or other secure messaging with the child's care team; text message reminders for visits, health maintenance, environmental alerts (e.g. for asthma patients); reimbursement for connections between health care and other settings (e.g. schools, child care) to ensure coordinated care. Partner sites should be reimbursed for facilitating visits, and providers like school nurses or other clinical professionals who routinely participate in a child's care should be considered as part of the child's care team.

Caring for children, Nemours sees significant opportunity in the Medicaid and CHIP programs for consumer-driven care, as outlined above. While we do not recommend that the Innovation Center prescribe a specific payment model to accompany the proposed model above, we do believe in collaborating with States to come up with different models that are feasible and sustainable. We also believe that a risk-based or value-based approach makes the most sense for consumer driven care that is focused on chronic disease management, lower utilization and prevention as a primary pillar of care.

Focus Area #6: State-Based and Local Innovation, including Medicaid-focused Models

Nemours is supportive of the inclusion of demonstration models that are designed to advance innovation for the Medicaid population. *In particular, Nemours recommends inclusion of policies within the guiding principles of value-based payment models in Medicaid and CHIP that:*

- target the pediatric population;
- address underlying social determinants that have a major impact on the health of the child and family;
- leverage innovations in consumer-focused technology and digital health tools including telehealth, remote patient monitoring, and precision medicine to help families better partner with their health care providers to improve their health.

There is a strong rationale for testing value-based payment models to improve the health of children and families through a holistic, community-based approach that leverages technology and recognizes the multi-faceted determinants of health. Decades of research concludes that social factors (e.g.

⁵ Center for Connected Health Policy, 2017. State Telehealth Laws and Reimbursement Policies. Retrieved from: <http://www.cchpca.org/sites/default/files/resources/Telehealth%20Laws%20and%20Policies%20Report%20FINAL%20Fall%2017%20PASSWORD.pdf>

socioeconomic status, education, housing, transportation, access to food, etc.)⁶ have a powerful impact on health, especially in childhood.⁷ It is estimated that medical care is only responsible for 10 to 15 percent of preventable mortality in the United States.⁸

Additionally, research has shown that the foundations of good health take root in the earliest years⁹ and that children with health problems in early childhood have poorer long-run health, a higher likelihood of being on social assistance, and lower educational outcomes.¹⁰ “Developmental, behavioral, educational and family problems in childhood can have both lifelong and intergenerational effects. Identifying and addressing these concerns early in life are essential for a healthier population and a more productive workforce.”¹¹

Given what we know about the importance of the early years and social determinants to lifelong health, *Nemours recommends that the Innovation Center test models that incentivize states and localities to address the health needs of children and families by connecting health care with other providers in the community to address the social needs impacting health. With advances in remote patient monitoring and telehealth (as described below), partners across the community – from schools to early care and education to community-based organizations – can work with health care providers to empower families to become more active participants in their health and the health of their children.* CMS can play a powerful role in catalyzing these partnerships. Additionally, in testing these models, we recommend that CMS simplify reporting and data collection requirements for awardees so that they are not discouraged from applying due to overly burdensome (and therefore costly) requirements.

As noted above, Nemours recommends that the Innovation Center provide flexibility to states and communities to test value-based models that focus on Medicaid and CHIP beneficiaries, particularly the pediatric population, based on local needs. In particular, we recommend testing the following three (3) model designs. (Numbers 1 and 2 are described in more detail in the next section).

- 1. Telehealth –The use of technology is growing in healthcare as the opportunities for cost reduction and better outcomes are demonstrated. However, Medicaid and CHIP lack policies and guidance needed to facilitate the use of technology and instead, restrict the ability of providers to utilize these tools despite the growing demand among consumers. Among these new tools are telehealth and remote patient monitoring in the pediatric space. The Innovation Center should consider testing a pediatric telehealth model for Medicaid enrollees.**

Nemours' experience with telehealth is consistent with the overarching goals of improving care while reducing costs and meeting consumer needs. In 2014, Nemours launched a pediatric

⁶ Braveman, Paula MD, MPH and Laura Gottlieb, MD, MPH. The Social Determinants of Health: It's Time to Consider the Causes of the Causes. Public Health Rep. 2014 Jan-Feb; 129(Suppl 2): 19–31. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3863696/>

⁷ Halfon, Neal. Kandyce Larson and Shirley Russ. Why Social Determinants. Healthcare Quarterly Vol. 14Special Issue. October 2010. <http://www.ncbi.nlm.nih.gov/pubmed/20959743>

⁸ Braveman, Paula MD, MPH and Laura Gottlieb, MD, MPH. The Social Determinants of Health: It's Time to Consider the Causes of the Causes. Public Health Rep. 2014 Jan-Feb; 129(Suppl 2): 19–31.

⁹ Harvard Center on the Developing Child. “The Foundation of Lifelong Health Are Built in Early Childhood.” <http://46y5eh11fhgw3ve3ytpwxt9r.wpengine.netdna-cdn.com/wp-content/uploads/2010/05/Foundations-of-Lifelong-Health.pdf>

¹⁰ Currie, J., M. Stabile, P. Manivong, and L.L. Roos. 2010. “Child Health and Young Adult Outcomes.” Journal of Human Resources 45(3):517–48

¹¹ American Academy of Pediatrics Policy Statement. 2012. Early childhood adversity, toxic stress, and the role of pediatricians. Translating developmental science into lifelong health. *Pediatrics* 129(1), <http://pediatrics.aappublications.org/content/129/1/e224?sid=339e9397-1430-4565-8cf5-a145112d98ec>.

Nemours. Children's Health System

telehealth program and now provides telehealth services across six states in over 29 specialties, including a 24/7 on-demand pediatric care, into community health system partners, primary care clinics, schools, cruise ships and in the home with plans to expand care into the home as remote monitoring devices mature in the pediatric market space. Through this program, Nemours has demonstrated high quality care, cost-savings, and reductions in unnecessary, high-cost utilization, primarily for children with low-acuity conditions.

Since 2014, we have collected data on telehealth encounters and have also conducted multiple surveys to understand the demand for and impact of telehealth services. We have found that:

- Sixty-four percent of parents polled have used or plan to use telemedicine within the next year for the child.
- Fifteen percent of parents have tried these services, but a strong majority is receptive to online doctor visits for common childhood ailments and routine well-child visits. Compared to a similar study conducted by Nemours in 2014, parents' use of online doctor's visits, while still relatively low, has grown by 125 percent.
- Among parents who have tried an online doctor visit for their child, 97.5 percent rated the experience as equal to or better than an in-office visit.

Regarding Nemours' program, we have found that:

- Patient families rate the service of the provider at 5 out of 5 stars 94 percent of the time and rate the platform 5 out of 5 stars 92 percent of the time, with an average wait time under 5 minutes.
- The periods of highest utilization were afterschool hours from 4pm to midnight, which are predominantly outside regular business hours.
- As part of a Press Ganey pilot that Nemours participated in, Nemours' score for "likelihood to recommend" was 88.5, putting the program in the 95th percentile.
- A majority of those who have already had an online doctor visit for their child also looked to telemedicine for more immediate care than waiting for an in-office visit (53.4 percent) or for an after-hours medical opinion (52.3 percent).

Since the launch of Nemours' 24/7 on-demand service, survey respondents reported that they would have gone to the following if the 24/7 on-demand telehealth service was not available, 25 percent to emergency room, 34 percent to urgent care center, 27 percent to primary care and 2 percent to retail health center. The diversion of care to a lower acute virtual setting has cost saving implications as estimated in a study conducted by HealthCore Inc. and LiveHealth Online earlier this year¹². Retail Health Centers, Urgent Care Centers, Emergency Rooms and primary care office visits were estimated to be \$36, \$153, \$1735, and \$162 more expensive than virtual visit episodes, respectively, including medical and pharmacy costs. There is great potential for Medicaid to realize some of these cost savings through a model tested at the Innovation Center that focuses on meeting the needs of consumers where and when they seek out services.

2. **Accountable Communities for Health for Children and Families** – Prevention, early intervention, and empowering families to better address the needs of children are at the core of optimal child health and well-being. An Accountable Community for Health is a structured collaboration among health care, public health, and other partners (e.g. schools, community-based human services agencies) to improve health, safety and equity within a defined geographic area

¹² Gordon AS, Adamson WC, DeVries AR. Virtual Visits for Acute, Nonurgent Care: A Claims Analysis of Episode-Level Utilization. J Med Internet Res 2017;19(2):e35

through comprehensive and coordinated strategies.¹³ An ACH for Children and Families (ACHCF) seeks to optimize health trajectories of children and their primary caregivers in a geographic area (in this case Medicaid and CHIP beneficiaries) while reducing the total cost of care for that population over time.¹⁴ ACHCF models (especially models enhanced by telehealth and other consumer digital tools) have the potential to help health care and social services providers *connect* families with the services they need (e.g. food, housing, transportation, job placement, child care placement, etc.) at the right time and at the right place in the home or in the community in order to improve outcomes for children and families.

3. **Closed Loop Community Care Coordination Systems to Connect Beneficiaries with Services and Close the Feedback Loop** – One critical element of an ACHCF is a closed loop community care coordination system that helps ensure that individuals are referred to and obtain the medical, behavioral, and social services they need across sectors without duplication, including ensuring that the referring provider is notified when services are rendered. The Innovation Center could test value-based payment models to both catalyze and sustain bi-directional, “no wrong door” closed loop systems that 1) identify/surface individuals in need of service; 2) refer them to needed health or social service providers; 3) close the feedback loop to notify the referring provider when services are rendered; 4) rate the service provider in a transparent way; and 5) track outcomes. A few basic tenets to consider in model design include the following:
 - A. **Testing of closed loop community care coordination systems should be completed as part of a larger ACHCF model, as well as independently to address the needs of communities in varying stages of readiness for integration.**
 - B. **Payment models tested should account for:**
 - **Upfront costs of implementing these systems; and**
 - **Ongoing costs needed to sustain and maintain the systems, including the costs of navigators who perform the connections to services.**
 - C. **Model tests should include either pre-post comparisons or a control community to help determine the impact of addressing health-related social services on the health care costs and utilization of the child and family.**
 - D. **Model test should be flexible, recognizing that states, communities and providers may have some combination of the 5 elements listed above in place already and may need to mix and match systems according to local needs and assets.**

To support the above models, *Nemours recommends that CMS encourage and provide states with the flexibility (through waivers or other authorities) to braid funds from different federal, state and private sources to achieve common goals, with a focus on simplification in reporting processes.* In doing so, the Innovation Center would help catalyze public-private partnerships that incentivize local innovation to meet the needs of families and communities.

¹³ Mikkelsen L., W. L. Haar, L. J. Estes, and V. Nichols. 2016. The Accountable Community for Health: A model for the next phase of health system transformation. Prevention Institute. <https://www.preventioninstitute.org/publications/accountable-community-health-emerging-model-health-system-transformation>.

¹⁴ Gratale, D., and D. Chang. 2017. Defining an Accountable Community for Health for Children and Families. *NAM Perspectives*. Discussion Paper, National Academy of Medicine, Washington, DC. <https://nam.edu/Defining-an-accountable-community-for-health-for-children-and-families>.

Model Design & Structure

1. Telehealth

A large portion of the Nation's pediatric patient population are Medicaid enrollees. In each state, telehealth is defined, regulated and reimbursed differently by Medicaid and other payers, resulting in high administrative and transaction costs for pediatric telehealth programs. Furthermore, pediatric telehealth, much like pediatric health care in general, faces unique challenges and opportunities when compared with its adult population counterpart. For example:

- Pediatric patients who are covered by Medicaid experience a variation in covered telehealth services, depending upon their state, a barrier that does not exist for the Medicare population.
- Effective pediatric care requires pediatric specialty providers, and many patients are located in a different state than their doctor(s). The existing licensure compact has not demonstrated efficacy as providers must still obtain a license in each state and the cost for multiple licensures is in fact higher through the compact.
- State Medicaid fee schedules sometimes restrict the ability to bill and receive reimbursement for site origination fees. This is a significant barrier that does not exist in the Medicare program.

Yet, as previously mentioned, when used appropriately, telehealth can deliver convenient, high quality, low-cost care that benefits patient families, payers and health systems. We believe there is an opportunity for the Medicaid program to reap cost-savings and promote better health outcomes for children by working with states to provide additional opportunities and flexibility to expand coverage for pediatric telehealth services. *Nemours recommends a test model outlined below.*

CMS Demonstration Pilot to Explore Opportunities in Pediatric Telehealth

To help ensure high quality care for all Medicaid enrolled children, we recommend that CMS launch a pilot program wherein a group of states – likely in the same region – would agree to develop and test a coordinated approach that addresses the principal barriers (for example, licensure and reimbursement disparity) with an evaluation based on access to care, quality of care, patient/family satisfaction and cost-savings.

Such a pilot would provide multi-state licensure portability for Medicaid providers in that region and a standard reimbursement policy (e.g. covered services, geographic requirements, payment parity, fee schedules), of course allowing for reimbursement rates appropriate for the respective states. The demonstration could also provide the option to focus on targeted services for high cost conditions, such as asthma, diabetes, kidney disease and others, and could explore best practices and policy related to remote patient monitoring.

2. ***Accountable Communities for Health for Children and Families***

Nemours commends the Innovation Center for testing an Accountable Health Community model. An ACHCF model could serve as a more flexible next generation model that is focused on addressing the unique needs of children and families, through a less restrictive model design that is initially tested in a vanguard set of communities (3-5). An ACHCF model test that is rooted in community and beneficiary engagement could entail the following core principles:

- **Communities should not be required adopt a specific payment model but rather should have the flexibility to work with payers and their states to develop and test a payment model, so long as it is value-based.** By initially testing a portfolio of payment designs that span

Nemours. Children's Health System

the range of options from pay for performance to bundles to outcomes tied to full capitation (in a limited number of communities), the Innovation Center would gain knowledge that would help to inform a larger-scale test in the future. For example, the Innovation Center could test models in which a Managed Care Organization (MCO) and ACH are separate entities, as is the case in Washington state, as well as a structure in which there is one risk-bearing entity (as is the case with Oregon's Coordinated Care Organizations (CCOs)) that includes the MCO and ACH as partners within the CCO. Health care costs and outcomes could be tracked for each structure and used as a basis for comparison.

- **As noted above, states should have the flexibility braid various funding sources (through waivers or other authorities), and communities should be encouraged to leverage funds from public and private sources.** In cases in which braiding of funds occurs, CMS project officers should collaborate with other funders to create joint data collection and reporting requirements to ensure an undue burden is not placed on communities. Coordination needs to occur at the funder level to ultimately maximize impact and integration at the community level.
- **CMS should ensure that awardees explore a mix of short-term, intermediate and long-term outcomes metrics to track progress and outcomes for the health and wellbeing of child and family for a geographic region.** This should explicitly include a process wherein the state, community partners and other stakeholders mutually agree on metrics, based on local needs. Especially if non-CMS funding sources are supporting an awardee, the awardee should be encouraged to track metrics that go beyond health care (e.g. kindergarten readiness, food security, etc.).
- **The Return on Investment timeframe for an ACHCF should be seven to ten years, given the focus on preventing and opposed to reducing disease, and optimizing health.** Older adults are a costlier, sicker population than children, and therefore achieving cost savings in the short-term is a more reasonable proposition for the older population. As a result, adjustments need to be made regarding the expected timeframe for results.¹⁵
- **CMS should consider inclusion of a set of core elements for an ACHCF model. A framework can be found [here](#).**
- **CMS should ensure that a model tests whether a stand-alone ACHCF would achieve the scale and eventual cost savings needed for success or whether an ACHCF should be embedded in a broader ACH (with some shared infrastructure, data sharing, and so on, but distinct payment models and metrics) to achieve financial sustainability.** Both models should be tested and studied.

Beneficiary Engagement

Especially for community-focused models, beneficiary engagement is critical. Below are two suggestions for how CMS could help to engage beneficiaries to participate in new models.

- Provide preference to applicants that include a focus on engagement of CMS beneficiaries in model design as part of their application submission to the Innovation Center. This could include beneficiary input in the application itself.

¹⁵ Gratale, D., and D. Chang. 2017. Defining an Accountable Community for Health for Children and Families. *NAM Perspectives*. Discussion Paper, National Academy of Medicine, Washington, DC. <https://nam.edu/Defining-an-accountable-community-for-health-for-children-and-families>.

- Provide incentives to awardees that have high levels of engagement and satisfaction from community residents who are CMS beneficiaries.

Focus Area #7: Mental and Behavioral Health Models

Nemours strongly supports and encourages the Innovation Center to focus on demonstration programs related to mental and behavioral health. *We would also suggest specific inclusion of Medicaid/CHIP models that address the needs of the pediatric population within this focus area.*

Research has shown that the foundations of health take root in the earliest years. Adverse childhood experiences occurring in early childhood can have lifelong consequences, impacting physical and mental well-being and leading to high-cost behavioral health and related conditions. For example, traumatic experiences such as abuse or persistent poverty can disturb neurobiological systems that guide physiological and behavioral responses to stress and permanently increase the risks of disease.¹⁶ Toward that end, in general, we suggest that the Innovation Center test models to build resilience within families and communities, starting in the early years.

Additionally, we are supportive of CMS' potential focus on opioids. Within the opioid portfolio, we believe that an area of particular focus should include Neonatal Abstinence Syndrome (NAS).

NAS is a drug-withdrawal condition in newborns caused by prenatal exposure to addictive illegal or prescription drugs.¹⁷ NAS babies exhibit a wide range of symptoms within the first few days of life, including irritability, gastrointestinal dysfunction, feeding difficulties, respiratory distress, neurologic problems, high-pitched and excessive crying, tremors, and temperature instability.^{18, 19, 20, 21, 22} Affected babies require extended time in the hospital and more complex treatment options than babies born without NAS. In 2012, the average length of stay (LOS) for NAS babies was 16.9 days compared to 2.1 days for normal birth babies.²³

¹⁶ Harvard Center on the Developing Child. "The Foundation of Lifelong Health Are Built in Early Childhood." <http://46y5eh11fhgw3ve3ytpwxt9r.wpengine.netdna-cdn.com/wp-content/uploads/2010/05/Foundations-of-Lifelong-Health.pdf>

¹⁷ Jason, N., Gastonguay, M., Adeniyi-Jones, M. D., Susan, C., Moody, D. E., Kraft, M. D., & Walter, K. (2017). Population Pharmacokinetic and Pharmacodynamic Analysis of Buprenorphine for the Treatment of Neonatal Abstinence Syndrome.

¹⁸ Tolia, V. N., Patrick, S. W., Bennett, M. M., Murthy, K., Sousa, J., Smith, P. B., ... & Spitzer, A. R. (2015). Increasing incidence of the neonatal abstinence syndrome in US neonatal ICUs. *New England Journal of Medicine*, 372(22), 2118-2126.

¹⁹ Lee, J., Hulman, S., Musci Jr, M., & Stang, E. (2015). Neonatal abstinence syndrome: influence of a combined inpatient/outpatient methadone treatment regimen on the average length of stay of a Medicaid NICU population. *Population health management*, 18(5), 392-397.

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²⁰ Davies, H., Gilbert, R., Johnson, K., Petersen, I., Nazareth, I., O'donnell, M., & Gonzalez-Izquierdo, A. (2015). Neonatal drug withdrawal syndrome: cross-country comparison using hospital administrative data in England, the USA, Western Australia and Ontario, Canada. *Archives of Disease in Childhood-Fetal and Neonatal Edition*, fetalneonatal-2015.

²¹ Bagley, S. M., Wachman, E. M., Holland, E., & Brogly, S. B. (2014). Review of the assessment and management of neonatal abstinence syndrome. *Addiction science & clinical practice*, 9(1), 19.

²² Jones, H. E., & Fielder, A. (2015). Neonatal abstinence syndrome: Historical perspective, current focus, future directions. *Preventive medicine*, 80, 12-17.

²³ Patrick, S. W., Schumacher, R. E., Benneyworth, B. D., Krans, E. E., McAllister, J. M., & Davis, M. M. (2012). Neonatal abstinence syndrome and associated health care expenditures: United States, 2000-2009. *Jama*, 307(18), 1934-1940.

Nemours. Children's Health System

From 2000 to 2012 in the United States, the incidence of NAS increased nearly five-fold, from 1.2 to 5.8 per 1000 hospital births, and costs have also risen^{23, 24, 25} The average total costs of care for a NAS-related birth at hospital discharge increased significantly from 2000 to 2012, starting at \$39,400 and increasing to \$66,700 (inflation-adjusted). Pharmacological interventions, a common approach for treating babies with NAS, can increase the cost of care even more, ranging from \$86,900-\$100,000 in 2012. This is a stark contrast compared to the range for an uncomplicated term baby, which was \$3,400 - \$3,600 in the same year.²⁵ Recent data shows that from 2009 to 2012, the combined total hospital charge for NAS across all-payers nearly doubled from \$732 million to \$1.5 billion with 80% covered by Medicaid. Medicaid payments to hospitals for NAS during the same time period increased from \$564 million to \$1.2 billion.²⁵ Medicaid is currently paying for more than 80% of all NAS-related cases.²⁶ The increasing prevalence and costs associated with NAS present an opportunity for the Innovation Center to work with providers and communities to improve care, improve health and reduce costs to Medicaid.

NAS is a complex issue that requires a multi-faceted clinical and community response that addresses the needs of the mother and the baby. Since there is great potential to improve care, reduce LOS and ultimately reduce costs to the health care system through a focus on improving NAS treatment approaches, *Nemours recommends that CMS work with providers to facilitate the testing of value-based payment models under Medicaid and CHIP for the mother-baby dyad.* This could include early identification, standardized pharmacological and non-pharmacological protocols for the baby, mental health and parenting supports for the mom, and supporting connections (via a navigator) to social services (e.g. food, housing, job placement, transportation, etc.) for the mom and baby prior to discharge

Nemours recommends the following guiding principles and key components for testing NAS value-based payment model designs.

Encouraging Collaboration: A comprehensive response to opioid abuse requires collaboration among many sectors beyond health. As such, it is important that CMS encourage awardees to work with public health and other community agencies regarding partnering on consistent and reliable methods for coding and collecting data as well as comprehensive approaches to prevention, treatment and early detection of NAS. This includes promoting awareness of NAS and prenatal substance use through education of women of child-bearing age regarding the impacts of drug use on a baby, as well as screening women of childbearing age during routine medical visits once rapport and trust is established. While CMS has an important role to play in terms of catalyzing value-based payment models for NAS, it is one piece of a larger community and state-based approach. Awardees should be encouraged to connect with other partners to develop comprehensive approaches, leveraging other federal, state and private funds. Comprehensive approaches should include working with other stakeholders in the community who provide key services (e.g. housing, transportation, education, food services, etc.) as well as child welfare agencies and local law enforcement to develop supportive, non-punitive approaches that address the mental health and social needs of the families, as described below.

Standardizing care and treatment: The Government Accountability Office (GAO) recently published a report recommending standardized approaches for screening and treating NAS-

²⁴ NIH National Institute on Drug Abuse. "Dramatic Increases in Maternal Opioid Use and Neonatal Abstinence Syndrome." <https://www.drugabuse.gov/related-topics/trends-statistics/infographics/dramatic-increases-in-maternal-opioid-use-neonatal-abstinence-syndrome>

²⁵ Patrick, S. W., Davis, M. M., Lehmann, C. U., & Cooper, W. O. (2015). Increasing incidence and geographic distribution of neonatal abstinence syndrome: United States 2009 to 2012. *Journal of Perinatology*, 35(8), 650-655.

²⁶ Newborn Health: Federal Action Needed to Address Neonatal Abstinence Syndrome. (2017, October 4). Retrieved October 4, 2017, from The Government Accountability Office website: <http://www.gao.gov/assets/690/687581.pdf>

affected babies.²⁶ Effective standardized protocols can include NAS evaluation and treatment, scoring practices (used to screen newborns and to determine the appropriate course of treatment), as well as pharmacologic (e.g. buprenorphine, methadone or morphine) and non-pharmacologic interventions (e.g. breastfeeding, soothing, cuddling, swaddling, etc.) that are evidence-informed.^{26, 27} Hospitals with rigorous weaning guidelines (to help babies wean off opioid dependence) have seen lower health care utilization and improved outcomes such as shorter treatment time, reduced LOS and lower rates of adjunctive therapy.²⁸ Value-based models focusing on NAS should test the range of evidence-informed treatment protocols.

Building resilience for mothers and families by focusing on social services connections, mental and behavioral health and parenting support: Linking families with needed mental, behavioral and social services should be accounted for in value-based payment models for NAS. Often, even when NAS surviving babies are discharged from the hospital, mothers find themselves without the resources and support needed to care for their babies. A 2015 investigation by Reuters found that many babies die after being discharged from the hospital. For 75 percent of these cases, the mothers caused the deaths for various reasons related to neglect. When asked in retrospect, many of the mothers wished for social services interventions.²⁹

As a result, in addition to the treatment options outlined above for babies with NAS, Nemours recommends the following three-pronged approach to support the mother (which is necessary to ultimately support the baby's health and well-being):

- 1) **Connections to social services** – As described above, it is critical that connections are made to a range of social services providers (e.g. housing, food, transportation, financial counseling, etc.). Initiation of connections should begin as soon as possible, even in the pre-natal period. A comprehensive model should include a navigator (e.g. social worker, care coordinator or community health worker) who actively connects the mother with these services and follows up post-discharge and who is coordinating with the services the mom may be receiving at a Medication Assistance Treatment (MAT) center. Note: Innovation Center funds would not support the actual provision of the service but rather the connection to the service.
- 2) **Mental and behavioral health supports** - Mothers of NAS babies could also benefit from programs that address their mental and behavioral health needs. For example, Thomas Jefferson University Hospital in Philadelphia, PA has a program that provides a 12-week mindfulness-based parenting intervention for mothers on medication-assisted treatment (MAT) for opioid use disorder. Results show that participating mothers' stress levels significantly decreased after the intervention.³⁰ There are other programs across the nation that provide crisis stabilization beds and counseling for recovering moms. By helping mothers cope with stress better and addressing their mental health needs, these types of interventions can help change the potential course of trauma and improve both children's and

²⁷ Patrick, S. W., Schumacher, R. E., Horbar, J. D., Buus-Frank, M. E., Edwards, E. M., Morrow, K. A., ... & Soll, R. F. (2016). Improving care for neonatal abstinence syndrome. *Pediatrics*, e20153835.

²⁸ Hall, E. S., Wexelblatt, S. L., Crowley, M., Grow, J. L., Jasin, L. R., Klebanoff, M. A., ... & Walsh, M. C. (2015). Implementation of a neonatal abstinence syndrome weaning protocol: a multicenter cohort study. *Pediatrics*, 136(4), e803-e810.

²⁹ Wilson, D. & Shiffman, J. (2015). Newborns die after being sent home with mothers struggling to kick drug addictions. Reuters Investigates. Retrieved from <http://www.reuters.com/investigates/special-report/baby-opioids/>

³⁰ Short, V. L., Gannon, M., Weingarten, W., Kaltenbach, K., LaNoue, M., & Abatemarco, D. J. (2017). Reducing Stress Among Mothers in Drug Treatment: A Description of a Mindfulness Based Parenting Intervention. *Maternal and child health journal*, 21(6), 1377-1386.

families' lives.

3) Follow-up parenting supports in the home - There is growing body of evidence-based research suggesting that improving parenting skills and competencies can help support a child's health and development.³¹ One example of an evidence-based parenting program is the Nurse-Family Partnership (NFP). The program trains nurses to conduct regular home-visits to first-time, low-income mothers starting at pregnancy and continuing through the child's second birthday. Results from the program showed significant reductions in negative outcomes such as pregnancy complications, childhood injuries, and developmental challenges.³² Similar in-home support could be provided to moms and NAS babies, post-discharge.

Given the complexities of NAS at all levels from conception to post-birth, Nemours recommends that CMS consider testing a variety of payment models to support the comprehensive model described above. This could include bundled payments that start at the time of NAS identification and extend at least 6 months post-discharge to track outcomes during the critical post-discharge period. Components of the bundle are described above (pharmacological and non-pharmacological treatment options for the baby, in addition to mental and behavioral health support for the mom, connections to social services, with follow-up from a navigator, and parenting supports). Another payment model that could be tested is pay for performance, with outcomes that include survival rates for the baby, health care utilization and spending. Furthermore, CMS could test a hybrid model such as a monthly case-management fee for NAS babies. In the longer-term, CMS could also work with awardees to track developmental outcomes for NAS babies to determine if interventions had any impact on these outcomes over time. These payment models should be coordinated with broader prevention and early detection strategies that states and communities are pursuing so that the model is leveraging the other services and supports available but not paying for them and most importantly, is ensuring a coordinated and comprehensive response that has great potential to improve outcomes and reduce Medicaid costs.

Beneficiary engagement is critical for both clinical and community models. Below are two suggestions for how CMS could help to engage beneficiaries to participate in new models.

- Provide preference to applicants that include a focus on engagement of beneficiaries in model design as part of their application submission to the Innovation Center. This should even include beneficiary input in the application. With NAS, this is particularly challenging given the stigma and legal issues that women could face. Input from opioid-addicted women is critical, and awardees should be encouraged to solicit it.
- Provide incentives to awardees that have high levels of engagement and satisfaction from community residents who are Medicaid beneficiaries, as well as philanthropic foundations, MATs, state health departments, Healthy Start, and other community partners.

Conclusion

Nemours stands ready to assist the Innovation Center in any way possible to advance sound health policy that improves access and outcomes for all children, including those who are enrolled in Medicaid and CHIP. We look forward to continued work with the Innovation Center, and thank you in advance for your consideration of or recommendations. We would welcome the opportunity to meet with you to discuss

³¹ National Academies of Sciences, Engineering, and Medicine. 2016. Parenting Matters: Supporting Parents of Children Ages 0-8. Washington, DC: The National Academies Press. <https://www.nap.edu/catalog/21868/parenting-matters-supporting-parents-of-children-ages-0-8>

³² Miller, T. R. (2015). Projected outcomes of nurse-family partnership home visitation during 1996–2013, USA. *Prevention Science*, 16(6), 765-777.

Nemours. Children's Health System

our recommendations in more detail. Please do not hesitate to have your team reach out to Daniella Gratale, Director, Office of Child Health Policy and Advocacy at Daniella.Gratale@nemours.org or Katie Boyer, Manager of Policy & Advocacy at Katie.Boyer@nemours.org with any questions or requests for additional information.

Sincerely,

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