



CARE AWARD

Photo: John Maniaci, American Family Children's Hospital, Madison, Wisconsin

Estimating Your Costs to Manage a Population

Caring for Children with Complex Medical Conditions (CMC)

The **Children's Hospital Association** and leading children's health systems participating in the CARE Award are testing new care delivery and payment reform models for children with complex medical conditions (CMC). A common theme that surfaced during the development phase of payment models is, "what are the costs of the program?" The care delivery model implemented across each of the CARE Award sites focuses on access to qualified medical providers, individualized care and access plans, and a multidisciplinary care team. In the current payment system environment, many services under the CARE model are not traditionally reimbursable. Understanding the costs of care management will assist hospitals in adequately accounting for resources to provide care transformation and develop viable alternative payment structures. This understanding will in turn facilitate external discussions with payers, states and Managed Care Organizations to attain the most ideal payment model for all parties.

This white paper estimates the cost of providing care management services to a population of 500 children with complex medical conditions in a medical home.



Determining Resource Use for Care Management

The hospitals participating in the CARE Award worked to develop a new care delivery model focused on decreasing unnecessary utilization and spend, and improving the family experience. The theory was posed that by investing in the care management necessary for this specialized population, all members in the health system would benefit—patients, families, physicians, payers, and the hospital. So what resources are needed to build the infrastructure of this new care management delivery system, and what resources are required to sustain care transformation and support an evolving care model?

Experience to date indicates optimal care management for this specialized population requires four core services: tertiary-primary care partnerships, coordination and integration of an overall family-driven care and access plan, 24/7 access to care, and an advanced medical home model. These core services are delivered through a care team and reflect the needs of a potentially geographically dispersed population who require specialized services from a major tertiary care center. These services are built upon a comprehensive clinic (physical or virtual) working in partnership with primary care physicians. Following is an example calculation of the cost of these core services across three components: the care team, operating expenses, and supportive services.

Calculating a Care Team

While the composition of a dynamic care team may vary by region, in this example an optimal care model has a team structure that supports a population of children with significant levels of complex care needs ranging from 25-50 percent of the population at the highest levels of complexity. The structure includes the following team members not currently reimbursed under traditional fee-for-service models:

- Physician oversight
- Registered Nurse (RN) Care Coordinator
- Care Coordinator
- Research Assistant/Data Analyst
- Community Health Worker
- Nutritionist
- Social Worker
- Behavioral Health Worker
- Parent/Family Advisors and Mentors

The care team cost calculations are based on team structures and cost data from several children's health systems experienced in the care of these children using a holistic complex care clinic model. These represent traditionally non-reimbursed FTEs for a population

Note from a Children's Hospital

"A final caveat when evaluating options for payment and care delivery transformation 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

of 500 children with medical complexity. Of note, in our example, RN care coordinators are partnered with unlicensed care coordinators on a 1:1 basis. This care coordination model addresses the medical fragility of the population along with the need for workforce efficiency. Industry experts from the CARE Award recommend for the highest acuity patient populations a range of 1.0 FTE care coordinator per 60 to 120 patients.

Care Team Members	FTE Range	Estimated Salary Expense ²
Director/Physician	0.5-1.00	\$170,000
Registered Nurse Care Coordinator	2.1-4.2	\$357,000
Care Coordinator	2.1-4.2	\$253,000
Research Assistant/Data Analyst	0.0-1.5	\$102,000
Community Health Worker	0.8-2.9	\$92,000
Nutritionist	0.0-1.5	\$62,000
Social Worker	0.8-1.5	\$57,000
Behavioral Health Worker	0.0-1.0	\$85,000
Parent/Family Advisors and Mentors	0.0-1.5	\$45,000

The cost of the care team ranges from \$516,000 to \$1,383,000 for 6.3 to 19.3 FTEs (\$86 - \$230 per member per month (PMPM)). As enrollment in a care management program expands and the acuity of the population changes, so will the FTE distributions. Therefore, the composition of the care team will need to be modified parallel to the further development of a care management program.

Including Operating Expenses

The requirements of a care management program for the CMC population include the use of resources that expand into typical operating costs. Calculation of operating expenses may differ considerably by program location, however, a general estimate includes:

Operating Expenses	Estimated Cost Range
Fringe Benefits	\$134,000-\$360,000
Overhead & Allocated Expenses	\$60,000
Space	\$35,000
Telehealth Technology	\$18,000

This comes to an estimated range of \$247,000 to \$473,000 (\$41 - \$79 PMPM) for a 500 patient population. It is invaluable to work with the financial team in the health system to accurately calculate expected operating expenses.

Adding in Family Supportive Services

Industry research reveals social and environment determinants are connected to the overall health of patients and their families. Non-medical external influencers may have a significant impact on the health condition of a patient and if left unaddressed, could potentially jeopardize care treatment. The inclusion of supportive services in a care management model “can improve health and well-being, meet care plan goals, enhance the patient experience and control costs.”⁴

Using a current children’s hospital CARE program as a benchmark for supportive services, the following are recommended to include in estimates for care management costs for this population:

- Home/Housing Assistance
- Health Education
- Environment Mitigation
- Transportation
- Social Resources
- Supplies
- Support Groups

Costs of these services will vary by geographic region and need. The following estimates reflect a 2016 case study example for a pediatric capitated population.

Supportive Services	Estimated Cost Range⁵
Home/Housing Assistance	\$12,000-\$15,000
Health Education	\$9,500-\$12,000
Environment Mitigation	\$6,000-\$8,000
Transportation	\$6,000-\$8,000
Social Resources	\$6,000-\$8,000
Supplies	\$2,500-\$3,000
Support Groups	\$1,500-\$2,000

Providing a base group of supportive services ranges from \$43,500 to \$58,000 (\$7 - \$10 PMPM) for a 500 patient population.

Coming to a Grand Total

Award experience shows an optimal care management program includes a dynamic care team and provision of family supportive services that meet the needs of the specific population. Knowing the costs above and beyond traditional FFS reimbursement to operate such a program is important to the sustainability and reduction of financial risk exposure. To offset the costs of care management children’s hospitals need to develop an infrastructure that can effectively lower cost and utilization and pair it with an alternative payment model that aligns incentives.

For a population of 500 patients, the total estimated range in cost for a care team, operating expenses, and family supportive services is \$806,500 to \$1,914,000 (\$134 - \$320 PMPM). Future cost estimates must calculate in an appropriate inflation rate. With the exception of the physician oversight, most of the expense is variable. Studies are emerging which show that savings from reductions in emergency department visits and hospital days offset improved care management expense. Hopefully, these programs will also result in improved patient/family experience.⁶

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References

¹Coordinating All Resources Effectively (CARE) for Children with Medical Complexity.

²National average from bls.gov. 2016.

³General estimate is \$6,000 per primary care provider (PCP), average each program works with three PCPs

⁴Spener A., Lloyd J., McGinnis T. "Using Medicaid Resources to Pay for Health-Related Supportive Services: Early Lessons". Center for Health Care Strategies, Inc. BRIEF, December 2015.

⁵Based on 2016 costs for CARE Award site currently using supportive services in care management program

⁶Casey PH., Lyle RE., Bird TM., Robbins JM., Kuo DZ., Brown C., Lal A., Tanios A., Burns K. "Effect of Hospital-based Comprehensive Care Clinic on Health Costs for Medicaid-insured Medically Complex Children". <http://www.ncbi.nlm.nih.gov/pubmed/21300650>

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