CHILDREN'S HOSPITAL ASSOCIATION

New Payment Model Guidance for Organizations Caring for Children with Complex Medical Conditions: The CARE Award

From the Coordinating All Resources Effectively (CARE) for Children with Medical Complexity Award funded by the Center for Medicare and Medicaid Innovation

April 2017

This publication was made possible by Grant Number 1C1CMS331335 from the Department of Health and Human Services, Centers for Medicare & Medicaid Services. The contents of this publication 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. Pub# 3156 Approved 6/15/2017

600 13th Street, NW • Suite 500 • Washington, D.C. 20005 | 6803 West 64th Street • Overland Park, KS 66202
childrenshospitals.org | © Children's Hospital Association

Table of Contents

Beginning a New Payment Model

Guidance: Align payment incentives to support a focus on families, the use of care coordinators, enhanced relationships across providers and support of the primary care physician.

The CARE Award, funded by the Center for Medicare and Medicaid Innovation (CMMI), is designed to test the concept of a new care model supported by a new payment model specific to children with complex medical conditions. The care delivery model implemented across each of the CARE Award sites focuses on three elements: 24/7 access for the family to reach qualified providers familiar with the child's needs, care plans specific to each child and developed around family goals, and a team of care providers who regularly share information on the status of the patient. We believe these three elements work together as follows to impact unnecessary utilization and spend, and decrease the burden of care for the family.

- A focus on partnerships with families. Partnerships are designed to recognize and enhance the family's role and expertise in the provision of care. Families with customized care plans and access plans centered on their needs will better recognize escalation of conditions. These resources make it easier to reach a provider familiar with the child's care, preventing potential emergency room visits.

- A focus on the use of care coordinators. Care coordinators with specific skill sets in proactive planning will enable easy access to the system of care and enhance prioritization of family goals to match resources with the most pressing family needs.

- Enhanced relationships between primary care physicians, specialty physicians and community services. Patients can receive the most appropriate care closer to home when primary care and patient-centered medical home[1] providers actively support families while ensuring access to specialists. Handover communications across providers identifying "who's on first" will prevent lapses in the system of care.

This white paper provides guidance regarding appropriate payment models based upon actuarial and cost analyses for this special population developed through the CARE Award. The sites participating in the Award implemented three models to date: a care management fee for the provision of specific care coordination tasks, a Health Home[2] payment based upon the provision of integrating care across providers, and an upside shared savings model aligning incentives across the hospital, physicians and payer. This white paper will illustrate the development of the models and the potential for sustainability. The CARE Award began September 1, 2014 and ends August 31, 2017.

In an effort to transform the health care system, the Centers for Medicare & Medicaid Services (CMS) continues to move significant proportions of Medicare payments from fee for service

(FFS) to alternative payment models. Medicare's interest is in person-focused models that reward providers for optimal care management at a lower cost. While pediatrics remains somewhat isolated from the current momentum in Medicare, eventually both state Medicaid and commercial payers will likely follow suit if alternative models prove effective. Thus, it is incumbent upon pediatric providers to anticipate this transition and work toward designing payment models that most appropriately align quality and cost incentives for this high cost, high need population. Pediatric providers should also recognize the limitation of risk contracting for a relatively small, highly volatile population.

Based on actuarial modeling to date within the CARE Award, full risk contracting is not a viable option due to the size of the population considered in this project. Given the volatility of this highly fragile population, access to a larger network of children with complex medical conditions will be necessary across broad geographic regions. In addition, children's hospitals' network of care will be required including both specialty and primary care providers as well as home care and community services to manage services across the continuum of care given over 2/3 of the spend for this population is in outpatient services.

While the CARE Award was successful in actuarial modeling for this specific population, more work is required to develop standardized data sets representing utilization and spend for these children to enable both the development of new payment models and a better understanding of the patterns of care and the impact of care management on both quality and cost.

A Children's Hospital Story

> "*With the Children's Hospital Association (CHA), Lucile Packard Children's Hospital (LPCH) at Stanford participated in the CARE Award funded by CMMI. At the outset, we were willing to consider payment models that involved taking financial risk for these children, provided we could reassure ourselves that we could do so sustainably. LPCH has one of the highest case mix indexes of all children's hospitals nationally, reflecting the acute and very complex nature of the children for whom we routinely provide care. As this paper points out, getting accurate claims data on your proposed population is essential to understanding your patients and your risk. California sponsors an insurance plan called California Children's Services (CCS) for children with designated chronic or complex medical conditions. We were fortunate to have a local health plan – Health Plan of San Mateo (HPSM) – that had been delegated the responsibility to provide for and pay for the care of such children in their county under a pilot program. HPSM was willing to share with us the claims data on their CCS children for whom we were the providers of medical care. HPSM has about 1,300 CCS children for whom they are responsible.*"
>
> "*When we analyzed the data, we saw that the children for whom we provided care had much higher burden of illness than any reference database we found. LPCH has one of the highest rates of solid organ transplant in children in the U.S., and several of the HPSM children followed in our complex care coordination program had a history of transplantation. Other children were technology dependent or had serious progressive diseases such as cystic fibrosis or muscular dystrophy. In addition to progressive*

illnesses, we found volatility in the claims when children (such as those with hemophilia) move in or out of the plan from one year to the next. The dollar value of claims paid to health care providers outside our own institution's system could be sizable. For example, we do not have our own home health or durable medical equipment (DME) agency. The medication cost for biologic drugs, factor VII replacements, treatment for metabolic diseases and the like can be in excess of $100,000 a year per child. It is one calculation to be at risk for your own services and another calculation to be at risk for payments to be made to other providers."

"*The largest hurdle we found was to have enough children under an agreement to make actuarial sense. Even if the financial arrangement is not full capitation and is only up-side risk, one still wants to be sure that the claims performance in a given year was more likely the result of one's care coordination and medical interventions than due to chance. Our actuary Milliman indicated the volatility of claims naturally reduces as population size increases, therefore a population of 10,000 would be more predictable than a population of 1,500 or 2,000. HPSM has only 1,300 CCS children. Due to political constraints, it is not possible for us to imagine we could gain agreement to be solely accountable for the care and cost of claims for additional CCS children in our state.*"

"*A final caveat is to be aware of the cost of providing care coordination services to these patients and families. Even though trained lay-people can be used as schedulers and phone-callers, the children often do require the skills of a social worker and a nurse to evaluate and problem-solve the issues that arise. Trained parent mentors are an invaluable resource, but these individuals need to be not just paid, but trained and supervised at a cost to the institution. Using very conservative estimates, the incremental cost of adding a new patient to our care coordination program was in excess of $100 per child per month for our highest tier of need and complexity. On top of this is the whole infrastructure of a care coordination program and team with training, supervision, space and benefits.*"

-Michael Anne-Browne, MD, Associate CMO for Accountable Care, Lucile Packard Children's Hospital

1. CMS/CMMI Direction

Guidance: Leverage components of emerging CMS payment models for complex adult patients.

"*Our state will move to new payment models under Medicaid, but we are not going back to the '90's. We need metrics such as emergency department (ED) utilization and patient satisfaction to understand whether we are improving care. The metrics selected should represent an industry standard, and we won't work with models that are too complicated to implement.*"

-State Medicaid Program Director

CMS' movement to alternative payment models traditionally focused on Medicare. The CARE Award ventured into unchartered territories for children with complex medical conditions in terms of providers working with individual state Medicaid programs and Medicaid managed care organizations to develop alternative models. Guidance from CMS was fairly broad thereby leaving the platform creation to the awardees for both the actuarial construction of the model as well as the sell to state Medicaid programs and Medicaid managed care organizations. This created significant challenges, particularly in terms of developing and implementing an effective payment model within the award timeframe.

CMMI Payment Options

CMMI provided the following list of potential payment model options as their initial guidance to Round 2 awardees. They indicated "CMS specifically seeks new payment models to support the service delivery models funded by this initiative."[3]

1. New FFS payment (e.g., care coordination) without shared savings
2. New FFS payment (e.g., care coordination) with shared savings
3. Value-based payments (e.g., pay for performance based on quality measures)
4. Shared savings (e.g., ACOs)
5. Bundled or episode payment
6. Global payment (e.g., capitation)

Payment models are to be created to incentivize cost reduction, financial and clinical model transformation, care improvement or overall health improvement. For a population of children with medical complexity, initial CARE Award actuarial results reveal that two-sided shared savings or global payments are not viable for this small population of children enrolled in this project due to high insurance risk and high variability. Bundled payments are not a viable option since many claims are needed for the same procedure in order to develop the expected cost model; the conditions and procedures vary widely within and across this population of children. Thus, models more appropriately tailored to the unique needs of the complex pediatric population are required for this project. From the proposed alternatives, new care coordination/ care management fees potentially with upside shared savings more closely match appropriate risk assumptions.

Current CMS Value Based Models

The CARE Award began with evaluating industry based models to narrow our direction. Initial discussions with state Medicaid programs and MCOs led us to the realization that imitating industry value based models will enable more efficient payer adoption. We evaluated attractive components across three emerging CMS models plus several provider based models which are outlined in the appendix. We then discussed the opportunity to tailor these models to the unique needs of the population of children with complex medical conditions. CMS is piloting the Comprehensive Primary Care Plus (CPC+) model which is attractive given the relatively high per beneficiary per month reimbursement associated with care management for complex patients. The Merit-based Incentive Payment System (MIPS) includes a suite of measurement/accountability options including patient registries which will be necessary for the management of children with complex medical conditions. State Health Home models under the Affordable Care Act (ACA) are attractive given the required team-based core services which match the needs of our population.

All of these options, however, are designed for adults and require modifications to meet the unique care management needs of children and their families. A growing demand for complex services will likely continue as children such as those with congenital heart disease and cystic fibrosis have increased life expectancy and new technologies such as home ventilators allow families to care for these children as home. These children are not similar to the Medicare population of complex adults approaching the end of their lifespan and potentially living under nursing home care. These children can thrive and grow and have families willing and able to care for them at home. Thus evolving CMS models require some tailoring to leverage a family driven medical home model delivering complex services addressing the heterogeneity of needs for this high acuity, highly fragile population.

Other industry models profiled in Appendix 2 (Emerging Industry Models for CMC) test several additional components of potential new models. These include: upfront payments to providers and families, the targeting of high opportunity patients, and care management fees across broader populations of children to subsidize the needs of children with complex medical conditions.

2. Children's Hospital Considerations

Guidance: Understand the demographics of your specific population; take into consideration the difficulty in crafting specific models for smaller populations.

"Alternative payment models are required to support the management of specialized population of children with complex medical conditions. Under the fee-for-service model, individual pediatricians, who likely care for a handful of these children within their practice, are continually challenged to provide the time and resources necessary for their extended care needs. New care models are needed to support providers who have the willingness, knowledge and resources to provide management of these children through a dynamic care team. Health services research continually emphasizes that efficiency and quality are gained with higher volumes of services. The same is likely true in the care of children with complex conditions. We believe that through an investment in the provision of a medical home and specialized expertise along with centralized care management resources, we can achieve reductions in hospital days and emergency room visits for this specialized population. An alternative payment model is our best bet to gain the appropriate investment."

-Mark Hudak, MD, Professor and Chairman, Department of Pediatrics, University of Florida College of Medicine – Jacksonville

While CMS provided overall guidance, children with complex medical conditions (CMC) may or may not fit within a specific population-based alternative payment model. These children are fragile, their expenses vary widely year-to-year and they represent a much smaller population when comparing to adult populations with chronic and complex conditions. In addition, children's hospitals must consider their current and future network structure in terms of managing these children across the continuum of care to determine their ability to influence spend. Leveraging the capability for a broader population of children (expanding beyond the CMC subset) may be more sustainable.

CMC are a relatively small group (six percent of U.S. children in Medicaid), but they have an enormous impact on the health care system (40 percent of the Medicaid spend for children[4]). General characteristics of these children include: chronic and severe health conditions, significant health service needs, functional limitations, technological supports and high resource utilization. CARE Award data show CMC have high rates of annual emergency department visits (1.3 – 3.0 per patient) and annual hospital admissions (0.5 – 1.1 per patient). The children and their families depend on services provided by a multitude of subspecialty providers as well as services throughout the community and across the health care continuum. This broad array of service needs often results in disorganized care with the potential for unmet needs, family stress, decreased safety and increased costs. A growing body of evidence supports the provision of extensive care management and coordination support for these children and families to improve the patient/family experience and the quality of care provided.

Optimal care management for this population includes aspects of the medical home model including care planning, access to care and coordination of care across the health care continuum and even into the community. The resources required to build and maintain care management

structures within hospital complex care clinics or within a primary care physician's office are not reimbursed under the current FFS model. And, these resources can be substantial with many hospital-based complex care clinics reporting over $1 million annually in unreimbursed infrastructure costs. Thus, a new payment model is required to support this new care structure that in return will lead to lower costs overall for the health care system.[5]

Hospital or primary care clinic considerations for supporting the management of children with complex medical conditions include:

- Investment in the infrastructure to manage care across the continuum
- Agreement on the role of care coordinators between subspecialists, primary care providers and the complex care clinic
- Willingness to adopt standardized patient-centered concepts to drive care planning and patient access

Hospital or primary care clinic considerations for supporting an alternative payment model include:

- Communication across management, finance, clinical providers, legal and operational executives prioritizing the flexibility required to adopt new processes
- Access to ongoing claims and utilization data to monitor the success of a new payment model and resources to support analyses
- The resources and ability to conduct data analytics and funds flow modeling resulting in the appropriate incentive structures across providers
- Contracting and relationship-building with community providers

Ideally, the provision of financial incentives within a new payment model will result in more integrated and coordinated care for families across the multitude of providers and services required by CMC.

3. Building the Infrastructure

Guidance: Payers are concerned about provider capabilities in taking on risk arrangements; develop the infrastructure to build solid analytics, primary care provider support, and payer relationships.

The award provided significant resources toward the development of a centralized analytic data set and for the actuarial analysis required for payment model analysis. The CARE data infrastructure enables an understanding of utilization patterns and trends for individual sites and the collective results. The 10 CARE hospital sites work with our contracted claims data vendor – Truven Health Analytics[6], our contracted actuaries from Milliman, Inc.[7], and their finance and clinical teams to understand the possibilities for new payment models. The CARE sites initiated efforts early on with payers to both obtain the claims data for the analysis and begin evaluation of feasible payment model options to sustain the care delivery models being developed.

Four states and five Medicaid managed care organizations provide claims data for actuarial analysis for each hospital. The claims data reports track utilization and spend based on three years of historical data for the 8,064 enrolled children plus the claims experience throughout the award time period, September 2014 through August 2017. The results from claims data analysis are anticipated in November 2017 with final results in spring 2018. In addition, family experience survey results using the Peds Quality of Life survey are tracked centrally throughout the award timeframe with final results anticipated in September 2017.

A key component of providing the necessary care to CMC is the support of the primary care physician to enable care closer to home when warranted. This enables more focused patient-centered care as well as the expansion of a complex care program. Experience to date indicates a few preliminary observations on the payment model and the allocation of sums when distributing payments to the primary care providers. These may change with additional experience:

- Payment structure needs to be simple and stable
- Payment needs to be sufficient particularly for the primary care physician's directly involved in the care of these children.
- Payment needs to reward specific performers with greater incentives and a minimum for all within the network

Primary care providers report significant performance pressures in terms of time allotted to an individual patient. They are also concerned with long-term practice sustainability under the current environment. A care delivery model for children with medical complexity will require more time, attention and resources. Thus, an understanding of the potential reward and timing of incentives is necessary.

Hospitals share discussions with managed care payers who cited specific concerns regarding new payment models including: member density, simplicity of implementation and administration, inclusion of nationally recognized quality metrics and the ability to recognize savings over the long-term. Payers note that complicated models are a challenge. Providers may not have the

capability to take on risk associated with high cost populations. In accepting an alternative payment model, the overall reward for payers is recognition for quality care and attracting patients.

The hospitals continually work throughout the award to decrease unnecessary utilization and spend, and improve the family experience with the new care delivery model. We pose the theory that by investing in the care management necessary for this specialized population, all members in the health system will benefit:

Audience	**Benefit**
Federal/state/Medicaid programs	Reduction in utilization and spend
Patients and families	Meeting needs for access and care management
Care teams	Available resources that make the care system less fragmented and support the most appropriate model of care

A solid infrastructure including the necessary analytic components as well as knowledge of payer motivations is required to understand the opportunity for long-term success in this space.

4. Estimating the Costs

Guidance: Know your costs.

A separate component of the payment model is assessing not simply the claims spend for the population but the actual unreimbursed cost to the system. Here, we assume a Health Home model (team-based, patient-focused care coordination provided to children with complex medical conditions) and outline the cost on a per member per month (PMPM) basis. More information on Health Homes can be read in Appendix 1.c (Health Home Models).

The calculations are based on the unreimbursed resources needed to manage and coordinate care in the form of a comprehensive care clinic working in partnership with primary care physicians. We include the following core services outlined by the industry as required for optimal care management for this specialized population: tertiary-primary care partnerships, coordination and integration of an overall care plan among a dynamic care team, 24/7 access to care and an advanced medical home model. These core services reflect the needs of a potentially geographically dispersed population that requires specialized services from a major tertiary care center.

The proposed Health Home structure supports a population of 600 children with varying levels of medical complexity typically cared for by a children's health system in partnership with primary care physicians. Actual enrollment by hospitals within the CARE Award ranges from 200 to 1,800 children. The structure includes: services provided by team members not currently reimbursed under traditional fee-for-service models, supportive services and operational resources.

In supporting care coordination services for this population, it is estimated to require 1.0 FTE care coordinator per 50-100 patients. Combining registered nurse (RN) oversight with unlicensed care coordinators is necessary due to the medical fragility of this population and the need for the greatest workforce efficiency. The optimal health team includes some combination of the following:

- Physician oversight
- Registered nurse care coordinator
- Care coordinator
- Data analyst
- Community/behavior health worker
- Nutritionist
- Social worker

Along with the care team, some states have implemented health-related supportive services to manage a given population. "Health-related supportive servicers – housing, employment support, education and training, and environment modifications – can improve health and well-being, meet care plan goals, enhance the patient experience, and control costs." These services may

assist in regulating the health care spend while improving overall health and the patient experience[8]:

- Health education
  - Parent training
  - Wellness assessment
- Environmental mitigation
  - Home assessment
- Housing assistance
  - Rental assistance
  - Air conditioner
  - Assisted devices
- Social resources
  - Translation services
  - School assessment
  - Legal assistance
- Transportation
  - Doctor appointments

Example of Calculating Care Team Costs

Based on an enrollment of 600 patients, the clinical care team unreimbursed costs are estimated at $92 PMPM, operating resources including information technology and telehealth technology, along with supportive services, are estimated at $58 PMPM. Thus the estimated payment rate in 2016 for a Health Home model for children with medical complexity totals $150 PMPM. These rates are based on a national estimate and could vary by geographic region. Studies to date have shown that a reduction in emergency department and hospital day utilization offset this payment model rate.[9]

Health Home rates under current state arrangements as noted in the appendix vary in their structure. Negotiated payments may never reach the level we calculate here; however, this figure remains important for determining a return on the investment for this population. This figure also differs from a general national population of children with complex medical conditions given a children's hospital serves children at higher acuity levels than the national population.[10]

5. Actuarial Key Lessons

Guidance: Actuarial analysis is a key part of implementing and monitoring any alternate payment model.

CHA contracted actuaries from Milliman, Inc. to provide actuarial support for the 10 member hospitals participating in the CARE Award. The actuary's role is to quantify and measure risk, helping CARE Award sites understand the various risks they are taking when selecting a payment model, which is unique to each hospital and to the population served. Through the extensive claims data analysis, and risks and rewards discovery, five key lessons emerged for new payment model implementation. For a more complete discussion of the actuarial guidance, please see the Alternative Payment Models for Children with Complex Medical Conditions: Key Actuarial Lessons from the CARE Award.[11]

1. Look Before You Leap.

"Historical data can show the geographic and demographic makeup of a population, the number of members enrolled in each Medicaid subprogram or managed care organization (MCO), as well as the health care providers the members have been visiting."

Allowing adequate time for historical data analysis provides the opportunity for financial projections, including risks associated with potential large claims.

2. Population size matters.

"Children with complex medical conditions are a relatively small portion of the Medicaid population…the average claims PMPY for a population can be volatile and unpredictable…the volatility of claims naturally reduces with population size."

Children in the CARE Award represent a significant spend due to the fragility of their medical conditions. This population often exhibits variable spending. An individual patient can pose an unexpected result when not accounted for properly. Unpredicted spending has a greater impact in models with smaller populations.

3. The devil is in the details.

"In analyzing historical data and financial projections, we often uncover obstacles for an alternate payment model that were not foreseen by CARE Award hospitals at the outset."

Obtaining high quality data is crucial for payment model development; understanding claims data allows for benchmark calculations and potential projected savings. Other considerations to incorporate when developing an alternative payment model include state specific Medicaid program parameters and patient attribution. Diligently studying each factor allows for the actuary to account for irregular risks which may surface.

4. Don't reinvent the wheel.

"Some states have existing innovative payment model programs providers can join or leverage."

Utilizing established state programs could be the gateway to implementing advanced payment models with the states and payers. This avoids the complexity of administering additional models.

5. It takes two to tango.

"If a payer is not willing or able to implement a new payment model, a new payment model cannot be implemented."

Building relationships with payers prior to the development of an alternative payment model eases the difficulty in acquiring data, retaining data quality, negotiating terms and conditions, and implementing the payment model. Achieving buy-in in the early stages of design will lead to a more successful alternative payment model outcome.

No hospital under the CARE Award will be considering a full risk sharing arrangement for the CARE enrolled population. The numbers of children enrolled in the CARE Award program within any given payer, along with the potential volatility of the claims prohibit this arrangement as an option.

6. CARE Awardee Payment Models

Guidance: New models arise more easily for providers with payer experience or those who doggedly pursue options with payers.

A Children's Hospital Story

Our journey with the CARE Award began long before our acceptance into the award. The initial step was the most critical and foundational move we made. It was no easy task to secure the letter of support from our state Medicaid agency, the Agency for Health Care Administration (AHCA), for the CARE application. But once we did, we had the commitment of the highest levels of leadership to act as soon as the award was announced. To receive the letter of support, the Secretary of AHCA and select state leaders carefully reviewed the project, and carefully considered their commitment as a partner. This evaluation and buy-in to the concept was time-consuming and onerous, but it solidified a partnership that was essential to the award's future success. If we had forced this step without our state's willingness to engage authentically as a partner, we could have experienced mixed results or lack of movement, post-award. From our perspective, our state had as much at stake in the success of the award as we did. We were in this together!

Once the award was announced, the same leadership at AHCA with whom we worked so hard to get onboard, directed their data and analytics team to work with St. Joseph's Children's and the Children's Hospital Association. As we labored over challenges including: signing the data sharing agreement, obtaining an unprecedented amount of Medicaid claims data, and then trying to make that data meaningful, we consistently went back to the original state leadership team to keep agency staff on task and on time. Periodically updating this team on the grant results, outcomes and findings was a professional and motivating step to keep them engaged.

When we began the step of negotiating our payment model with a separate branch of state government, the Department of Health (DOH), we again relied on the positive relationship and repertoire we had established with AHCA. Through our payment discussions, St. Joseph's Children's was able to use data from the CARE Award to factually persuade the DOH that a care coordination fee to our hospital's Chronic-Complex Clinic, in exchange for an enhanced medical home model for their Children's Medical Services (FL-CMS) enrollees, was a win-win. Because the St. Joseph's Children's team had spent 18 months working with the state collaboratively, as well as educating them on the quality of the Chronic-Complex Clinic model, they were primed to support an enhanced payment.

While some of the leaders we worked with at AHCA and DOH have moved on, St. Joseph's Children's has cemented a strong, productive relationship with our state government around care management for medically complex kids. This positive experience will continue to be a frame of reference and a source of validity as we

continue dialogue with the state on future payment models or health care delivery options that benefit medically complex children in the state of Florida.

-Keri Eisenbeis, Director, Government Relations, St. Joseph's Children's Hospital, Tampa, Florida

Finally, three children's hospitals are testing three different payment models within the CARE Award. Their experiences, plus others that adopt new models during the award timeframe will serve as trailblazers to sustaining more optimal care for this specialized population.

St. Joseph's Children's Hospital of Tampa

Ongoing communication with the state Medicaid program led to commitments for data sharing as well as considerations for a new payment models prior to the start of the CARE Award. As these discussions progressed, new state activities regarding the special needs population led to the negotiation of a care management fee to better coordinate care for children with complex medical conditions. As the state of Florida transitions to Medicaid managed care, St. Joseph will continue to approach managed care payers for considerations of new value based payment models.

Care Coordination

The care management fee provided to St. Joseph's Children's Hospital through the CARE Award will cover additional care coordination and services for children with complex medical conditions. Table 1.0 highlights services covered by the care management fee.

Table 1.0

Assistance with coordination of medical appointments, equipment/supplies and resources	Diagnostic tests, clinic appointments, patient referrals, documentation of needs for home nursing, behavioral health needs, medical qualifying forms (i.e., FMLA, disabled parking), letters of medical necessity, transitioning to adult care
Increased patient interaction and communication across services	24/7 clinic access via physician-staffed call line, education and additional resources for frequent ED visits and/or readmissions, greater integration between complex care clinic (CCC), Children's Medical Services nurses and social workers
Community involvement	Participation in multidisciplinary meetings (e.g., school, protection investigation) on behalf of patients, assist with making recommendations in the best interest of the patient and family

Cook Children's Medical Center

The Cook Children's Medical Center is uniquely positioned among CARE awardees in that the system owns the health plan, the physician network and the hospital. The hospital worked through the data and actuarial processes within the award to design a shared savings arrangement between the three entities within its system. The system structure will work well for monitoring all incentives and results in an open forum. Unanticipated external resources were needed in the construction of the risk sharing contract among the three entities. Resources will also be necessary for ongoing monitoring of the contract.

Shared Savings Model

In 2016, Cook Children's implemented a shared savings payment model for the CARE enrollees. Cook Children's worked with the actuary to develop baseline assumptions to project performance. In their model, savings are shared equally between Cook Children's Hospital, Cook Children's Health Plan and Cook Children's Physician Network. Savings are calculated as the difference between projected baseline costs and projected performance costs, less the cost of additional care coordination activities performed by Cook Children's Health Plan. See example table below. This is an upside-only shared savings arrangement with the health plan bearing the administrative costs. Savings will result if care coordination efforts have a significant impact on costs, or if claims costs are lower than expected due to random variation. Table 2.0 summarizes the shared savings calculation for a fiscal year, in this scenario, positive savings are realized (figures are illustrative only).

Table 2.0

Summary of Shared Savings PMPM	
Item	**Amount PMPM**
Benchmark Claims Cost	$1,000.00
- Actual Claims Cost	-$800.00
= Care Coordination Savings Impact	$200.00
- Administrative Costs	-$100.00
= Total Shared Savings or (Additional Cost)	**$100.00**

To date, Cook Children's initial results reveal that smaller populations do not leave adequate savings for parties participating in the arrangement. Larger populations may be needed to obtain the volume of savings that would incentivize providers.

Children's Mercy Kansas City

Children's Mercy leveraged its ongoing relationship with the state Medicaid program and previous experience owning a Medicaid health plan to quickly develop options for a new payment model under the CARE Award. Children's Mercy evaluated the state's health Home program and devised changes specific to the needs of children with complex medical conditions.

The state then modified the definition of eligible patients within the state's Health Home program to enable approximately 30 percent of the CARE - 19 - enrollees to qualify. The Health Home program provides a care management fee for Health Home services. Children's Mercy's previous experience led to a high comfort level in working with the actuary to analyze the population. Into the future, the hospital will continue to look for opportunities to move toward a shared savings model for this population.

Missouri Health Homes

There are currently two Health Home initiatives in the state of Missouri: Primary Care Health Home (PCHH) and Community Mental Health Centers (CMHC). A PCHH provides primary care services with the addition of behavioral health care. A CMHC focuses on behavioral health care while incorporating aspects of primary care (e.g., care coordination) into the model. Overall, Health Homes are required to perform Health Home services and activities ("touches"). Providers meeting these requirements, as outlined in Table 3.0, receive a PMPM payment. A small PMPM is paid by providers to Missouri Primary Care Association (MPCA) for administrative expenses.

Table 3.0

Health Home "Touches"	Services & Activities
Comprehensive Care Management	Care assessments, care plan, treatment guidelines, health monitoring, health and utilization reports
Care Coordination	Care plan implementation, support referrals, appointment scheduling, communication across care team and family, discharge process
Health Promotion	Targeted health education, person-centered empowerment
Comprehensive Transitional Care	Collaboration with care team and other health service providers, proactive health promotion
Patient & Family Support	Identify additional resources, assist with developmental disabilities case management
Community & Supportive Services Referral	Disability benefits, health care eligibility, housing, legal services, other personal/health needs

Children's Hospital of Philadelphia

The Children's Hospital of Philadelphia (CHOP) negotiated with their largest regional Medicaid payer a new payment model focused on up-front support for care management. Through

discussions with the payer, CHOP identified the need to provide more care coordination resources to work with the health plan's highest-cost, highest-need patients receiving primary care at the Karabots Pediatric Care Center in West Philadelphia. This led to the creation of the Karabots-Keystone Cares ("K2C") Program. A 3-year program with an investment of state Medicaid funds for 7.0 new FTEs at Karabots began in April 2017. These FTE's included:

- (4) Outpatient-based RN care coordinators
- (1) Hospital-to-home transition RN care coordinator
- (1) Social worker
- (1) Community health worker

The new care coordination staff will work with a group of approximately 600 K2C patients who were chosen mutually by CHOP and the payer due to their medical complexity and high-cost/high-risk utilization history. Each patient will be assigned to one outpatient-based RN care coordinator for ongoing management, which will focus on reducing ED visits and hospitalizations, improving Karabots and specialty visit adherence, and collaborating with the payer's case management teams to review home care services. Patients with significant histories of no shows, preventable ED visits, and psychosocial issues will work with the social worker and community health worker. All patients will receive the services of the hospital-to-home RN care coordinator when they are hospitalized to improve communication with the PCP during hospitalizations and ensure that all follow-up needs are arranged at discharge.

This agreement includes risk sharing tied to HEDIS quality metrics, which include annual well-child visits, influenza vaccine, and asthma medication ratios for the K2C population. The potential savings pool will be determined by a combination of incentives for those quality metrics and CHOP's performance on population health measures for the K2C population, including rates of inpatient days and ED visits. In later years of the program, CHOP is at risk for a portion of the upfront program investment made by the payer if metric targets are not met.

CHOP's quality improvement teams are redesigning workflows and outreach processes to reduce ED visits and hospital lengths of stay for these patients, improve outpatient management of their care coordination needs, and improve patient satisfaction.

Appendix

1. CMS Models

Guidance: CMS new models abound with a focus on care coordination and community/payer/provider partnerships. These models will require modifications specific to the pediatric population.

A. CPC+

The Center for Medicare and Medicaid Innovation is piloting a model similar to the Health Home model titled Comprehensive Primary Care Plus (CPC+). This is an advanced primary care medical home model with payment tiers based on patient level of complexity. This model provides some guidance for children's hospitals whose complex care clinics provide support for primary care physicians in the community to manage these patients. Table 4.0 represents the tiered model.

> "CMS and other payers will provide prospective monthly care management fees (CMFs) to Track 1 and 2 practices based on beneficiary risk tiers...the Medicare CMFs will average $28 PBPM across five risk tiers, which includes a $100 CMF to support care for patients with the most complex needs. Practices may use this enhanced, non-visit-based compensation to support augmented staffing and training needed to meet the model requirements according to the needs of their Medicare attributed patient population."[12]

Table 4.0

Risk Tier	PBPM*
Tier 1	$9.00
Tier 2	$11.00
Tier 3	$19.00
Tier 4	$33.00
Complex	$100

Per Beneficiary Per Month

This initiative focuses on primary care delivery of high quality, whole-person, patient-centered care and lowering the use of unnecessary services that drive total cost of care. These attributes mimic the attributes of the CARE Award in our emphasis on access, care management, caregiver engagement and planned care.

B. The Quality Payment Program: Merit-based Incentive Payment System (MIPS) Advanced Payment Model (APM)

As part of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA), the Quality Payment Program is a new payment system built to support higher value, patient-focused care. The program is centered on flexibility by providing diverse options – physicians may customize participation according to practice size, specialty, location and patient population. The MIPS track offers Medicare payments adjusted per quality outcome. Quality outcome is being based on performance measures calculated from quality data. Table 5.0 outlines the four MIPS performance categories used for determining the adjusted payment.[13]

Table 5.0[14]

Category	Weight	Description
Quality	50%	Clinicians choose up to six measures. Groups using the web interface report 15 measures for one year. Bonus for reporting outcomes, patient experience, appropriate use, patient safety and EHR reporting.
Advancing Care Information	25%	Two measure set options, dependent on electronic health record edition. Complete required measures for a minimum of 90 days: security risk analysis, e-prescribing, patient access, submission/acceptance of summary of care. Additional credit for completion of up to nine measures for a minimum of 90 days. Bonus for Public Health & Clinical Data Registry reporting and use of EHR technology for specific activities.
Clinical Practice Improvement Activities (CPIA)	15%	Complete up to four improvement activities for a minimum of 90 days. Groups in rural areas, health professional shortage areas or with </= 15 participants complete up to two activities for a minimum of 90 days. Participants in certified patient-centered medical homes or comparable specialty practices automatically earn full credit.
Resource Use	10%	Calculated from claims, no data submission from clinicians required.

C. Health Home Models

The Affordable Care Act (ACA) of 2010, Section 2703, allows states the option to provide Health Homes for enrollees with chronic conditions. Health Homes utilize a team-based model structured around six core services: comprehensive care management, care coordination, health promotion, comprehensive transitional care, individual and family support, and referral to

community and social support services. After initiating a Health Home state plan amendment, CMS funds a 90 percent service match for the six core services, over eight consecutive quarters.[15]

Figure 1.0 is a map from the National Academy for State Health Policy depicting states with active Health Homes.[16] The table that follows, Table 6.0, highlights several states and payer arrangements. The PMPM rates for these Health Home models vary due to differences in the covered populations and specific services provided.

Figure 1.0[17]

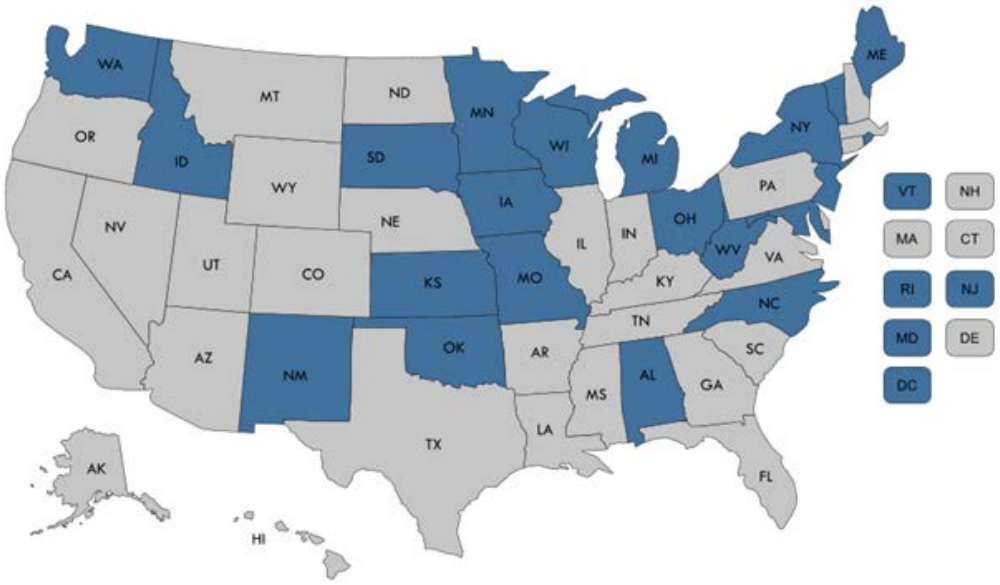


Table 6.0[18]

State	PMPM Rate (specify years)	Payment & Support
Washington	$67.50 - $172.61	Based on required level of coordination One-time $252.93 PM for outreach, engagement and development of health action plan
Kansas	$117.21 – $327.48	Based on patient complexity, required to provide at least one of six core Health Home services per month
Missouri	$83.56	Based on staffing costs, adjusted annually per CPI
Iowa	$12.80 – 76.81	Tier rates (1-4) based on number of chronic conditions Annual pay-for-performance bonus, up to 20% of monthly payments
South Dakota	$9.00 - $160.00 $9.00 - $250.00	Behavioral health professionals led, tier rates (1-4) based on patient acuity Primary care provider led, tier rates (1-4) based on patient acuity
Minnesota	$350.00	Enhanced rate to cover costs in initial six months

	$245.00	After six months of operating
Wisconsin	$102.95	Case rate for patient receiving at least one service in month One-time $359.37 PM for initial assessment, development of care plan
Michigan	$137.19	Case rate based on staffing costs, reviewed annually
Maryland	$98.87	Case rate for patient receiving at least two services in month One-time $98.87 PM for initial intake and assessment
New Jersey	$480.00 $401.00 $120.00	Engagement Phase – outreach, enrollment Active Phase –after engagement, length of 24 months Maintenance Phase – patient requires fewer interventions
New York	$18.71 base rate $23.27 base rate	Upstate, multiplied by acuity score 80% of payment prior to enrollment for outreach and engagement Downstate, multiplied by acuity score 80% of payment prior to enrollment for outreach and engagement
Vermont	$345.36 $163.75	"Hub" for patient receiving at least on service in month "Spoke" (master's level and RNs) based on aggregate number of patients/HAS, patients receive at least on service in month
Rhode Island	Fee for Service	$366.00: intake and assessment $347.00: development of care plan $397.00: review of care plan $16.63/15 mins: therapeutic consultation $16.63/15 mins: care coordination by master's degree $9.50/15 mins: care coordination by non-master's degree
Maine	$141.00	$12.00 PMPM goes to home health practice $129.00 PMPM goes to community care teams

2. Emerging Industry Models for CMC

Guidance: Industry experience shows leveraging larger populations or adult populations to mitigate both the cost and the risk.

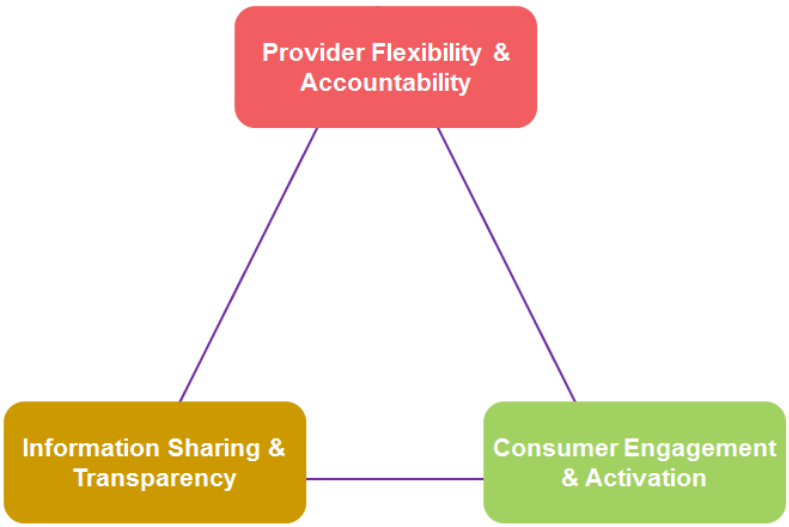
A. University of Pittsburg Medical Center (UPMC) High Value Care for Kids

UPMC's project "Improving Care Value for Children" was developed in effort to increase the value of care by building a payment model that would support a restructured delivery system. Within the project, care teams emphasized family/provider collaboration to target financial and care needs, making needed products and services available to the families/patients.[19] Using a set of data elements to define the population, UPMC analyzed the distribution of children with medical complexities and identified practices who were interested in participating. The initial selection of practices was based on high volumes of patients with UPMC *for You* insurance.[20]

One-time Payment Program

To achieve both an improvement in quality of care and reduction in overall spend, UPMC devised a value-based payment model, depicted in Figure 2.0.

Figure 2.0[21]



- **Provider Flexibility & Accountability:** funding for care coordination, payments for other needed clinical services, shared savings
- **Information Sharing & Transparency:** patient utilization and cost information, quarterly quality reports
- **Consumer Engagement & Activation:** consumer funds for non-clinical goods and services, directed by patient/family

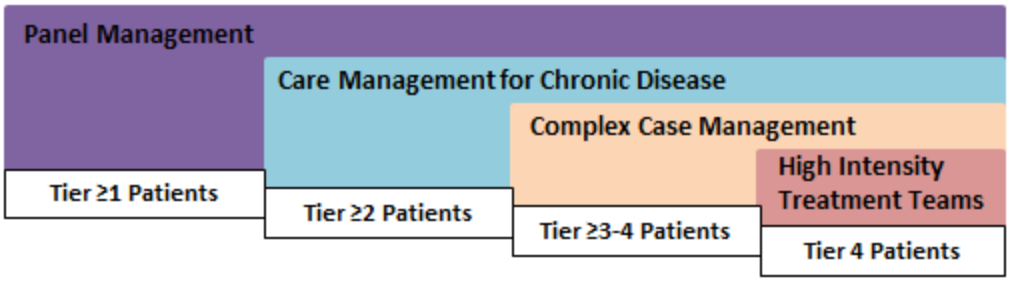
The three components of the payment model support care activities, identified by providers, that best serve children with complex medical conditions: medical records review, care plan development, communication across all providers (i.e., specialists), and care goals discussion with care team and families. This model adds on to traditional FFS payments by using "prospective funding to provide upfront payments to providers for care coordination and other enhanced services" targeting cost reduction and increase in quality care. "The health plan agreed to invest additional funds to enhance and develop care coordination within the participating practices in anticipation that there would be a positive return on investment. Savings above the initial investment were shared with the practices at the end of the project.[22]

B. Denver Health

Denver Health, an integrated health care organization, received CMMI Round 2 Award funding for care management of both adult and pediatric complex patients. The project, "Integrated model of individualized ambulatory care for low income children and adults" was designed to focus care on the individual patient, improving care management, coordination across providers

and overall health (medical, behavioral and social needs).[23] Utilizing the 3M Clinical Risk Groups (CRGs), four tiers were created to design a population health model, see Figure 3.0.

Figure 3.0[24]



The tier model allowed the transition from a traditional care team structure to one that matched staffing to the patient population. Care team members consisted of a patient navigator, clinical pharmacist, nurse care coordinator (pediatric only), social worker and behavioral health consultants. Their goal is to "achieve practice transformation by integrating new staff with existing staff to provide team-based care, especially to high opportunity patients." As both the payer and provider of services, Denver Health had the unique opportunity to monitor the overall PMPM spend to calculate both the cost of delivering the care and any associated savings from this tiered approach.

C. University Hospitals (UH) Rainbow Babies & Children's Hospital

As part of the Health Care Innovation Awards Round 1, UH Rainbow Care Connection Center for Comprehensive Care instituted a program designed to improve pediatric ambulatory care. Rainbow Care Connection is a pediatric accountable care organization serving children with complex chronic conditions in northeast Ohio. This model incorporates a comprehensive care team comprised of physicians, nurse practitioners, clinical supervisor, nurse coordinators, dietitians, social workers and administrative staff. The team collaborates across the spectrum of care to improve health, delivery of care and reduce costs associated with emergency department and hospitalizations. Care is coordinated based on a three tier system, as described in Table 7.0.[25]

Table 7.0[26]

	Tier I	**Tier II**	**Tier III**
Medical			
Non Elective Hospitalizations/ Year	0 – 1	2 – 3	>3 or prolonged >1 month
ED visits/ Year	0 – 1	2 – 3	>3
Symptoms	Well controlled	Occasional breakthrough	Frequent breakthrough

Technology	None, ITB, VNS, catheters	Frequent "pulmonary toilet", trach, VP shunt, g-tube, central line	Vent, O_2 dependent
Nutrition			
Growth	Normal	Correcting / stable	Failure to Thrive/ obesity
Dysphagia	None	Mild / moderate	Severe
Method of Feeding / Age	Oral diet, oral supplement, tube fed >3 years of age	Modified consistency tube fed 1-3 years of age	New feeding tube TPN tube fed <1 year of age
GI Symptoms	No GI symptoms	GI symptoms improved with nutrition intervention	GI symptoms requiring nutrition intervention
Social			
Access	Good knowledge of resources / support	Limited resources / support	Lack of resources / support
Social/ Family Function	Caregiver can obtain resources / supports Independently	Limited knowledge of resources	Lack of knowledge of resources
Mental Health	Caregiver stress but supported	High caregiver stress - mostly during acute issues	Chronically high caregiver stress; parent/ caregiver mental illness / mental health concerns
Adherence to Care	No history of missed appointments	(1-2) missed appointments- past 12 months	(3+) missed appointments past 12 months
Division of Children and Family Services (DCFS)	No history of DCFS involvement	Any history of previous DCFS involvement	Active or previous DCFS involvement past 12 months; foster care or adopted
Transportation	No transportation issues	Limited access to transportation	No transportation
Follow Up (minimum)	**Every 6 Months**	**Every 4 Months**	**Every 2 Months**

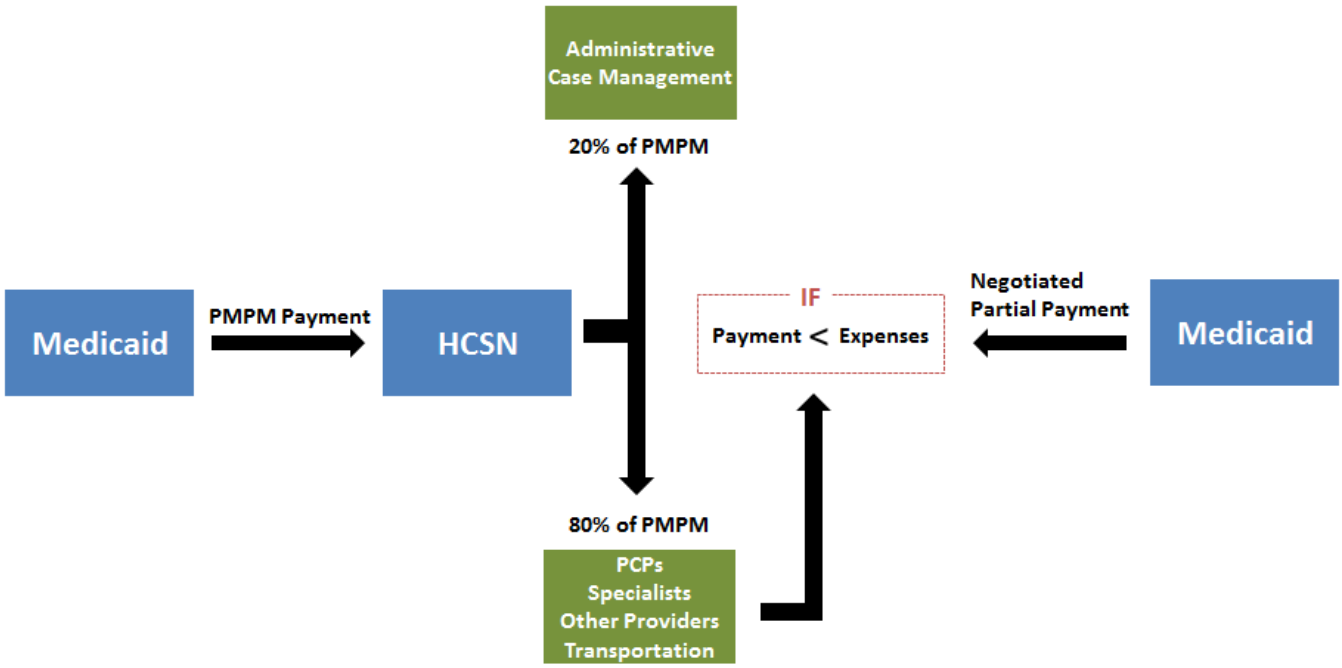
Under their CMMI Award, Rainbow Babies negotiated a PMPM care management fee with state Medicaid managed care organizations across a broader population of children to subsidize the needs of children with complex medical conditions.

D. Health Services for Children with Special Needs (HSCSN)

HSCSN delivers care management to children and young adults (up to 26 years of age) with disabilities and complex medical conditions residing in Washington D.C. This Medicaid health plan focuses on providing care coordination and resources for patients with hopes to strengthen family medical competency and increase standard of living through expanding access. Care

management is facilitated through a care manager, which includes coordination of care services both inside the medical home and with other providers.[27] Case managers are assigned 60 to 70 children at a time, each child with a care plan specific to their individual needs. Enrollee benefits include primary and specialty care, mental health, dental, therapeutic services, and ancillary procedures. These benefits along with other expenses related to care incurred are included in a shared risk payment model, as illustrated in Figure 4.0. Under this model, HCSN receives a partially capitated payment from the District Medicaid program and both entities assume risk for health care costs and transportation expenses[28]

Figure 4.0



HSCSN is the payer partner with Children's National Medical Center for the CARE Award. These two entities are in discussions regarding potential alternative payment models for hospital based services.

3. Conclusion

To date, the CARE Award hospital discussion with payers along with the actuarial analysis led to the development of four payment models for this specialized population of children: an upside shared savings arrangement, a care management fee, a Health Home PMPM fee and upfront payment support for seven care management FTEs with a potential for shared savings. All were tailored to the unique needs of this population of children with complex medical conditions. These options are currently in pilots within four participating children's health systems. Significant groundwork and negotiations with payers were necessary to overcome perceived add-on expenses and unnecessary administrative burden of a new payment model for a specialized

population. Children's hospitals must consider the interests of the payer for workable options. In addition, obtaining the final utilization and spend data is a critical part of the development of new payment models both for the actuarial analysis and for the determination of the potential for a return on new care management techniques. Calculating the ROI will be the last phase of the CARE Award and hopefully lead to more wide-spread adoption of the necessary services to manage this unique population and adoption of new payment models to support those services.

Acknowledgments

CARE Payment Champions

The Children's Hospital of Philadelphia
Edward Bleacher II
Elizabeth Brooks

Lucile Packard Children's Hospital Stanford
Michael-Anne Browne, MD
Orlanda Lopez

Wolfson Children's Hospital/Baptist Health
Philip Boyce
Megan Denk
Mark Hudak, MD

St. Joseph's Children's Hospital of Tampa
Keri Eisenbeis
Judy Mitzlaff

Children's Mercy Kansas City
Robert Finuf
Chad Moore
Kent Pack

Mattel Children's Hospital UCLA
Margaret Follette
Thomas Klitzner, MD

Children's Hospital Colorado
Catherine Dal Santo
David Keller, MD
Elizabeth Nowak

Cook Children's Medical Center
Tim Muirheid
Tammie Sibley

Children's National Medical Center
Aldwin Lindsay
David Sparks
Roger Ziegler

Cincinnati Children's Hospital Medical Center
Colleen Kraft, MD
Terry Lindquist

CARE Research Managers

St. Joseph's Children's Hospital of Tampa
Stefanie Alt
Jimmy Baumgartner

Children's Mercy Kansas City
Megan Bledsoe
Jennifer Provyn

Lucile Packard Children's Hospital Stanford
Joseph Benavides
Orlanda Lopez
Rachel Schwartz

Children's Hospital Colorado
Bryan Wallace

The Children's Hospital of Philadelphia
Maggie Eisen
Caren Steinway

Children's National Medical Center
Tamara John

Mattel Children's Hospital UCLA
Adrianna Saenz
Jessica Flores-Vazquez

Cook Children's Medical Center
Emily Sondergaard
Stephanie Weikel

Cincinnati Children's Hospital Medical Center
Jeanne Spaulding

Wolfson Children's Hospital
Mark Fafard

CHA Administrative Team
Kate Conrad
Russell Friesen
Amy Knight
Kim Lewallen
Denise Taylor

CARE Award Proposal Authors
Susan Dull
Mark Wietecha
David Bergman, MD

Payment Model Guidance Editors
Jacqueline Kueser
Athena McKenzie

QI Collaborative Team
Susan Dull
Lorna Morelli
Lowrie Ward

Analytics & Reporting Team
Jeff Barnes
Troy Richardson
Jonathan Rodean

IT Support
Curtis Fisher
Mike Hadlock
Phil Jaggard
Frank Kish
David Naas

Survey Team
Rebecca Berbiglia
Sarah Brenner
Shah Islam
Phil Jaggard
Kim Lewallen
Jonathan Rodean
Lowrie Ward

Qualtrics
Travis Day
Kyle Francis

IBM Watson
Dave Jackson
Steven Martin
Kevin Miller
Ryan Olenski

[1] Patient Centered Medical Home Resource Center. https://pcmh.ahrq.gov/page/defining-pcmh. March 2017.
[2] Medicaid.gov. https://www.medicaid.gov/medicaid/ltss/health-homes/index.html. March 2017.
[3] Centers for Medicare & Medicaid Services. https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2013-Fact-sheets-items/2013-05-15.html. July 6, 2016.
[4] Children's Hospital Association. "Optimizing Health Care for Children with Medical Complexity".
[5] Dobson, Allen, Ph.D., DaVanzo, Ph.D.,M.S.W., Berger, Gregory, M.P.P. "Summary of Available Evidence and Methodology for Determining Potential Medicaid Savings from Improving Care Coordination for Medically Complex Children: A Legislative Proposal for Risk-bearing Specialized Pediatric Medical Home Programs". Dobson DaVanzo Final Report. October 2013.
[6] Truven Health Analytics™ is a consultant providing data and analytics support to the project, https://www.truvenhealth.com.
[7] Milliman is an actuarial consulting firm providing payment model analytics and development. http://us.milliman.com/.
[8] A. Spener, J. Lloyd, and T. McGinnis. "Using Medicaid Resources to Pay for Health-Related Supportive Services: Early Lessons". *Center for Health Care Strategies, Inc*. December 2015.
[9] http://www.ncbi.nlm.nih.gov/pubmed/21300650.
[10] See #5 (Dobson, Allen, Ph.D., DaVanzo, Ph.D.,M.S.W., Berger, Gregory, M.P.P.).
[11] Kramer, J. Matthew, FSA, CERA, MAAA, Spector, Juliet M., FSA, MAAA. "Alternative Payment Models for Children with Complex Medical Conditions: Key Actuarial Lessons from the CARE Award". Milliman White Paper. December 2016.
[12] Centers for Medicare & Medicaid Services. https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2016-Fact-sheets-items/2016-04-11.html. July 6, 2016.
[13] Centers for Medicare & Medicaid Services. https://qpp.cms.gov/docs/Quality_Payment_Program_Overview_Fact_Sheet.pdf. November 2016.
[14] Centers for Medicare & Medicaid Services. "The Merit-Based Incentive Payment System: Quality Performance Category" (powerpoint presentation). October 2016. https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/MACRA-MIPS-and-APMs/Quality-Performance-Category-training-slide-deck.pdf
[15] Medicaid.gov. https://www.medicaid.gov/State-Resource-Center/Medicaid-State-Technical-Assistance/Health-Homes-Technical-Assistance/Health-Home-Information-Resource-Center.html. August 2016.
[16] National Academy for State Health Policy. State Delivery System and Payment Reform Map. http://nashp.org/state-delivery-system-payment-reform-map/. August 2016.
[17] See #16 (National Academy for State Health Policy. State Delivery System and Payment Reform Map).
[18] See #16 (National Academy for State Health Policy. State Delivery System and Payment Reform Map).
[19] UPMC Center for High-Value Health Care. http://www.upmchighvaluehealthcare.com/medicaid-payment.html. October 26, 2016.
[20] Interview: Lovelace, John, Moss, Deborah. UPMC *for You*.
[21] UPMC Center for High-Value Health Care. "How-To Manual for Redesigning Medicaid Payment Policies: Lessons from a Local Demonstration Project to Improve the Value of Care for Children with Medically Complex Conditions". November 2014
[22] See #20 (Interview UPMC *for You*).
[23] Centers for Medicare & Medicaid Services. https://innovation.cms.gov/initiatives/health-care-innovation-awards/colorado.html. October 21, 2016.
[24] Hambidge, Simon, MD, PhD. "21st Century Care: Redesigning Pediatric Care at Denver Health. Designing Systems that Work for Children with Complex Health Care Needs" (powerpoint presentation). December 7th, 2015. http://www.lpfch.org/sites/default/files/simon_hambidge_symposium_slides.pdf.
[25] Hertz, Andrew, MD, Grossbergh, Richard, MD, Ronis, Sarah, MD MPH. "Program Description and Lessons Learned. UH Rainbow Care Connection Center for Comprehensive Care" (powerpoint presentation). December 14, 2016.
[26] See #25 (Hertz, Andrew, MD, Grossbergh, Richard, MD, Ronis, Sarah, MD MPH).

[27] District of Columbia Primary Care Association. Health Services for Children with Special Needs. http://www.dcpca.org/health-services-for-children-with-special-needs. January 31, 2017.
[28] Schuster, Cynthia R., M.P.P., Mitchell, Jean M., Ph.D., Gaskin, Darrell J., Ph.D. "*Partially Capitated Managed Care Versus FFS for Special Needs Children*". Health Care Finance Review. 2007 Summer; 28(4): 109–123. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4195005/.