

# Value-Based Payment to Support Children's Health and Wellness: Shifting the Focus from Short-Term to Life Course Impact

SEPTEMBER 2021



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## INTRODUCTION

Health care payers, providers, and policymakers are increasingly pursuing value-based payment (VBP) models as a strategy to improve the quality of care and population health while controlling rising health care costs.<sup>1</sup> VBP models are provider payment methods that move away from fee-for-service (FFS), which pays providers based on the volume of services they provide, to incentivize value and high-quality care.<sup>2</sup> As VBP becomes more widely adopted in Medicaid,<sup>3</sup> there is a growing need for states to evaluate how children's health can be supported by these models. With 38 percent of children in the United States covered by Medicaid, including up to 45 percent of children 0–5 years old,<sup>4</sup> there is a particular opportunity for states to leverage VBP programs to support pediatric care transformation.<sup>5</sup> However, while Medicaid VBP programs often serve both children and adults, such models typically do not fully account for children's distinct health needs. For example, pediatric populations are generally healthier and lower-cost than adult populations. Childhood is a period of rapid development, with childhood health impacting health and social outcomes later in life. Additionally, as children's health is inextricably linked to the well-being of caregivers, improving children's health also requires a focus on family units, not just caring for individuals.<sup>6</sup>

These aspects of children's health should be considered in VBP design.<sup>7,8,9</sup> Because children are not just little adults and have distinct health needs, payment models designed primarily for adult populations may not effectively incentivize quality improvement in pediatric care. Of particular concern, cost-saving incentives built into many VBP programs may drive care delivery reforms for adults with complex health and social needs and not adequately incentivize health systems to focus on pediatric populations that tend to be healthier and have lower health care costs. Additionally, VBP strategies that focus on short-term health system costs may not be effective for pediatric patients, as the return on investment for children's health is often realized long term and may accrue in sectors outside the health system, such as education or child welfare. VBP models serving pediatric populations may need to focus more on quality and improving long-term health and social outcomes than on achieving short-term health savings.<sup>10,11,12</sup>

In Massachusetts, VBP is a central strategy for MassHealth, which administers Medicaid and the Children's Health Insurance Program. In 2018, the state implemented the MassHealth Accountable Care Organization Program (ACO Program) to support the state's commitment to improving the quality and member experience of care and integrating and coordinating the full spectrum of health services, including behavioral health services. MassHealth defines accountable care organizations (ACOs) as "networks of physicians, hospitals, and other community-based health care providers" that are financially accountable for the cost and quality of care for MassHealth members.<sup>13</sup> The ACO Program was implemented under Massachusetts' Delivery System Reform Incentive Payment (DSRIP) program, a five-year, \$1.8 billion federal investment program aimed at improving the health system for Medicaid members. Alongside investment in ACOs, DSRIP funds also support initiatives such as the Community Partners (CPs) program, which supports care management for individuals with behavioral health and long-term services and supports needs; the Flexible Services Program, which allows ACOs to pay for health-related nutrition and housing supports for certain members; and statewide investments in areas such as the primary care and behavioral health workforce and capacity-building for ACOs and CPs.<sup>14,15,16</sup>

As with many VBP programs across the country, the MassHealth ACO Program is designed to serve both children and adults. As of April 2019, approximately half of MassHealth members eligible for ACO enrollment were children.<sup>17</sup> Many Medicaid ACOs in the state provide care to both children and adults, and one ACO, Boston Children's Accountable Care Organization, serves only children. As MassHealth and other stakeholders begin to assess the early impacts of ACOs and plan for the evolution of the ACO Program, there may be ways to adapt the ACO model to better recognize the distinct health and social needs of the pediatric population. MassHealth has identified investing in pediatric care as an explicit goal in planning for the future of the ACO Program and is engaging stakeholders, including the Child and Adolescent Health Initiative (CAHI), a multi-sector workgroup supported by the Massachusetts Chapter of the American Academy of Pediatrics and aimed at identifying opportunities to better serve children in Medicaid. CAHI recently released a report outlining recommendations to strengthen the support for pediatric care in MassHealth.<sup>18,19</sup>

This report seeks to inform the work of Massachusetts policymakers and stakeholders to better incorporate children’s health needs and experiences within the payment models in the MassHealth ACO Program by examining lessons from states and providers throughout the country. This report does not recommend a specific pediatric-focused payment model for Massachusetts but rather shares examples of models and considerations to support stakeholders in determining the best path forward. The report is organized into the following sections:

- **Methodology** describes the methods and goals of the environmental scan.
- **Overview of Medicaid VBP Models Serving Children** provides a summary of VBP models focused on children, gives examples, and discusses the evidence regarding the impact of these VBP models.
- **Key Themes from Subject Matter Expert Interviews and Literature Review** draws from the interviews, literature review, and analysis of existing models to describe future opportunities for and challenges to designing VBP models serving children.
- **Policy and Program Considerations for Massachusetts** outlines considerations for Massachusetts stakeholders as they work to adapt the MassHealth ACO Program to better meet children’s needs and position the state as a leader in advancing children’s health through VBP.

Overall, while there is limited literature on the effectiveness of pediatric VBP models, a number of states and provider organizations across the country have implemented or are considering VBP models focused on children. Our research suggests there is great opportunity for Massachusetts to serve as a leader in this field, learning from the limited experience to date while testing new approaches that consider the health and social needs of children and their families. Achieving this goal will likely require a focus on quality improvement for children’s health services as opposed to short-term cost savings, and supporting investments in care models that address the needs of family units and upstream social and environmental influences on children’s well-being.

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## METHODOLOGY

This report is based on an environmental scan including (1) peer-reviewed and gray literature on VBP models to support pediatric populations; and (2) interviews with 18 subject matter experts (see Appendix A for the list of experts interviewed and the criteria used to select interviewees). For the purposes of this report, “VBP” is defined according to the Alternative Payment Model Framework provided by the Health Care Payment Learning and Action Network (LAN APM Framework)<sup>20</sup> (within this paper, the terms VBP and APM are used interchangeably).<sup>21</sup> Under the LAN APM Framework, payment models that directly link payment to quality of performance are considered VBP (see “Key Value-Based Payment Definitions” on [page 3](#) for more information).

The literature review and interviews sought to understand the range of VBP options to support pediatric populations, while going most in depth on models relevant to the Massachusetts policy context. For example, the scan focused more heavily on VBP models implemented in the context of provider-based ACO programs—programs similar to the Massachusetts ACO model—than on other models. At the same time, the environmental scan sought to understand potential lessons from VBP models implemented in different contexts or with a narrower care delivery focus.

The environmental scan identified VBP models serving children that support a variety of delivery system focus areas, including (1) ACOs covering a broad range of medical services; (2) primary-care-focused models; and (3) episode-based models focusing on specific conditions or procedures. The review also explored state and provider plans for the federally funded Integrated Care for Kids (InCK) Model, which is a key enabler of innovation in VBP models focused on children. This report is not a comprehensive review of existing VBP models focused on children but rather highlights examples of VBP options that could help advance child health goals in Massachusetts.

## OVERVIEW OF MEDICAID VALUE-BASED PAYMENT MODELS SERVING CHILDREN

While VBP is becoming increasingly widespread, including among pediatricians,<sup>22</sup> few existing models are specifically designed to serve pediatric populations. Within Medicaid, many state-designed VBP arrangements include both children and adults. Many of the existing pediatric-specific models are individually negotiated arrangements between pediatric providers and payers, as opposed to models implemented by states. States, the federal government, and other stakeholders are increasingly focusing on how to design VBP models to meet children’s needs, though most of these efforts are in early stages.

### KEY VALUE-BASED PAYMENT DEFINITIONS<sup>23</sup>

<b>Value-based payment (VBP)</b>	Payment models that link payment to performance on quality metrics or cost.
<b>Fee-for-service (FFS)</b>	Payments made for units of service such as tests, visits, procedures, etc.
<b>Pay-for-performance</b>	VBP models in which the base payment is FFS and providers may receive incentives or penalties for performance on quality or efficiency measures.
<b>Shared savings models (upside-only shared savings)</b>	VBP models under which the base payment is FFS and providers may earn a portion of savings if their costs are below a defined benchmark. Shared savings models can vary in scope and be applied to a narrow range of services (e.g., as in “episode of care models”) or the majority of health services (e.g., as in “total cost of care” models). Providers must meet quality metrics to earn shared savings payments.
<b>Shared savings/risk models (shared savings with downside risk)</b>	Payment models under which providers may earn a portion of savings if their costs are below a defined benchmark <i>and</i> are accountable for downside risk, meaning that they pay a portion of the costs above the benchmark should that benchmark be exceeded.
<b>Prospective payment models</b>	Predictable upfront payments that are not dependent on specific services rendered. This model typically includes monthly payments made for each patient attributed to a provider. Prospective payments may cover a broad array of health services (as in capitation models) or be smaller payments to supplement FFS payments (as in monthly payments to support patient-centered medical home capabilities). <sup>24</sup>
<b>Capitation</b>	A type of prospective payment that covers a broad array of health care services (e.g., all primary care services or all physical health services). Capitation is considered a “full risk” model as providers can keep the savings below the capitated rate but also bear the risk for costs above the payment. For capitation to be considered VBP, a portion of the capitated payment must be directly linked to quality performance.

### ACO Models and Pediatric Populations

ACO programs are an approach to delivery system reform aimed at improving care coordination and holding providers accountable for the quality and cost of care for their patient populations.<sup>25</sup> Most commonly, ACO programs include an upside-only shared savings or shared savings/risk payment model based on total cost of care (TCOC) and tied to quality performance. TCOC typically includes physical health services and may also include other service categories such as behavioral health, pharmacy, and/or long-term services and supports. Some ACO programs employ other payment models such as capitated payment tied to quality performance and/or narrower per member per month (PMPM) payments to support new provider capabilities such as care management.<sup>26</sup>

Many state-led Medicaid ACO models include both adult and pediatric populations—including ACO programs in Delaware,<sup>27</sup> Maine,<sup>28</sup> Minnesota,<sup>29</sup> Rhode Island,<sup>30</sup> and Vermont,<sup>31</sup> as well as Massachusetts.<sup>32</sup> Additionally, some Medicaid ACO programs, such as those in Delaware,<sup>33</sup> Massachusetts,<sup>34</sup> and Minnesota<sup>35</sup> include pediatric-specific

ACOs (e.g., ACOs composed of a children’s hospital and pediatric provider network) as program participants. In such cases, pediatric-specific ACOs are generally expected to participate in the same payment arrangement as organizations serving adults, though some minor modifications may be made. In Minnesota, for example, the ACO quality measures for pediatric-only ACOs are adapted from the standard set to accommodate the pediatric population.

In addition to state-led Medicaid ACO programs, VBP literature also describes examples of pediatric providers forming Medicaid ACO arrangements absent broader state programs. ACOs mentioned in the literature generally adopted one or a combination of the following models: (1) FFS with an additional PMPM payment for care management/ wrap-around services; (2) upside-only shared savings models; (3) shared savings/risk models; and (4) full capitation models.<sup>36,37</sup> Partners for Kids (PFK), an ACO serving Medicaid-enrolled children in a 34-county region in Ohio, provides one example of a Medicaid ACO formed by a pediatric provider absent any broader state program. Despite the aforementioned challenges in containing costs in pediatric populations, PFK has seen success in containing costs as compared with Ohio FFS Medicaid. The PFK payment model is described in Exhibit 1 on [page 6](#).

## Primary Care Models

As with ACO models, Medicaid primary care–focused VBP models can include a wide variety of payment types. These models differ from ACOs in that they tend to allow participation by smaller primary care practices and have more narrowly focused, primary care–specific care delivery requirements.

Examples of existing primary care payment models customized for children can be found in Ohio and Rhode Island. The Ohio Comprehensive Primary Care (CPC) model serves both adults and children; it offers a PMPM payment to primary care providers to support care coordination activities and also a shared savings payment based on TCOC, in addition to existing payment arrangements. Ohio recently launched a CPC for Kids subcomponent to better meet the health needs of children and incentivize pediatric provider participation. The pediatric-focused subcomponent makes additional performance-based payment streams available to pediatric providers, as described in Exhibit 2 on [page 6](#). In Rhode Island, following implementation of an adult patient-centered medical home (PCMH) program, the state implemented the PCMH-Kids initiative. The program offers PMPM care coordination payments from commercial and Medicaid managed care plans to support PCMH transformation and activities, tied to quality performance.<sup>38,39</sup> Other states are also exploring opportunities to better support pediatric primary care through VBP in the future. For example, a state-sponsored subcommittee in New York has proposed a capitated primary care payment model for children in the bottom 90th percentile of cost/utilization (see Exhibit 3 on [page 7](#)).

## Episode of Care Programs

Episode of care arrangements incentivize providers to improve quality and reduce costs for specific conditions or procedures over a defined time period. Payment models for episode of care programs can include: (1) FFS base payment with upside or downside shared savings arrangements based on benchmark costs for the defined condition; or (2) an upfront PMPM payment to cover costs for the defined condition. Some states, such as Ohio and Tennessee, have episode of care programs that include episodes for conditions/procedures specific to or common among children. Tennessee has episodes for attention deficit hyperactivity disorder,<sup>40</sup> bronchiolitis,<sup>41</sup> oppositional defiant disorder,<sup>42</sup> otitis media,<sup>43</sup> pediatric pneumonia,<sup>44</sup> and tonsillectomy.<sup>45</sup> Under Tennessee’s episode of care models, providers are paid based on a FFS model. They are eligible to earn a share of savings if they meet quality benchmarks and if the episode spend is below a “commendable” threshold, and they owe a risk-sharing payment if episode spend exceeds an “acceptable” threshold.<sup>46</sup> The episodes included in state models vary, but Ohio’s payment model operates similarly.<sup>47</sup> Arkansas too had an episode of care program including pediatric-focused episodes with a VBP incentive but ended it in July 2020.<sup>48</sup> Tennessee, Ohio, and Arkansas have also implemented maternity care episodes with similar payment mechanisms, and other states including New Jersey and Washington are developing maternity care episodes.<sup>49,50</sup> Maternity care VBP models offer the potential to improve children’s health because of the impact of maternal health on neonatal and pediatric outcomes.

## Integrated Care for Kids Model

The Integrated Care for Kids (InCK) model, which the Center for Medicare and Medicaid Innovation (CMMI) launched in early 2020, is a key driver and enabler of innovative pediatric VBP models. InCK awardees include Medicaid agencies and organizations in seven states: Connecticut, Illinois, New Jersey, New York, North Carolina, Ohio, and Oregon. The model supports states and local providers in improving child health, reducing avoidable inpatient stays and out-of-home placement, and creating pediatric VBP models. Through the initiative, Medicaid agencies, provider organizations, and community stakeholders will pilot state-specific delivery system and payment models to improve early identification and treatment of health needs and better integrate care across sectors including physical health, behavioral health, and other local services. InCK is currently in the pre-implementation period, during which the Centers for Medicare & Medicaid Services (CMS) and awardees are refining models and developing the infrastructure needed for implementation.<sup>51</sup> Examples of early plans for InCK VBP models in select states are given in Exhibit 4 on page 7.

## Evidence of Impact of VBP on Children's Health

The evidence about cost and quality outcomes for pediatric populations under VBP programs, as well as Medicaid VBP program performance in general, is limited. Peer-reviewed literature has only a few studies related to the impact of VBP on pediatric populations specifically. A study on the Partners for Kids (PFK) ACO in Ohio (see Exhibit 1 on page 6) showed the ACO had lower cost growth from 2008 to 2013 than did Ohio FFS Medicaid. PFK PMPM costs during this time period grew by \$2.40 per year, while Ohio Medicaid FFS costs increased \$16.15 per year. PFK PMPM cost growth was also lower than that of Ohio Medicaid managed care (\$6.47 per year), though this result was not statistically significant.<sup>52</sup> Outside of Medicaid, Blue Cross Blue Shield of Massachusetts' Alternative Quality Contract demonstrated positive quality results, though no spending impacts, for children in the first two years of a commercial ACO arrangement (global payment with quality bonuses) serving both children and adults. The study showed improvement on a composite of pay-for-performance measures including those related to chlamydia screening, pharyngitis testing, upper respiratory infection treatment, and wellness visits.<sup>53</sup> Collectively, these studies suggest potential benefits of VBP for pediatric populations but are not enough on which to base broad conclusions. Availability of state reporting and evaluations related to pediatric quality and cost performance in VBP models is also limited. Overall, more research is needed to determine the extent to which VBP can result in quality improvement and cost savings for children and what type of VBP models are most effective for pediatric populations.



## EXHIBIT 1. PARTNERS FOR KIDS ACO

**Background:** Nationwide Children's Hospital (NCH), located in Columbus, Ohio, is one of the largest pediatric hospitals in the country. Partners for Kids (PFK) is an ACO that brings together NCH and community pediatricians to serve approximately 325,000 children annually in southeastern and south-central Ohio. PFK holds VBP contracts with all five Ohio Medicaid managed care plans.<sup>54,55,56</sup>

**Payment Model:** PFK receives capitated payments from Medicaid managed care organizations (MCOs), in the form of age- and gender-adjusted PMPM payments and is responsible for managing and reimbursing providers for physical and behavioral health services. PFK is allowed to keep generated savings if costs are below the PMPM amount and is responsible for losses if spending is more than the PMPM.<sup>57,58,59</sup>

PFK also receives financial incentives for performance on a subset of MCO quality measures.<sup>60</sup> In addition, at the physician level PFK has implemented a pay-for-performance program for a subset of in-network physicians.<sup>61</sup>

**Performance Results:** A study examining changes from 2008 to 2013 showed that PFK significantly reduced growth in PMPM costs as compared with Ohio FFS Medicaid and maintained quality. PFK's growth rate was not significantly lower than the growth rate of Ohio Medicaid managed care costs.<sup>62</sup>

## EXHIBIT 2. OHIO COMPREHENSIVE PRIMARY CARE FOR KIDS

**Background:** Implemented in 2017, Ohio Comprehensive Primary Care (Ohio CPC) is a PCMH program that is voluntary for providers and includes a VBP arrangement. In 2020, Ohio introduced CPC for Kids as a subcomponent of its broader CPC program.

### Payment Model:

- **General Ohio CPC model.** Under Ohio CPC, primary care practices meeting care delivery requirements and performance standards are eligible for two payment streams in addition to existing payment arrangements with MCOs: (1) a risk-adjusted PMPM to support care coordination activities; and (2) a shared savings payment based on TCOC (large practices only).<sup>63,64</sup>
- **CPC for Kids component.** In addition to the general Ohio CPC program payments as described above, CPC for Kids includes additional pediatric quality metrics and introduces two new payment streams: (1) an enhanced PMPM; and (2) an annual bonus payment to the highest-performing practices.
  - **Additional quality metrics.** In addition to existing Ohio CPC child health metrics for well visits and weight assessment/counseling, CPC for Kids has additional pediatric-focused metrics related to lead screening, immunizations, tobacco cessation, and oral health.
  - **Enhanced PMPM.** Practices meeting state-defined care delivery standards<sup>65</sup> and quality and efficiency performance requirements are eligible to receive an additional \$1.00 PMPM for attributed pediatric members on top of the preexisting risk-adjusted PMPM payment for each CPC member.
  - **Annual bonus payment.** The bonus payment is contingent upon meeting quality standards and achieving shared savings (if applicable). A \$2 million bonus pool is divided among the 13 highest-performing practices participating in CPC for Kids. The awards are based on scores on the CPC for Kids bonus payment scorecard, which evaluates practice capabilities in areas such as supports for children in foster care, behavioral health linkages, and school linkages.<sup>66,67</sup>

**EXHIBIT 3. NEW YORK CHILDREN’S HEALTH SUBCOMMITTEE’S PROPOSED PRIMARY CARE MODEL**

**Background:** In New York, a state-sponsored Children’s Health Subcommittee was launched in 2016 and convened a group of experts from fields such as pediatrics, behavioral health, managed care, child welfare, and child advocacy. The group’s aim was to assess the fit of existing VBP models for pediatric populations and recommend improvements.<sup>68,69</sup>

**Proposed Payment Model:** The group ultimately recommended that the state pilot a primary care VBP model for children with the following features:

- A focus on the majority of children in Medicaid, defined as Medicaid managed care members in the bottom 90th percentile of cost/utilization for children. The group made an explicit choice not to make VBP recommendations for the 10 percent of child enrollees with complex physical or behavioral healthcare needs, as the unpredictability of diverse conditions affecting this population and the small numbers of these individuals treated by any individual health system make development of VBP models particularly challenging.
- A capitated payment arrangement for pediatric primary care that is:
  - Risk-adjusted;
  - Higher than the baseline pediatric primary care payment; and
  - Adjusted based on quality performance.<sup>70</sup>

Although the model has not yet been implemented, New York has taken steps toward adapting its VBP approach to better meet child health needs. For example, per subcommittee recommendations, the state developed a children’s quality measure set to encourage use of pediatric measures in VBP arrangements that include children.

**EXHIBIT 4. EXAMPLES OF PLANNED INTEGRATED CARE FOR KIDS MODELS**

State	<b>Connecticut.</b> <sup>71</sup> Project to be implemented by Clifford W. Beers Guidance Clinic (awardee and lead organization <sup>72</sup> ) <sup>73</sup> and Connecticut Department of Social Services, HUSKY Health (Connecticut’s Medicaid and Children’s Health Insurance Program).	<b>Oregon.</b> <sup>74</sup> Project to be implemented by Oregon Health Authority (awardee) and Oregon Pediatric Improvement Partnership (lead organization). <sup>75</sup>
Overview	The model will identify high-risk children and pregnant women, conduct comprehensive screening, provide culturally and linguistically competent care coordination support, increase shared decision-making, support access to mobile crisis response services, and enable information sharing across provider and community partners.	The model will leverage the existing roles of Coordinated Care Organizations, <sup>76</sup> Patient-Centered Primary Care Homes (PCPCH), and specialty providers to develop regional and population-based health improvement efforts in collaboration with local child services providers. Planned activities include training and supports related to access, prevention and screening, population-level risk stratification, and region-specific Service Integration Coordinators.
Planned Payment Model	The model will include a risk-adjusted PMPM payment to support integrated care coordinators. PMPM payments will also be adjusted for outcomes on key quality performance measures.	The model will have three components: <ol style="list-style-type: none"> <li>1. PMPM payments to support PCPCHs in screening and care coordination.</li> <li>2. A combination of FFS, care management PMPM payments, and retrospective shared savings based on TCOC for children with medical complexity.</li> <li>3. Case rates for parent/caregiver-child dyadic therapy and supports.</li> </ol>

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## KEY THEMES FROM SUBJECT MATTER EXPERT INTERVIEWS AND LITERATURE REVIEW

Seven key themes emerged from our subject matter expert interviews and literature review and are described below:

1. There are limited opportunities for short-term, direct health care cost savings among pediatric populations compared to adult populations.
2. Investment in child well-being may support lifelong wellness and result in a long-term return on investment (ROI) for society.
3. To promote long-term health and health equity, the health system needs to focus more on upstream prevention.
4. VBP models that emphasize investment in children's health and prospective payment offer the potential to better support child wellness.
5. Challenges in developing VBP models serving children may differ between pediatric-only providers and providers serving both children and adults.
6. There is an opportunity to develop more meaningful and outcomes-based quality measures for children.
7. VBP alone is not enough to address funding and data-sharing barriers to upstream interventions.

### **1. There are limited opportunities for short-term, direct health care cost savings among pediatric populations compared to adult populations.**

The pediatric population is generally healthy<sup>77,78</sup> and, on average, health care spending is lower for pediatric populations than adult ones. Pediatric care is largely focused on development and preventive care,<sup>79</sup> and children have fewer chronic conditions than adults.<sup>80,81,82</sup> In addition, personal health care spending in the United States increases with age, and per capita health care spending is less for children than for other age groups.<sup>83</sup> While interviewees and the literature reported that some pediatric providers have achieved cost savings, they also suggested that the factors just described result in limited overall opportunities for short-term health care cost savings.<sup>84,85,86,87</sup> To the extent that opportunity for savings in pediatric care does exist, such savings would likely be smaller than the cost savings for the adult population, and the savings may accrue to systems beyond health care such as social supports or education.

Many VBP models, such as shared-savings models, benefit provider practices that can reduce costs in a relatively short time frame, typically one year. Such arrangements provide significant opportunities for provider organizations that can better manage costly chronic illnesses common in adult populations but may be less financially beneficial for providers serving pediatric populations where there is a thinner margin for potential savings on medical care.<sup>88</sup> In some areas of care, such as primary care and behavioral health, increased investment may actually be needed to expand access to preventive care or treatment that may have long-term ROI but limited near-term cost savings.<sup>89</sup> Interviewees cited lack of short-term savings opportunities in health care as a barrier to garnering both payer and provider interest in VBP models focused on pediatric populations. They noted that provider organizations participating in shared savings models serving both adults and children often focus their care transformation efforts on the adult population.

To the extent there are opportunities for short-term savings within pediatrics, such savings are most likely found in the relatively low percentage of children with medical complexity who particularly benefit from improved care management.<sup>90,91,92</sup> Some care coordination programs for children with complex needs have resulted in program cost savings, suggesting such interventions may be promising under VBP models that emphasize short-term savings.<sup>93,94,95</sup>

That said, there is no consensus on the extent to which there may be shared savings opportunities for children with complex needs, and in some cases, high utilization and costs may be unavoidable.<sup>96,97</sup> Additionally, while there may be some short-term savings opportunities among pediatric populations with complex needs, this potential savings is still likely small in comparison to adult populations with a higher prevalence of chronic conditions.<sup>98</sup>

## 2. Investment in child well-being may support lifelong wellness and result in a long-term return on investment (ROI) for society.

Maternal and child health and experiences throughout childhood build the foundation for lifelong health. Early childhood is a time of rapid development and an important period in influencing long-term physical, social, and emotional health.<sup>99,100</sup> For example, toxic stress related to adverse childhood experiences and unmet social needs during childhood can do harm to the nervous, endocrine, and immune systems.<sup>101,102,103</sup> Evidence increasingly suggests that many common and costly adult chronic conditions such as cardiovascular conditions, diabetes, and depression are more common among individuals who experienced childhood adversity.<sup>104</sup> Beyond health outcomes, children exposed to toxic stress may be at greater risk for negative social outcomes throughout their lives, such as becoming involved in the criminal justice system or experiencing barriers to learning and educational achievement, to healthy relationships, and to stable employment.<sup>105</sup>

While opportunities for short-term financial savings may be limited, investment in child health, education, and well-being likely provide a large ROI in the long term, not just within health care but for society as a whole. Studies suggest early investment in maternal and child health and education impact adult well-being. For example, for children from families with low incomes, eligibility for Medicaid in childhood is associated with better health in adulthood as well as positive social impacts such as better educational and economic outcomes.<sup>106</sup> Home visitation as well as early childhood education programs have long-term positive health and social impacts related to societal ROI.<sup>107,108,109,110,111</sup> VBP models serving pediatric populations may need to refocus their goals on quality and improving long-term health and social outcomes rather than on achieving short-term health savings.<sup>112,113,114</sup>

Despite these opportunities, incentivizing investment in child health and well-being in VBP is challenging. In addition to inherent challenges with building the case for investing in longer-term versus shorter-term ROI, child health investments also face the “wrong pockets problem”<sup>115</sup>—meaning that the entities that invest in near-term child health are not likely to be the same entities that will reap the long-term financial ROI. Specifically, health care investments may result in future benefits and savings in sectors such as education, criminal justice, child welfare systems (and vice versa—investment in education may result in health benefits, etc.). The wrong pockets problem can also arise within the health system itself. Health plans or ACOs that invest in children are unlikely to reap the rewards of long-term health improvements due to patient churn between health plans and providers over time.<sup>116</sup>

## 3. To promote long-term health and health equity, the health system needs to focus more on upstream prevention.

The literature and interviewees described a variety of health care domains, such as primary and behavioral health care, care management for children with complex needs, and maternity care, in which VBP could support better care for children. However, regardless of population or condition of focus, a common thread is the need for VBP to support the adoption of delivery system and care models that further prioritize upstream prevention and that promote health equity.<sup>117,118,119</sup> Investing in care models that promote safe, healthy environments, support caregiver relationships, address health-related social needs (HRSN), and make health equity an explicit goal not only are necessary to address the immediate health of children but can improve health over the life course and possibly yield a long-term ROI.

**Multigenerational Approaches to Care:** One aspect of an upstream focus is implementing multigenerational approaches to care that recognize the impact of caregivers’ health on children’s well-being and address the needs of

the whole family.<sup>120,121</sup> The health and well-being of children is intrinsically tied to the health and well-being of adult caregivers. Food and housing insecurity, physical and sexual abuse, and an unstable family environment—all things a family experiences together—can negatively impact a child’s health and well-being.<sup>122</sup> Safe environments and stable and responsive relationships with adults help prevent adverse physiological disruptions and support healthy development of brain architecture.<sup>123</sup> Multigenerational approaches to care that intentionally address adults’ and children’s health and social needs have the potential to mitigate intergenerational patterns of illness and create the environment to develop a healthier society. Interviewees and the literature suggested that supporting families should be a central consideration in defining value and developing VBP models for pediatric populations.<sup>124,125,126</sup>

Many aspects of the health system create barriers to multigenerational care.<sup>127</sup> For example, family members may be enrolled in different health plans or receive care from different provider organizations, and care coordination between pediatric and adult providers is often limited. Additionally, FFS payment typically does not allow pediatric providers to provide services for parents. There has been some progress in this area, since Early Periodic Screening, Diagnosis and Treatment allows for maternal-depression screening during a well-child visit, but providing services to address a positive screen is often still challenging. For example, there may be opportunities to better finance and expand access to services such as dyadic therapy, a psychotherapeutic treatment method for families that have children with symptoms of emotional disorders. It involves offering joint therapy to the parent and child, as well as one-on-one sessions with just the parent to help address traumatic experiences in the parent’s life that may be impacting the parent-child relationship.

Neither the interviews nor the literature review provided definitive recommendations for how best to pay for or incentivize multigenerational care. Ideally, the payment mechanism would align with the specific delivery system model that stakeholders seek to adopt. Some potential options for incentivizing multigenerational care may include bundled payments/case rates for defined interventions (e.g., dyadic therapy), calculating ROI or sharing savings based on cost benchmarks for families,<sup>128</sup> or providing payment and other supports (e.g., IT supports or technical assistance) to enable care coordination among adult and pediatric providers. For example, New York–based AsOne Healthcare Independent Practice Association is developing a care model aimed at improving outcomes for entire families that could potentially be supported through VBP. The model, which has not yet been implemented, aims to overcome the common challenge of limited opportunity for short-term ROI in children by engaging families whose high-risk adult members are more likely to generate cost savings. This could enable the practice association to offset costs of preventive services for children (see Exhibit 5 on page 15).

**Coordination with Sectors Outside Health Care:** In addition to supporting multigenerational care, pediatric VBP models can promote child health and well-being by improving the coordination and integration of health care with social services outside the health system.<sup>129,130,131</sup> While addressing HRSN is critical for improving the health of both children and adults, meeting the social needs of children may be particularly impactful in improving long-term health outcomes. Additionally, addressing HRSN for children often requires coordination with different social service providers or systems, such as child care, education, and child welfare systems, than for adults.

VBP can potentially support more upstream-focused delivery system models through various approaches, including more flexible payment streams not tied to specific service codes (e.g., PMPMs), increased total payment for pediatric services, and quality measures that incentivize HRSN interventions. Interviewees described a variety of existing or planned interventions aimed at addressing HRSN for children and families under VBP models, including efforts to expand screening for HRSN, support connections to social services, and develop partnerships with community-based organizations. Interviewees particularly emphasized the need to go outside the walls of the health system to provide services in community-based settings, such as homes and schools, to be most accessible and culturally responsive. For example, interviewees described the use of community health workers to meet families in their homes and neighborhoods or embedding mental health services in schools to address mental health needs, including trauma.

A number of interviewees also described the potential of delivery system and/or payment models that address and take accountability for the health needs of a specific geographic region. Such models may be well positioned for addressing

community-level physical and social environments that impact family well-being and child development,<sup>132</sup> as well as for supporting community or regional-level goal-setting and coordination of services across a wide range of sectors. For example, as detailed in Exhibit 6 on page 15, some states have implemented Accountable Communities for Health (ACH) models that focus on building infrastructure for multi-sector collaboration. While these models are rarely tied to VBP, such models provide examples of elements that could be integrated into, or implemented alongside, VBP programs.

**Promoting Health Equity:** An essential goal of any VBP model for children as well as upstream care delivery interventions is to reduce longstanding health inequities that impact lifelong health. For example, health inequities across race, ethnicity, and income are demonstrated by different rates of low birth weight, childhood chronic diseases, and behavioral health conditions.<sup>133</sup> Such inequities are also seen in broader measures of child well-being such as early life adversity and school readiness.<sup>134</sup>

Many interviewees described achieving health equity as a goal of pediatric VBP models and quality improvement efforts. For example, one interviewee reported that quality measurement approaches implemented through VBP model participation helped draw attention to such inequities and spur efforts to address them. Another described plans to implement quality measures that would tie payment to reducing health inequities. Additionally, interviewees and the literature describe addressing HRSN and implementing intergenerational approaches to care as necessary steps to support health equity, along with strategies such as measuring and tracking inequities, developing approaches to provide culturally competent care, and addressing racial biases within the health system. The Minnesota Integrated Health Partnerships (IHP) model, a state ACO program that includes both children and adults, provides one example of a VBP model with explicit requirements related to equity. IHPs are required to implement a quality improvement intervention related to addressing health equity and must select and report on equity-related measures.<sup>135</sup>

Despite the potential for VBP models to incentivize health equity, few pediatric or adult VBP models have quality metrics explicitly measuring and incentivizing it. Implementing such an approach may require advancing provider capabilities to capture race, ethnicity, and language data.

#### **4. VBP models that emphasize investment in children’s health and prospective payment offer the potential to better support child wellness.**

As described above, few VBP models have been designed specifically for children, and evidence on the impact of VBP on pediatric populations is limited. The environmental scan did not find consensus on what VBP models are most appropriate for children. However, models with a prospective payment mechanism may be particularly beneficial. Prospective payments, such as care management PMPM fees or full or partial capitation, can potentially provide increased flexibility for pediatric providers to implement care models not traditionally reimbursed by FFS, including HRSN interventions to support prevention and long-term health improvement. Under shared savings models, providers typically do not get additional funds to invest in population health programs unless savings are achieved first. Models that include prospective payments could provide additional flexibility and/or funds to providers to improve quality before savings are achieved. The Partners for Kids model (Exhibit 1 on page 6) and the model proposed by New York Children’s Health Subcommittee (Exhibit 3 on page 7) both include this feature.

Interviewees reported that additional investment in children’s health may be needed to support care models that can achieve positive long-term health outcomes and ROI. This could be done by increasing overall payment for child health services or developing new payment streams. One example of a model that combines these strategies is the Ohio CPC for Kids model, which provides resources to pediatric providers through two mechanisms: (1) an enhanced PMPM payment to support activities that are undercompensated or uncompensated; and (2) the potential to earn an additional lump-sum performance-based bonus payment (see Exhibit 2 on page 6). Some literature has proposed more innovative models of VBP design to support increased investment, such as including net present value (NPV)



calculations in VBP. An NPV approach would estimate future cost savings from health system interventions to share projected future-year savings with providers.<sup>136</sup> Stakeholders could explore such an approach as a means of explicitly paying for and incentivizing long-term investments. While an NPV approach has not been implemented in provider payment models to date, CMS approved a similar mechanism in Maryland's Medicare TCOC model, which sets a per capita limit on Medicare TCOC in Maryland. Under this framework, if Maryland performs well on CMS-approved population health targets that are expected to generate long-term savings, CMS discounts the actual TCOC used to calculate Maryland's performance against short-term savings targets.<sup>137,138,139</sup>

An important caveat when considering payment models for the pediatric population is that payment models for the general, relatively healthy pediatric population may need to differ from those for children with complex needs. For example, more intensive care management services may be a core component of models for children with complex needs. Connecticut's plan for the InCK model, for instance, includes a care coordination PMPM payment specifically for children with complex conditions. Additionally, as described above, there may be greater opportunity for cost savings among children with complex needs who particularly benefit from improved care management, suggesting that shared savings models might be more appropriate for this population than for children who are generally healthy. As a result, careful analysis of health status and usage patterns for children with complex needs is necessary to assess appropriateness of VBP models.

## **5. Challenges in developing VBP models serving children may differ between pediatric-only providers and providers serving both children and adults.**

As stated previously, provider organizations that serve both adult and pediatric populations and participate in VBP arrangements may have an incentive to focus on adults over children. In such cases, there may be an opportunity to adapt or add incentives for implementation of care delivery models aimed at improving comprehensiveness of pediatric clinical care, better coordinating care for children, and ensuring that children's HRSN are addressed. Interviewees suggested that strategies such as increased use of pediatric-only quality measures or additional VBP contract requirements focusing on children could help drive attention to pediatric needs under models serving a broad Medicaid population. Balancing the need for a robust set of pediatric and adult-oriented measures while also limiting the total number of VBP measures to reduce administrative burden is a key challenge for those designing VBP programs serving both adults and children. Beyond quality measures, another potential option to focus VBP programs on children is contractual incentives or requirements for providers to implement pediatric-specific quality improvement initiatives.

State-designed VBP models for a broad Medicaid population may also need to be adapted for pediatric-only participants, but in different ways. For example, pediatric-only organizations likely require a different set of quality measures, which could be customized to cover a broader range of child health needs than is possible for VBP programs that serve both children and adults. Risk-adjustment methodologies may also need to be adapted for pediatric-only populations. In VBP models, risk adjustment is used to reflect patient complexity and avoid penalizing provider organizations that serve populations with complex medical and social needs. For example, if underlying data used to build a risk-adjustment model has a high proportion of adult data, the model may be optimized to reflect characteristics impacting adults and be less applicable to majority-pediatric populations.<sup>140</sup>

An additional aspect that may be potentially challenging for pediatric-only providers is implementation of multigenerational models of care. Organizations that serve only children may have a harder time coordinating care among family members and serving families as a unit given that adults are served by other providers. While health care providers serving a broad population would need to overcome internal barriers to care coordination for families, coordinating primarily with external providers may introduce the need to build and manage new relationships, as well as extra layers of data and workflow challenges.

## 6. There is an opportunity to develop more meaningful and outcomes-based quality measures for children.

An important part of developing a VBP model that emphasizes quality and long-term outcomes is developing and implementing more meaningful quality measures that drive delivery system innovation. In a recent State Medicaid Director letter on VBP opportunities in Medicaid, CMS provided guidance that VBP models should prioritize established metrics to reduce provider burden.<sup>141</sup> However, the research conducted for the current report suggests the need to balance reduced provider burden with filling existing measurement gaps for the pediatric population. Interviewees and the literature suggest the pediatric quality metrics most commonly tied to payment in VBP programs include Healthcare Effectiveness Data and Information Set (HEDIS) process and utilization metrics such as childhood immunization status and well-child visits.<sup>142,143</sup> While existing measures are important for quality improvement and guarding against underutilization, such measures do not necessarily capture the full range of pediatric care needs. The literature and interviewees cited as a challenge the lack of standardized outcomes metrics related to topics such as behavioral health, chronic conditions, integrating care for children with complex needs, and patient- and family-centered care.<sup>144,145,146</sup> Work to develop such metrics, such as efforts by the Child and Adolescent Health Measurement Initiative (CAHMI), could focus on creating measures that better align with VBP, including quality measures that support a child and family well-being perspective.<sup>147</sup> For example, CAHMI has developed tools to measure and enable patient and family engagement and communication during visits, and there may be opportunities to leverage this data to support and incentivize holistic family care within VBP models.

Interviewees and the literature also described the need for the development and use of quality metrics that focus on social needs and longer-term outcomes to spur care transformation.<sup>148,149,150,151</sup> As an example, Nationwide Children's Hospital in Franklin County, Ohio, is working with community stakeholders to identify and track meaningful metrics and long-term goals for children (see Exhibit 7 on page 16). While not directly tied to VBP, this approach is an example of long-term goal setting that could potentially inform greater delivery system transformation for the pediatric population centered on improving long-term health and life outcomes.

A key challenge in developing HRSN or longer-term metrics is determining the extent to which it is reasonable to hold health care providers accountable for long-term and non-health outcomes. To overcome this, it may be necessary to develop bridge measures that show progress toward long-term outcomes but that are within providers' control or on a shorter timeline in alignment with existing VBP models. One example is Oregon's work toward developing Health Aspects of Kindergarten Readiness measures as part of the Coordinated Care Organization Quality Incentive Program (see Exhibit 8 on page 16). This project is an effort to identify and define health care's role in contributing to outcomes outside the health care sphere.

## 7. VBP alone is not enough to address funding and data-sharing barriers to upstream interventions.

Overall, interviewees were enthusiastic about opportunities for VBP to promote children's health and suggested that design elements such as adapting payment models and new quality measures can support upstream interventions. At the same time, they emphasized that VBP alone cannot overcome some of the entrenched barriers to multigenerational care models and addressing HRSN. Such barriers include lack of funding to support these models and data-sharing challenges, such as confidentiality. Over the past decade, state and federal policy changes, as well as VBP model incentives, have provided some new flexibilities and funding streams for health systems to address social needs.<sup>152</sup> While these changes have allowed for an expanded focus on HRSN, interviewees did not view these VBP incentives as sufficient for addressing social needs. Restrictions on the use of Medicaid dollars for non-medical purposes limit the extent to which these funds can support HRSN interventions, and the additional funding received through VBP is often not enough on its own to sustain extensive upstream interventions.<sup>153</sup> Many of the programs that interviewees



consider exemplary are supported by a complex web of time-limited funding across multiple organizations and sectors. Additionally, funding streams for care coordination and social supports often have restrictions that serve as barriers to meeting children's needs. For example, in some cases, Medicaid services such as family therapy and dyadic treatment are only billable for patients with a prior behavioral health diagnosis, a restriction that can be a barrier to preventive care for children who are exhibiting symptoms of behavioral health needs but who do not yet meet the criteria for a diagnosis. Additional and more flexible funding for upstream interventions, including those outside the health care sector, may be needed to truly transform care.

Additionally, upstream interventions require increased data sharing across different sectors and provider entities to coordinate care and align services. However, there is often a lack of infrastructure or data-sharing agreements to support sharing of data between different state and local agencies, providers, and community-based organizations (CBOs). CBOs not involved in health care also have different data collection and sharing infrastructures than health care organizations. Data challenges within health care organizations also exist, such as the difficulty of linking children and caregiver data. Finally, varying federal data-sharing regulations and concerns about protecting privacy can hinder data sharing within the health system and outside traditional service silos. For example, different sets of federal regulations, such as the Health Insurance Portability and Accountability Act and the Family Educational Rights and Privacy Act, govern health and education information.<sup>154</sup> Interviewees explained that there is often uncertainty and confusion related to what types of data can and cannot be shared among various stakeholders.

Cross-agency collaboration at the state level could help overcome many of these longstanding challenges. For example, multiple agencies could collaborate to develop programs and funding streams that better address holistic needs of children and that are more sustainable long-term. Some interviewees observed that different state agencies may each have their own programs, such as pediatric care management programs, which are duplicative or work at cross-purposes. Greater coordination across agencies could streamline these offerings in a more family- or child-centered way and could also make better use of limited public resources. In addition, the use of innovative funding mechanisms that support cross-sector initiatives could address the “wrong pockets” problem—that health care payers investing in children's long-term outcomes may not reap the savings associated with those investments because the savings accrue to other entities or sectors. “Braided” and “blended” funding mechanisms, for example, were commonly cited as a possible strategy for supporting cross-sector programs.<sup>155,156</sup> Braided funding combines funding streams from different sources (e.g., different government agencies or a combination of public and private funds) to achieve common goals but continues to track and distribute each funding stream separately. Blended funding is more flexible, combining funding streams from different sources into a single funding pool without tracking funding streams individually.<sup>157</sup> Finally, states also have an important role to play in supporting cross-sector data exchange and coordination. Increased data sharing across state agencies can support identification of cross-sector goals for payment and delivery system reform efforts, including those related to addressing social needs and advancing health equity, and can inform program design as well. States may also need to play a role in providing infrastructure, funding, and guidance for data sharing among health and social service organizations.

## EXHIBIT 5. ASONE HEALTHCARE INDEPENDENT PRACTICE ASSOCIATION'S PLAN FOR A MULTIGENERATIONAL CARE MODEL

**Background:** AsOne is a New York City–based independent practice association (IPA) with a range of organization types in its network, including providers of primary care, behavioral health care, care management, and social services. The IPA's network organizations serve both children and adults.<sup>158</sup>

**Care Model:** AsOne has developed a high–touch family–centered model, which has not yet been put into practice. The model features the following components:

- A **care team**, including a licensed clinical social worker, nurse, and care manager, would provide a **six-month intervention** including such activities as developing family and individual care plans, care management, individual care plans, referrals, and home–based family therapy.
- The model would enroll families by first identifying an **“index patient.”** The index patient would identify individuals they consider part of their family for inclusion in the intervention.
- The **target population** for index patients consists of Medicaid members between 13 and 50 years old with high utilization and at least one behavioral health condition plus comorbidities. This age range for index patients would likely bring into the intervention many families with children who could benefit from improved care for the index patient.
- Tracked **quality measures** would include all–cause hospital admissions and emergency department visits for the index patient. AsOne is also exploring how to evaluate outcomes for other members of the family.
- For enrolled families, the **proposed financial model** would enhance the rate on the Medicaid billing code for family therapy to support non–billable services as well as time and effort to implement the model.<sup>159</sup> Future iterations with increased risk could look more like a bundled payment.

**Business Case:**

- Many family–based programs begin with the child as a starting point. This introduces financing challenges, as the short–term savings opportunities for children are limited and payers may not reap benefits of adult health care savings.
- Starting with a high–cost adult and engaging the family offers the potential to leverage short–term savings from adults to offset costs of preventive services for children, benefiting both adult and child family members in the long term.

## EXHIBIT 6. ACCOUNTABLE COMMUNITIES FOR HEALTH MODELS

Accountable Communities for Health (ACH) models<sup>160</sup> may provide lessons for how VBP models can be adapted or can build infrastructure to address HRSN. ACHs are coalitions of “partners from health, social service, and other sectors working together to improve population health and clinical–community linkages within a geographic area.”<sup>161</sup> The term ACH encompasses a wide range of initiatives that seek to organize, finance, and develop infrastructure for cross–sector collaboration. ACH models differ from ACOs in that ACOs tend to focus primarily on improving clinical services, while ACHs focus on clinical–community linkages and community–wide prevention efforts, which can improve health outcomes.<sup>162</sup> While not typically VBP models themselves, ACHs are frequently implemented alongside VBP efforts to build cross–sector partnerships, coordinate cross–sector programs, and address HRSN. Key elements of ACH models include:

- **Governance and leadership structures that emphasize multi–sector representation and community engagement.** While specific structure and requirements vary by state, ACHs often include centralized infrastructure to work across sectors such as health care, public health, education, social services, criminal justice, and transportation. ACHs commonly have a “backbone organization,” such a community–based organization, health care provider, or health department, responsible for convening ACH participants and coordinating ACH activities.<sup>163</sup>
- **A defined mission and priority focus areas to develop and align cross–sector initiatives.** Although most ACHs do not focus exclusively on children, many include focus areas related to children's health, such as adverse childhood experiences, violence and trauma, asthma, and maternal health.
- **Efforts to share local data and measure regional impact.** A key aspect of many ACH initiatives is building data infrastructure to identify community needs, inform programs, measure intersectional impact, and assess short– and long–term impact.<sup>164</sup>
- **Financing to support cross–sector, community–based work.** Financing models vary by ACH. Many ACH initiatives were initially funded through the federal State Innovation Model initiative (an initiative by the Centers for Medicare & Medicaid Services in partnership with states to advance multipayer health care payment and delivery system reform models). Ongoing sustainability mechanisms may include a mix of federal, state, and local dollars, private grants, and health system funding.<sup>165,166</sup> Some ACH initiatives leverage innovative cross–sector financing mechanisms to support their initiatives.<sup>167</sup>

These elements could be implemented as part of or alongside VBP programs to address upstream HRSN that impact children's health.<sup>168,169</sup>

## EXHIBIT 7. NATIONWIDE CHILDREN’S HOSPITAL AND FRANKLIN COUNTY, OHIO, PEDIATRIC VITAL SIGNS PROJECT

Based on the National Academy of Medicine’s Vital Signs for Healthcare framework, Nationwide Children’s Hospital (NCH) is collaborating with stakeholders in Franklin County, Ohio, to identify and track pediatric quality measures that support long-term population health improvement for all children in the county. The wide range of stakeholders participating in the project include NCH, local health departments, social service agencies, the county’s school system, and community health care providers. Early efforts have focused on working collaboratively to assess children’s baseline health status, setting 10-year health goals, and identifying data sources. Stakeholders set goals for vital signs related to:<sup>170,171</sup>

- Infant mortality
- Kindergarten readiness
- High school graduation
- Teenage pregnancy
- Obesity
- Suicide
- Child mortality
- Preventive services delivery

## EXHIBIT 8. OREGON’S HEALTH ASPECTS OF KINDERGARTEN READINESS STRATEGY

Oregon’s Health Aspects of Kindergarten Readiness Technical Workgroup was convened in 2018 to (1) identify one or more measures of the health sector’s role in kindergarten readiness to recommend for adoption as Care Coordination Organization (CCO) incentive measures; and (2) identify opportunities for future measure development, data sharing, or other measurement opportunities to drive cross-sector collective action toward kindergarten readiness.<sup>172</sup>

Workgroup members and contributors included CCO representatives, pediatric care providers, early learning hub and early learning program representatives, behavioral and oral health experts, health care quality measurement experts, and family focus groups. After a year-long process, the workgroup proposed a multiyear measurement strategy focused on four measures designed to encourage health system investments that contribute to improved kindergarten readiness and cross-sector collaboration:

1. Preventive dental visits for children ages 1–5;
2. Well-child visits for children ages 3–6;
3. A CCO-level metric focused on CCO policies, payments, and practices to support social emotional health; and
4. Follow-up to developmental screening.<sup>173,174</sup>

The recommendations were endorsed by Oregon’s Metrics and Scoring Committee, and the first two metric components above were included in the CCO incentive program beginning in 2020. Development of the CCO-level metric focused on social emotional health is currently underway.<sup>175,176</sup>

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## POLICY AND PROGRAM CONSIDERATIONS FOR MASSACHUSETTS

MassHealth has identified further investment in pediatric care as an explicit goal for the next iteration of its ACO Program. The MassHealth ACO Program provides a strong foundation on which to build additional pediatric VBP incentives and programming that address children's distinct health and social needs. For example, the MassHealth ACO Program currently has five pediatric-specific or maternal health-related quality measures tied to payment.<sup>177</sup> The ACO Program's emphasis on addressing social needs is also well aligned with the goals of addressing upstream determinants of children's health. Our analysis found several opportunities for Massachusetts to lead the nation in serving children within and alongside the framework of the existing ACO Program. To that end, stakeholders may consider the following recommendations, which are discussed in greater detail below:

1. Define Massachusetts-specific pediatric care delivery priorities and accompanying quality measures, including those related to health equity.
2. Explore a payment model for pediatric populations that emphasizes quality improvement and long-term ROI.
3. Identify additional opportunities to incentivize, align, and sustain ACO approaches to integrating health and social services for pediatric populations.
4. Identify and support provider practice changes to implement a multigenerational approach to pediatric care.

### 1. Define Massachusetts-specific pediatric care delivery priorities and accompanying quality measures, including those related to health equity.

**Defining care delivery priorities:** To inform a pediatric-specific VBP Model, MassHealth and its stakeholders should define care delivery priorities. As demonstrated by existing pediatric VBP models and described by interviewees, VBP models can potentially support a wide variety of pediatric services and subpopulations. For example, VBP models may focus on a range of pediatric health goals such as improving behavioral health integration, better coordinating care for children with complex needs, and improving access to and comprehensiveness of pediatric primary care. In defining child health priorities, stakeholders may consider factors such as (1) subpopulations of interest; (2) overarching goals for each subpopulation; (3) key indicators of progress toward defined goals; and (4) opportunities for care delivery improvement or promising care models for reaching goals.<sup>178</sup>

Care delivery reform goals should drive decisions about specific elements of VBP models such as participating providers, included services, payment arrangements, and quality measures. Defining pediatric care delivery priorities may also be particularly important for prompting more attention to children's health within the broad ACO framework. Building the case for pediatric care delivery reform requires clearly defining how prioritized care models and interventions contribute to long-term goals of improved ROI and health and social outcomes. In addition to helping define elements of VBP model design, the process of defining pediatric VBP goals could potentially be used to support the cross-sector collaboration needed to address children's HRSN. A process for defining model goals should include perspectives from stakeholders outside the health system at both state agency and CBO levels, as well as families and patient-advocacy organizations. Defining cross-sector goals can be an important means of identifying opportunities to break down traditional service silos and gaining broad buy-in for more upstream-focused interventions.

**Adopting longer-term outcomes-based quality measures:** Stakeholders may also consider how to build on MassHealth's current quality measures by adopting or developing ACO measures that incentivize long-term health and social outcomes. In implementing such measures, stakeholders should consider whether proposed measures should be directly tied to payment or tracked only for quality improvement purposes. Because of member churn between ACOs

and health plans over time and because health care is only one of many influences in determining social outcomes, it may not be reasonable to hold health care providers financially accountable for some HRSN-related measures. However, tracking such measures at the ACO level, or even the regional level, could potentially serve as a catalyst for care delivery improvement and help track ACO Program impact. Stakeholders may also consider a cross-agency approach to pediatric quality measurement in which MassHealth, among other agencies, tracks progress toward shared long-term metrics. Defining joint goals, whether related to health or broader social outcomes, can promote improved coordination of programs across agencies and serve as a first step to pooling funding to support cross-sector initiatives, potentially using a braided or blended funding approach.

**Explicitly defining health equity goals and measurement strategies:** Addressing pediatric health inequities, including racial and ethnic inequities, is essential to improving both short-term child health outcomes and providing the foundation for lifelong health. MassHealth has already identified advancing health equity as an overarching goal in planning for the future of the ACO Program.<sup>179</sup> MassHealth could help advance this goal by implementing quality measurement approaches across all care delivery domains, including those identified as pediatric care delivery priorities, to track health inequities and incentivize providers to address identified inequities. As a first step in this direction, MassHealth may need to assess the extent to which there are existing barriers, such as gaps in demographic data collection and reporting, to stratifying quality measures (e.g., by race, ethnicity, or language). MassHealth could also consider holding providers accountable for reducing pediatric health inequities, such as by implementing quality improvement initiatives aimed at reducing inequities or tying measures of health inequities to payment. MassHealth has shown interest in this type of approach for the next iteration of the ACO Program. It is planning to offer incentives for ACOs and ACO-participating hospitals that address health inequities to report on stratified health and health care performance indicators in order to identify disparities and meaningfully reduce them during the demonstration period.<sup>180</sup>

## 2. Explore a payment model for pediatric populations that emphasizes quality improvement and long-term ROI.

MassHealth and its stakeholders should consider how to adapt aspects of the MassHealth ACO payment model to ensure that children's needs do not get overlooked given the existing financial incentives to focus on adult populations. MassHealth may specifically consider implementing policies within the ACO framework that (1) direct more resources toward pediatric providers in ACO models to encourage investment in interventions focused on prevention; and (2) provide increased flexibility for pediatric providers to implement innovative models. Increased investment in child health is inherently challenging given limited state and provider budgets, but such investment could provide an opportunity to improve both shorter-term pediatric health outcomes and address the root causes of many adult health conditions.

Achieving these aims could involve implementing a new payment model or funding streams for pediatric providers within the broader ACO model. While ACOs are paid on a capitated basis or through shared savings arrangements, providers within the ACO are often still paid FFS. MassHealth and ACOs could implement models for pediatric providers that offer increased flexibility and additional resources. For example, models such as fully or partly sub-capitated arrangements for pediatric primary care or additional PMPM payments to support undercompensated services could be considered. This aligns with MassHealth's initial thinking about the future of the ACO Program, since MassHealth is considering a primary care capitation model, which would pay primary care practices a lump sum each month to care for each ACO enrollee.<sup>181</sup> This kind of upfront payment could give pediatric providers the flexibility to invest in quality improvement despite low expectations for short-term cost savings. Such models may require additional funding beyond current pediatric provider payment levels to support the delivery of a comprehensive pediatric care to achieve long-term ROI (e.g., through additional preventive services, care management, or integrated behavioral health services). In the long run, MassHealth may also consider exploring more innovative approaches to payment that explicitly reward long-term investments, such as incorporating NPV calculations into VBP models to allow providers to share in projected future-year savings.

**Additional Considerations for Boston Children’s Accountable Care Organization:** Pediatric-only organizations may face different challenges in implementing VBP models than organizations serving both adults and children. As described above, specific elements of statewide VBP models such as quality measures or risk adjustment may need to be adapted to be appropriate for pediatric-only organizations. Additionally, while ACOs that serve children and adults could use cost savings from adult populations with high costs to subsidize pediatric investments, it may be more challenging for ACOs to achieve short-term savings with pediatric-only populations. In exploring options for new payment models to support children’s health needs, MassHealth should work with Boston Children’s ACO (the only pediatric-only ACO in the MassHealth ACO Program at this time) and other pediatric providers to assess whether aspects of the ACO model should be adapted for pediatric-only organizations. Such work may require additional data analysis and modeling to better understand the health status, care utilization patterns, and health care costs of pediatric populations served by such organizations and the implications for VBP model design.

### **3. Identify additional opportunities to incentivize, align, and sustain ACO approaches to integrating health and social services for pediatric populations.**

The current MassHealth ACO model incentivizes and provides resources for addressing HRSN through means such as an HRSN screening quality measure and the Flexible Services Program. However, experiences from other states suggest that cost-saving incentives may lead ACOs to prioritize addressing adult needs over those of children. MassHealth could assess how ACOs are currently leveraging existing funding streams (e.g., DSRIP) and implementing initiatives aimed at improving health outcomes for pediatric populations, and this in turn could help identify opportunities to better support and guide ACOs to address the social needs of children specifically. Depending on need, MassHealth could consider developing guidelines or requirements for ACOs to implement pediatric quality improvement projects or adopt specific strategies for addressing children’s HRSN. This approach is consistent with the vision MassHealth recently laid out for the next iteration of the ACO Program, which suggests it plans to require ACOs to target a portion of Flexible Services programming to children and youth, and to leverage Flexible Services nutritional supports at a family, rather than member, level.<sup>182</sup>

There may also be opportunities for the state to further support cross-sector collaborations and HRSN interventions with the goals of improving long-term population health. While supporting cross-sector interventions is necessary for both adult and child populations, it is important to consider children’s distinct needs and include a focus on agencies and providers serving children when designing such interventions. Additional funding to support cross-sector collaborations and HRSN interventions, such as funding streams dedicated to supporting social needs beyond the current focus of the Flexible Services Program, could be beneficial. Developing robust, integrated health and social service models that go beyond the walls of health systems may also require coordinated funding approaches across different state agencies. Therefore, Massachusetts may consider identifying specific opportunities for enhanced cross-agency collaboration, such as across the health, education, and child welfare sectors, to break down traditional service silos. Over the long term, the state could also explore developing and piloting braided or blended funding mechanisms to support innovative cross-sector care models aligned with ACO Program goals.

### **4. Identify and support provider practice changes to implement a multigenerational approach to pediatric care.**

As part of defining pediatric delivery system priorities, MassHealth and its stakeholders should identify practice changes to enable care delivery through a multigenerational care model. Multigenerational or whole-family care does not exclusively mean providing direct care to all members of a family but also includes approaches that take into consideration how the health and needs of caregivers and other family members will impact the child. In the case of pediatrics, this may entail a shift in how pediatricians consider the needs of adult caregivers and coordinate as necessary with adult providers. For example, this model of care may include screening for family needs, family-centered care



planning, and coordinating or co-locating behavioral health and social services, including home visiting. This approach may also include partnerships with behavioral health or social service agencies that provide direct treatment and supports to an entire family. This shift in care delivery could be supported through the ACO Program or other funding strategies.<sup>183,184</sup>

MassHealth and its stakeholders should explore how to incentivize these promising family-centered practices through means such as care delivery requirements and quality measures tied to ACO payments. These incentives could include measures of care coordination, screenings related to the family unit, and family experience of care. MassHealth might also consider structuring payments in a way that enables core components of multigenerational care, such as allowing pediatric providers more time to talk with family members during child health visits to understand family needs and conduct coordination and resource referral activities. VBP arrangements for pediatric providers may require new payment streams or augmented rates to support elements such as additional preventive services, screenings, education, or care coordination services for children and parents. Such investments can support long-term population health improvement and ROI and even bring about short-term health care cost savings for adult caregivers as their social risks and needs are also addressed.

While VBP can help support and incentivize family-centered care, such arrangements are likely not enough on their own to promote the widespread adoption of such models. Infrastructure investments or technical assistance supports may be needed in areas such as provider education/training, workflow redesign, and data sharing capabilities. For example, technical assistance may be needed to help providers better understand resources in their community and develop working relationships with other providers or CBOs. Multigenerational care models may also require new processes for sharing information and coordinating care among family members with social service or behavioral health providers.

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## CONCLUSION

MassHealth continues to build upon and refine its ACO Program while working to ensure that children are adequately prioritized and that their distinct health and social needs are acknowledged in reform efforts. This report identifies opportunities for Massachusetts to serve as a national leader in this field, learning from the early experiences of stakeholders in other states and testing new approaches to meet the health and social needs of children and their families. Ultimately, adapting VBP for pediatric populations requires recognition that pediatric VBP models should not be focused on short-term savings but rather on improving the quality of care to support child health and long-term population health outcomes. Developing VBP models with these elements in mind will require stakeholders to clearly define pediatric care priorities and goals, implement incentives and supports that enable pediatric delivery system improvement, commit to cross-sector collaboration to address HRSN, and begin clearing the path for a multigenerational approach to health care. While challenging, this work presents an important opportunity to help children lead healthier lives both in their early years and into adulthood.

## APPENDIX A: INTERVIEWEE LIST

The subject matter experts we interviewed include individuals with broad expertise of the pediatric VBP policy landscape and those with direct experience designing or implementing VBP models. Interviewees were also selected with the aim of including experts from a range of organization types (e.g., state government, provider organizations) and states. Interviewees were asked about topics such as overall goals of pediatric VBP models; payment model design; how models address HRSN or promote multigenerational care; and lessons learned from VBP work.

NAME	ORGANIZATION
Mary Applegate	Ohio Department of Medicaid
Pat Baker	<i>Associated with Connecticut Health Foundation when interviewed</i>
Suzanne Brundage	PM Pediatrics ( <i>associated with United Hospital Fund when interviewed</i> )
Stuart Butler	Brookings Institution
Doreen Carlin-Grande	Neighborhood Health Plan of Rhode Island
Deena Chisolm	Nationwide Children's Hospital/Partners for Kids
Jamie Clarke	Delta Dental Ins. ( <i>associated with Nemours Children's Health System when interviewed</i> )
Donna Cohen Ross	Independent consultant
Nathaniel Counts	Mental Health America
Chris DeMars	Oregon Health Authority
Tiffany Donelson	Connecticut Health Foundation
Mylynda Drake	Ohio Department of Medicaid
Alice Forrester	Clifford W. Beers Guidance Clinic
Daniella Gratale	Nemours Children's Health System
Greg Hagan	Cambridge Health Alliance
Caroline Heindrichs	AsOne Healthcare IPA
Charlie Homer	Economic Mobility Pathways
Lisa Honigfeld	Child Health and Development Institute of Connecticut, Inc.
Stephanie Jarem	Oregon Health Authority
Sara Kleinschmit	Oregon Health Authority
Michael Lee	Boston Children's Hospital
Gilbert Liu	Ohio Colleges of Medicine Government Resource Center ( <i>associated with Nationwide Children's Hospital/Partners for Kids when interviewed</i> )
Beth Marootian	Neighborhood Health Plan of Rhode Island
Nikki Olson	Oregon Health Authority
Christopher Ottiano	Neighborhood Health Plan of Rhode Island
James Perrin	MassGeneral Hospital for Children
Clare Pierce-Wrobel	U.S. Department of Health and Human Services ( <i>associated with Health Care Transformation Task Force when interviewed</i> )
Rachel Roiland	Duke-Margolis Center for Health Policy
Robert Saunders	Duke-Margolis Center for Health Policy
Chad Shearer	United Hospital Fund
Elizabeth Singletary	<i>Associated with Duke-Margolis Center for Health Policy when interviewed</i>
Laura Sisulak	Oregon Health Authority
Mathew Spaan	Minnesota Department of Human Services
Elizabeth Stuart	Oregon Health Authority



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## ENDNOTES

- 1 Institute for Healthcare Improvement. “IHI Triple Aim Initiative, Better Care for Individuals, Better Health for Populations, and Lower Per Capita Costs.” Available at: [www.ihl.org/Engage/Initiatives/TripleAim/Pages/default.aspx](http://www.ihl.org/Engage/Initiatives/TripleAim/Pages/default.aspx).
- 2 Health Care Payment Learning & Action Network. “Alternative Payment Model: APM Framework.” 2017. Available at: <http://hcp-lan.org/workproducts/apm-refresh-whitepaper-final.pdf>.
- 3 K. Gifford, E. Ellis, B.C. Edwards, A. Lashbrook, E. Hinton, et al. *Focus on Quality and Outcomes Amid Waiver Changes: Results from a 50-State Medicaid Budget Survey for State Fiscal Years 2018 and 2019*. Kaiser Family Foundation, October 25, 2018. Available at: [www.kff.org/medicaid/report/states-focus-on-quality-and-outcomes-amid-waiver-changes-results-from-a-50-state-medicare-budget-survey-for-state-fiscal-years-2018-and-2019/](http://www.kff.org/medicaid/report/states-focus-on-quality-and-outcomes-amid-waiver-changes-results-from-a-50-state-medicare-budget-survey-for-state-fiscal-years-2018-and-2019/).
- 4 Child Trend Databank. “Appendix 3. Percentage of Children Under Age 18 Covered by Public Health Insurance Plans: Selected Years, 1987–2016.” May 2018. Available at: [www.childtrends.org/wp-content/uploads/2016/05/healthcarecoverage\\_appendix3.pdf](http://www.childtrends.org/wp-content/uploads/2016/05/healthcarecoverage_appendix3.pdf).
- 5 Kaiser Family Foundation. “Health Insurance Coverage of Children 0–18.” 2019. Available at: <https://www.kff.org/other/state-indicator/children-0-18/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>.
- 6 Agency for Healthcare Research and Quality. “Why Child Health Measures?” June 2020. Available at: [www.ahrq.gov/patient-safety/quality-resources/tools/ctoolbx/why/index.html](http://www.ahrq.gov/patient-safety/quality-resources/tools/ctoolbx/why/index.html).
- 7 C.A. Wong, J.M. Perrin, and M. McClellan. “Making the Case for Value-Based Payment Reform in Children’s Health Care.” *JAMA Pediatrics*, 172, No.6 (2018): 513–514. Available at: <https://doi.org/10.1001/jamapediatrics.2018.0129>.
- 8 J.L. Raphael and A.P. Giardino. “Accounting for Kids in Accountable Care: A Policy Perspective.” *Clinical Pediatrics*, 52, No. 8, (2013): 695–698. Available at: <https://doi.org/10.1177/0009922813482181>.
- 9 P. Flanagan, P.M. Tigue, and J. Perrin. “The Value Proposition for Pediatric Care.” *JAMA Pediatrics*, 173, No. 12 (2019):1125–1126. Available at: <https://doi.org/10.1001/jamapediatrics.2019.3486>.
- 10 J.M. Perrin, E. Zimmerman, A. Hertz, T. Johnson, T. Merrill and D. Smith. “Pediatric Accountable Care Organizations: Insight From Early Adopters.” *Pediatrics*, 139, no. 2 (2017). Available at: <https://doi.org/10.1542/peds.2016-1840>.
- 11 Bailit Health. “Value-Based Payment Models for Medicaid Child Health Services.” July 13, 2016. Available at: <https://uhfnyc.org/publications/publication/value-based-payment-models-for-medicare-child-health-services/>.
- 12 P. Flanagan, P.M. Tigue, and J. Perrin, op. cit.
- 13 MassHealth, Executive Office of Health and Human Services. “MassHealth Partners with 17 Health Care Organizations to Improve Health Care Outcomes for Members.” August 17, 2017. Available at: [www.mass.gov/news/masshealth-partners-with-17-health-care-organizations-to-improve-health-care-outcomes-for](http://www.mass.gov/news/masshealth-partners-with-17-health-care-organizations-to-improve-health-care-outcomes-for).
- 14 MassHealth, Executive Office of Health and Human Services. “Massachusetts Delivery System Reform Incentive Payment Program.” Available at: [www.mass.gov/info-details/massachusetts-delivery-system-reform-incentive-payment-program#flexible-services-](http://www.mass.gov/info-details/massachusetts-delivery-system-reform-incentive-payment-program#flexible-services-)
- 15 R.W. Seifert and K.A. Love. *What to Know About ACOs: An Introduction to MassHealth Accountable Care Organizations*. Blue Cross Blue Shield of Massachusetts Foundation. July 2018. Available at: [www.bluecrossmafoundation.org/publication/what-know-about-acos-introduction-masshealth-accountable-care-organizations](http://www.bluecrossmafoundation.org/publication/what-know-about-acos-introduction-masshealth-accountable-care-organizations).
- 16 R.W. Seifert and C. Torri. *What to Know About ACOs: The Latest on MassHealth Accountable Care Organizations*. Blue Cross Blue Shield of Massachusetts Foundation. September 2019. Available at: [www.bluecrossmafoundation.org/publication/what-know-about-acos-latest-masshealth-accountable-care-organizations](http://www.bluecrossmafoundation.org/publication/what-know-about-acos-latest-masshealth-accountable-care-organizations).
- 17 Ibid.
- 18 Massachusetts Child and Adolescent Health Initiative. “Moving to the Vanguard on Pediatric Care: Child and Adolescent Health Initiative Recommendations for the MassHealth Section 1115 Waiver Renewal.” September 2020. Available at: <https://mcaap.org/2018/wp-content/uploads/Massachusetts-Child-and-Adolescent-Health-Initiative-Report-to-MassHealth-9-2020.pdf>.
- 19 While this report is more narrowly focused on VBP than is the CAHI report, findings from this environmental scan are well aligned with the workgroup report’s themes such as promoting family-centered care, addressing social needs and health equity, and increasing investment in pediatric care to address children’s distinct needs.
- 20 Health Care Payment Learning & Action Network is a group of public and private health care leaders dedicated to providing thought leadership, strategic direction, and ongoing support to accelerate the care system’s adoption of value-based payment models.

- 21 Health Care Payment Learning & Action Network. “Alternative Payment Model: APM Framework.” 2017. Available at: <https://hcp-lan.org/apm-refresh-white-paper/>.
- 22 J.S. Tieder, B. Sisk, M. Hudak, J.E. Richerson and J.M. Perrin. “General Pediatricians and Value-Based Payments.” *Pediatrics*, 142 (2018): (4) e20180502. Available at: <https://doi.org/10.1542/peds.2018-0502>.
- 23 Adapted from the LAN APM Framework. For more information on VBP model classification, see: Health Care Payment Learning & Action Network, op. cit.
- 24 Patient-centered medical homes are care delivery models that aim to enhance primary care through supporting comprehensive patient-centered, coordinated, and accessible care with a focus on quality and safety. Accreditation organizations (e.g., the National Committee for Quality Assurance, The Joint Commission) and some payers define specific care delivery capabilities and requirements based on these principles. Payers sometimes provide supplemental payments to practices that meet such standards. For more information on patient-centered medical homes, see: Agency for Healthcare Research and Quality. “Patient Centered Medical Home Resource Center.” Available at: <https://pcmh.ahrq.gov/>.
- 25 Center for Health Care Strategies. “Medicaid Accountable Care Organizations: State Update.” February 2018. Available at: [www.chcs.org/media/ACO-Fact-Sheet-02-27-2018-1.pdf](http://www.chcs.org/media/ACO-Fact-Sheet-02-27-2018-1.pdf).
- 26 Ibid.
- 27 The DE ACO program had not yet been implemented at the time of this writing; the MCO/ACO contract start date was July 1, 2021. Delaware Health and Social Services. “Medicaid/Children’s Health Insurance Program (CHIP). Accountable Care Organization Program (Medicaid ACO Program).” Available at: [www.dhss.delaware.gov/dhss/dmma/](http://www.dhss.delaware.gov/dhss/dmma/).
- 28 Maine Department of Health and Human Services. “Accountable Communities Providers and Number of Members.” Available at: [www.maine.gov/dhhs/sites/maine.gov.dhhs/files/documents/AC-ProvidersandMembers.pdf](http://www.maine.gov/dhhs/sites/maine.gov.dhhs/files/documents/AC-ProvidersandMembers.pdf).
- 29 Minnesota Department of Human Services. “Integrated Health Partnerships Contract.” 2021. Available at: [https://mn.gov/dhs/assets/ihp-sample-contract-template\\_tcm1053-327867.pdf](https://mn.gov/dhs/assets/ihp-sample-contract-template_tcm1053-327867.pdf).
- 30 Rhode Island Executive Office of Health and Human Services. “Attachment M - Accountable Entity- Attribution Guidance.” Available at: <https://eohhs.ri.gov/sites/g/files/xkgbur226/files/2021-03/Attachment%20M%20-%20PY4%20Attribution%20Guidance.pdf>.
- 31 Office of the Vermont State Auditor. “Vermont’s All-Payer Accountable Care Organization (ACO) Model.” Rpt. No. 20–02. June 26, 2020. Available at: [https://auditor.vermont.gov/sites/auditor/files/documents/ACO Model Final Report\\_0.pdf](https://auditor.vermont.gov/sites/auditor/files/documents/ACO%20Model%20Final%20Report_0.pdf).
- 32 R.W. Seifert and K.A. Love, op. cit.
- 33 Delaware Health and Social Services. “DHSS Authorizes Four Medicaid Accountable Care Organizations.” September 22, 2020. Available at: <https://delawarestatenews.net/news/dhss-authorizes-four-medicaid-acos/>.
- 34 R.W. Seifert and K.A. Love, op. cit.
- 35 Minnesota Department of Health of Human Services. “Integrated Health Partnerships (IHP).” Available at: <https://mn.gov/dhs/partners-and-providers/news-initiatives-reports-workgroups/minnesota-health-care-programs/integrated-health-partnerships/>.
- 36 N. Makni, A. Rothenburger, K. Kelleher. “Survey of Twelve Children’s Hospital-based Accountable Care Organizations.” *Journal of Hospital Administration*, 4, no.2 (2015):64–73. Available at: <https://doi.org/10.5430/jha.v4n2p64>.
- 37 J.M. Perrin, E. Zimmerman, A. Hertz, T. Johnson, T. Merrill and D. Smith, op. cit.
- 38 P. Flanagan and E. Lange. “A Statewide Pediatric Care Transformation Journey.” *Rhode Island Medical Journal*, December 2018. Available at: <http://www.rimed.org/rimedicaljournal/2018/12/2018-12-20-pcmh-kids-flanagan.pdf>.
- 39 Executive Office of Health and Human Services State of Rhode Island. “SIM PROJECT SUMMARY: PCMH Kids”. Available at: <https://eohhs.ri.gov/sites/g/files/xkgbur226/files/Portals/0/Uploads/Documents/SIM/PCMHKidsProjectSummary-Final.pdf>.
- 40 Tennessee Division of Health Care Finance and Administration. “Detailed Business Requirement Attention Deficit and Hyperactivity Disorder Episode V6.0.” December 18, 2020. Available at: [www.tn.gov/tenncare/health-care-innovation/episodes-of-care/searchable-episodes-table.html](http://www.tn.gov/tenncare/health-care-innovation/episodes-of-care/searchable-episodes-table.html).
- 41 Tennessee Division of Health Care Finance and Administration. “Detailed Business Requirement Bronchiolitis Episode, V4.0.” December 18, 2020. Available at: [www.tn.gov/tenncare/health-care-innovation/episodes-of-care/searchable-episodes-table.html](http://www.tn.gov/tenncare/health-care-innovation/episodes-of-care/searchable-episodes-table.html).
- 42 Tennessee Division of Health Care Finance and Administration. “Detailed Business Requirement Oppositional Defiant Disorder Episode V5.0.” December 18, 2020. Available at: [www.tn.gov/tenncare/health-care-innovation/episodes-of-care/searchable-episodes-table.html](http://www.tn.gov/tenncare/health-care-innovation/episodes-of-care/searchable-episodes-table.html).

- 43 Division of TennCare. “Detailed Business Requirements Otitis Media Episode, V4.0.” December 18, 2020. Available at: [www.tn.gov/tenncare/health-care-innovation/episodes-of-care/searchable-episodes-table.html](http://www.tn.gov/tenncare/health-care-innovation/episodes-of-care/searchable-episodes-table.html).
- 44 Division of TennCare. “Detailed Business Requirements Pediatric Pneumonia Episode, V4.0. December 18, 2020. Available at: [www.tn.gov/tenncare/health-care-innovation/episodes-of-care/searchable-episodes-table.html](http://www.tn.gov/tenncare/health-care-innovation/episodes-of-care/searchable-episodes-table.html).
- 45 Division of TennCare. “Detailed Business Requirements Tonsillectomy Episode, V4.0.” December 18, 2020. Available at: [www.tn.gov/tenncare/health-care-innovation/episodes-of-care/searchable-episodes-table.html](http://www.tn.gov/tenncare/health-care-innovation/episodes-of-care/searchable-episodes-table.html).
- 46 Division of TennCare. “Episodes of Care FAQs: What You Need to Know.” Available at: [www.tn.gov/content/dam/tn/tenncare/documents2/EpisodesOfCareFAQsWhatYouNeedToKnow.pdf](http://www.tn.gov/content/dam/tn/tenncare/documents2/EpisodesOfCareFAQsWhatYouNeedToKnow.pdf).
- 47 Ohio Department of Medicaid. “Episodes of Care 201 Webinar. July 2019. Available at: <https://medicaid.ohio.gov/wps/portal/gov/medicaid/resources-for-providers/special-programs-and-initiatives/payment-innovation/episode-based-payments/webinars>.
- 48 Arkansas Health Care Payment Improvement Initiative. “4th Annual Statewide Tracking Report, August 2019.” Available at: [https://achi.net/wp-content/uploads/2019/09/ACHI\\_Statewide\\_Tracking\\_Report\\_2019\\_4th\\_Annual.pdf](https://achi.net/wp-content/uploads/2019/09/ACHI_Statewide_Tracking_Report_2019_4th_Annual.pdf).
- 49 Dr. Robert Bree Collaborative. “Perinatal Bundle.” Foundation for Health Care Quality. Available at: [www.qualityhealth.org/bree/topic-areas/previous-topics/perinatal-bundle/](http://www.qualityhealth.org/bree/topic-areas/previous-topics/perinatal-bundle/).
- 50 Assembly, No. 4932. State of New Jersey 218th Legislature. Introduced January 17, 2019. “SYNOPSIS: Establishes perinatal episode of care pilot program in Medicaid.” March 19, 2019. Available at: [www.njleg.state.nj.us/2018/Bills/A5000/4932\\_I1.PDF](http://www.njleg.state.nj.us/2018/Bills/A5000/4932_I1.PDF).
- 51 Center for Medicare and Medicaid Innovation, Centers for Medicare and Medicaid Services. “Integrated Care for Kids (InCK) Model Fact Sheet.” Available at: <https://innovation.cms.gov/files/fact-sheet/inck-model-fs.pdf>.
- 52 K.J. Kelleher, J. Cooper, K. Deans, P. Carr, R.J. Brill, S. Allen, et al., op. cit.
- 53 A.T. Chien, Z. Song, M.E. Chernew, B.E. Landon, B.J. McNeil, D.G. Safran, et al. “Two-year impact of the alternative quality contract on pediatric health care quality and spending.” *Pediatrics*, 133, no. 1 (2014): 96–104. Available at: <https://doi.org/10.1542/peds.2012-3440>.
- 54 Nationwide Children’s Hospital and Partners for Kids. “Partners for Kids Progress Report.” 2020. Available at: [http://partnersforkids.org/wp-content/uploads/2020/04/W154796\\_2020-Partners-For-Kids-Annual-Report-singlepages.pdf](http://partnersforkids.org/wp-content/uploads/2020/04/W154796_2020-Partners-For-Kids-Annual-Report-singlepages.pdf).
- 55 R.C. Weier, W. Gardner, K. Conkol, K. Pajer, and K.J. Kelleher. “Partners for Kids Care Coordination: Lessons From the Field.” *Pediatrics*, 139, No. S2 (2017): S110–S116. Available at: <https://doi.org/10.1542/peds.2016-2786e>.
- 56 K.B. Boyer and D.I. Chang. *Case Study: Nationwide Children’s Hospital: An Accountable Care Organization Going Upstream to Address Population Health*. Nationwide Children’s Hospital, April 24, 2017. Available at: <https://doi.org/10.31478/201704g>.
- 57 K.J. Kelleher, J. Cooper, K. Deans, P. Carr, R.J. Brill, S. Allen, et al. “Cost Saving and Quality of Care in a Pediatric Accountable Care Organization.” *Pediatrics*, 135, no. 3 (2015): e582–e589. Available at: <https://doi.org/10.1542/peds.2014-2725>.
- 58 K.B. Boyer and D.I. Chang, op. cit.
- 59 R.C. Weier, W. Gardner, K. Conkol, K. Pajer, and K.J. Kelleher, op. cit.
- 60 S.C. Brundage. *You Get What You Pay for: Measuring Quality in Value-Based Payment for Children’s Health Care*. United Hospital Fund, June 2016. Available at: <https://uhfnyc.org/publications/publication/you-get-what-you-pay-for-measuring-quality-in-value-based-payment-for-childrens-health-care/>.
- 61 S. Gleeson, K. Kelleher, W. Gardner. “Evaluating a Pay-for-Performance Program for Medicaid Children in an Accountable Care Organization.” *JAMA Pediatrics*, 170, No. 3 (2016): 259–266. Available at: <https://jamanetwork.com/journals/jamapediatrics/fullarticle/2481807>.
- 62 K.J. Kelleher, J. Cooper, K. Deans, P. Carr, R.J. Brill, S. Allen, et al., op. cit.
- 63 Ohio Department of Health. “Comprehensive Primary Care (CPC) Program.” Available at: <https://medicaid.ohio.gov/wps/portal/gov/medicaid/resources-for-providers/special-programs-and-initiatives/payment-innovation/comprehensive-primary-care/comprehensive-primary-care>.
- 64 Ohio Department of Health. “CPC 2021 Program Year Welcome.” December 2020. Available at: <https://medicaid.ohio.gov/wps/portal/gov/medicaid/resources-for-providers/special-programs-and-initiatives/payment-innovation/comprehensive-primary-care/provider-webinars1>.

- 65 Ohio CPC has defined care delivery requirements across 10 categories: community services and supports integration, behavioral health integration, 24/7 and same-day access to care, risk stratification, population health management, team-based care delivery, care management plans, follow up after hospital discharge, tests and specialist referrals, and patient experience. For more information see: Ohio Department of Medicaid. “CPC 2021 Program Year Welcome.” December 2020. Available at: <https://medicaid.ohio.gov/wps/portal/gov/medicaid/resources-for-providers/special-programs-and-initiatives/payment-innovation/comprehensive-primary-care/provider-webinars1>.
- 66 Ohio Department of Medicaid. “CPC 2021 Program Year Welcome.” December 2020. Available at: <https://medicaid.ohio.gov/wps/portal/gov/medicaid/resources-for-providers/special-programs-and-initiatives/payment-innovation/comprehensive-primary-care/provider-webinars1>.
- 67 Ohio Department of Medicaid. “Ohio Comprehensive Primary Care for Kids Bonus Payment.” July 2019. Available at: <https://medicaid.ohio.gov/static/Providers/PaymentInnovation/CPC/KidsBonusPayment.pdf>.
- 68 S. Brundage and C. Shearer. *Reforming Payment for Children’s Long-Term Health Lessons from New York’s Children’s Value-Based Payment Effort*. United Hospital Fund, August 2019. Available at: <https://uhfnyc.org/publications/publication/reforming-payment-childrens-long-term-health/>.
- 69 S. Brundage and C. Shearer. *Achieving Payment Reform through Medicaid and Stakeholder Collaboration: A Guide for Action*. United Hospital Fund, March 2019. Available at: <https://uhfnyc.org/publications/publication/achieving-payment-reform-children/>.
- 70 S. Brundage and C. Shearer, August 2019, op. cit.
- 71 Center for Medicare and Medicaid Innovation, Centers for Medicare and Medicaid Services. “Clifford W. Beers Guidance Clinic: Integrated Care for Kids (InCK) Model Connecticut.” Available at: <https://innovation.cms.gov/media/document/ct-inck-profile>.
- 72 Lead organizations “convene community partners to integrate coordination and management of the InCK Model’s core child services for the attributed population. The Lead Organization is accountable for improving population-level care quality and outcomes and developing service integration protocols and processes.” For additional information on InCK model participants see: Center for Medicare and Medicaid Innovation, Centers for Medicare and Medicaid Services. “Integrated Care for Kids (InCK) Model.” Available at: <https://innovation.cms.gov/innovation-models/integrated-care-for-kids-model>.
- 73 Clifford W. Beers Guidance Clinic is a mental health outpatient clinic for children, youth, and families in New Haven.
- 74 CMS Innovation Center. “Oregon Health Authority: Integrated Care for Kids (InCK) Model Oregon.” Available at: <https://innovation.cms.gov/media/document/or-inck-profile>.
- 75 Oregon Pediatric Improvement Partnership, a public/private partnership and collaboration of stakeholders dedicated to building health and improving outcomes for children and youth, is based in the Department of Pediatrics at Oregon Health & Science University.
- 76 In 2012, Oregon implemented Coordinated Care Organizations to care for the majority of Medicaid enrollees. Oregon currently has 15 regionally defined CCOs. Originating from a mix of health plan and provider organizations, CCOs have some similarities to ACO models but are financed more similarly to Medicaid managed care organizations. For additional information on CCOs, see: K.H. McConnell, S. Renfro, R.C. Lindrooth, D.J. Cohen, N.T. Wallace, and M.E. Chernew. “Oregon’s Medicaid Reform and Transition To Global Budgets Were Associated With Reductions In Expenditures.” *Health Affairs*, 36, no. 3 (2017): 451–459. Available at: <https://doi.org/10.1377/hlthaff.2016.1298>.  
K.J. McConnell, A.M. Chang, D.J. Cohen, N. Wallace, M.E. Chernew, G. Kautz, et al. “Oregon’s Medicaid Transformation: An Innovative Approach To Holding A Health System Accountable For Spending Growth.” *Healthcare*, vol. 2,3 (2014): 163–167. Available at: <https://doi.org/10.1016/j.hjdsi.2013.11.002>.
- 77 Agency for Healthcare Research and Quality. “Why Child Health Measures?” oIs it on p. cit.
- 78 U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, and the National Center for Health Statistics. “Summary Health Statistics: National Health Interview Survey, 2018.” Available at: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/NHIS/SHS/2018\\_SHS\\_Table\\_P-1.pdf](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/NHIS/SHS/2018_SHS_Table_P-1.pdf).
- 79 J.L. Raphael and A.P. Giardino. “Accounting for Kids in Accountable Care: A Policy Perspective.” *Clinical Pediatrics*, 52, 8 (2013):695–698. Available at: <https://doi.org/10.1177/0009922813482181>.

- 80 For reports that include comparisons of prevalence of chronic conditions in adults and children, see:  
L.K. Shaffer, C. Shearer. *Understanding Medicaid Utilization for Children in New York State: A Chartbook*. The Medicaid Institute at United Hospital Fund, July 2016. Available at: [https://uhfnyc.org/media/filer\\_public/b4/83/b4830a5c-b72a-4bf0-a324-a0ec54902d70/medicaid-childrens-chartbook-final-20160707b.pdf](https://uhfnyc.org/media/filer_public/b4/83/b4830a5c-b72a-4bf0-a324-a0ec54902d70/medicaid-childrens-chartbook-final-20160707b.pdf).  
J. Gerteis, D. Izrael, D. Deitz, L. LeRoy, R. Ricciardi, T. Miller, J. Basu. *Multiple Chronic Conditions Chartbook: 2010 Medical Expenditure Panel Survey Data*. Agency for Healthcare Research and Quality, April 2010. Available at: [www.ahrq.gov/sites/default/files/wysiwyg/professionals/prevention-chronic-care/decision/mcc/mccchartbook.pdf](http://www.ahrq.gov/sites/default/files/wysiwyg/professionals/prevention-chronic-care/decision/mcc/mccchartbook.pdf).
- 81 For additional information on chronic conditions within the pediatric population, see:  
J.M. Perrin, S.R. Bloom, M.S. Steven, and L. Gortmaker. "The Increase of Childhood Chronic Conditions in the United States." *JAMA*, 297, No. 24 (2007): 2755–2759. Available at: <http://doi.org/10.1001/jama.297.24.2755>.  
J. Van Cleave, S.L. Gortmaker, and J.M. Perrin. "Dynamics of Obesity and Chronic Health Conditions Among Children and Youth." *JAMA*, 303, No. 7 (2010): 623–630. Available at: <http://doi.org/10.1001/jama.2010.104>.
- 82 For additional information on chronic conditions in adults, see:  
C. Buttorff, T. Ruder, and M. Bauman. *Multiple Chronic Conditions in the United States*. RAND Corporation, 2017. Available at: [www.rand.org/pubs/tools/TL221.html](http://www.rand.org/pubs/tools/TL221.html).  
J.M. Chapel, M.D. Ritchey, D. Zhang, and G. Wang. "Prevalence and Medical Costs of Chronic Diseases Among Adult Medicaid Beneficiaries." *American Journal of Preventive Medicine*, 53, no. 6S2 (2017), S143–S154. Available at: <https://doi.org/10.1016/j.amepre.2017.07.019>.
- 83 D. Lassman and M. Hartman. "US Health Spending Trends By Age and Gender: Selected Years 2002–10." *Health Affairs*, 33, No. 5 (2014): 815–822. Available at: <https://doi.org/10.1377/hlthaff.2013.1224>.
- 84 C.A. Wong, J.M. Perrin, and M. McClellan, op. cit.
- 85 J.L. Raphael and A.P. Giardino, op. cit.
- 86 P. Flanagan, P.M. Tigue, and J. Perrin, op. cit.
- 87 K.J. Kelleher, J. Cooper, K. Deans, P. Carr, R.J. Brill, S. Allen, et al., op. cit.
- 88 J.L. Raphael and A.P. Giardino, op. cit.
- 89 S. Brundage and C. Shearer, August 2019, op. cit.
- 90 J.M. Neff, V. L. Sharp, J. Muldoon, J. Graham, K. Myers. "Profile of Medical Charges for Children by Health Status Group and Severity Level in a Washington State Health Plan." *Health Services Research*, 39, No. 1 (2004): 73–90. Available at: <https://doi.org/10.1111/j.1475-6773.2004.00216.x>.
- 91 E. Cohen, J. G. Berry, X. Camacho, G. Anderson, W. Wodchis and A. Guttman. "Patterns and Costs of Health Care Use of Children With Medical Complexity." *Pediatrics*, 130, No. 6. (2012): e1463–e1470. Available at: <https://doi.org/10.1542/peds.2012-0175>.
- 92 D.Z. Kuo, M. Hall, R. Agrawal, E. Cohen, C. Feudtner, D.M. Goodman, et al. "Comparison of Health Care Spending and Utilization Among Children with Medicaid Insurance." *Pediatrics*, 136, No. 6 (2015); e1521–e1529. Available at: <https://doi.org/10.1542/peds.2015-0871>.
- 93 D.A. Bergman, D. Keller, D. Z. Kuo, C. Lerner, M. Mansour, C. Stille, et al. "Costs and Use for Children with Medical Complexity in a Care Management Program." *Pediatrics*, 145, No. 4 (2020): 1–10. Available at: <https://doi.org/10.1542/peds.2019-2401>.
- 94 G. Noritz, M. Madden, D. Roldan, T. A. Wheeler, K. Conkol, R. J. Brill, et al. "A Population Intervention to Improve Outcomes in Children with Medical Complexity." *Pediatrics*, 139, No. 1 (2017): e1–e10. Available at: <https://doi.org/10.1542/peds.2015-3076>.
- 95 M.A. Weiss, S. Marchese, L. Zhang. "Effective Care Management for Children with Special Health Care Needs in the Era of Value-Based Payment." *Clinical Pediatrics*, 58, No. 9 (2019): 949–956. Available at: <https://doi.org/10.1177/0009922819839231>.
- 96 Bailit Health, op. cit.
- 97 S. S. Bachman, M. Comeau and T. F. Long. "Statement of the Problem: Health Reform, Value-Based Purchasing, Alternative Payment Strategies, and Children and Youth with Special Health Care Needs." *Pediatrics*, 139, No. 2 (2017): S89–S98. Available at: <https://doi.org/10.1542/peds.2016-2786C>.
- 98 Bailit Health, op. cit.
- 99 Center on the Developing Child at Harvard University. "InBrief: Connecting the Brain to the Rest of the Body." Available at: <https://developingchild.harvard.edu/resources/inbrief-connecting-the-brain-to-the-rest-of-the-body/>.



- 100 Center on the Developing Child at Harvard University. “The Foundations of Lifelong Health Are Built in Early Childhood.” 2010. Available at: <https://developingchild.harvard.edu/resources/the-foundations-of-lifelong-health-are-built-in-early-childhood/>.
- 101 Division of Violence Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. “Preventing Adverse Childhood Experiences (ACEs): Leveraging the Best Available Evidence.” 2019. Available at: [www.cdc.gov/violenceprevention/pdf/preventingACES.pdf](http://www.cdc.gov/violenceprevention/pdf/preventingACES.pdf).
- 102 D.W. Brown, R.F. Anda, H. Tiemeier, V. J. Felitti, V. J. Edwards, et al. “Adverse Childhood Experiences and the Risk of Premature Mortality.” *American Journal of Preventive Medicine*, 37 No. 5 (2009);389–396. Available at: <https://doi.org/10.1016/j.amepre.2009.06.021>.
- 103 J.P. Shonkoff, A.S. Garner. “The Lifelong Effects of Early Childhood Adversity and Toxic Stress.” *Pediatrics*, 129, No. 1 (2012); e232–e243. Available at: <https://doi.org/10.1542/peds.2011-2663>.
- 104 National Scientific Council on the Developing Child. “Connecting the Brain to the Rest of the Body: Early Childhood Development and Lifelong Health Are Deeply Intertwined: Working Paper No. 15.” 2020. Available at: <https://developingchild.harvard.edu/resources/connecting-the-brain-to-the-rest-of-the-body-early-childhood-development-and-lifelong-health-are-deeply-intertwined/>.
- 105 Division of Violence Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, op. cit.
- 106 A. Chester and J. Alker. *Medicaid at 50: A Look at the Long-Term Benefits of Childhood Medicaid*. Georgetown University Health Policy Institute, Center for Children and Families, July 2015. Available at: <https://ccf.georgetown.edu/2015/07/27/medicaid-50-look-long-term-benefits-childhood-medicaid/>.
- 107 T.R. Miller. “Projected Outcomes of Nurse-Family Partnership Home Visitation During 1996–2013, USA.” *Prevention Science: The Official Journal of the Society for Prevention Research*, 16, No. 6 (2015): 765–77. Available at: <https://doi.org/10.1007/s11121-015-0572-9>.
- 108 L.A. Karoly, M.R. Kilburn, J.S. Cannon. *Early Childhood Interventions, Proven Results, Future Promise*. The Rand Corporation, 2005. Available at: <https://doi.org/10.7249/MG341>.
- 109 F. Campbell, G. Conti, J.J. Heckman, S.H. Moon, R. Pinto, et al. “Early Childhood Investments Substantially Boost Adult Health.” *Science*, 343, No. 6178 (2014); 1478–1485. Available at: <http://doi.org/10.1126/science.1248429>.
- 110 J.J. Heckman, S.H. Moon, R. Pinto, P.A. Savellyev, A. Yavitz. “The rate of return to the HighScope Perry Preschool Program.” *Journal of Public Economics*, Volume 94, Issues 1–2 (2010); 114–128. Available at: <https://doi.org/10.1016/j.jpubeco.2009.11.001>.
- 111 L.A. Karoly. *Toward Standardization of Benefit-Cost Analyses of Early Childhood Interventions*. RAND Corporation, 2011. Available at: [www.rand.org/pubs/working\\_papers/WR823.html](http://www.rand.org/pubs/working_papers/WR823.html).
- 112 J.M. Perrin, E. Zimmerman, A. Hertz, T. Johnson, T. Merrill and D. Smith, op. cit.
- 113 Bailit Health, op. cit.
- 114 C.B. Forrest and J.H. Silber, op. cit.
- 115 J.K. Roman. *Solving the Wrong Pockets Problem*. Urban Institute. September 2015. Available at: [www.urban.org/research/publication/solving-wrong-pockets-problem](http://www.urban.org/research/publication/solving-wrong-pockets-problem).
- 116 R.W. Seifert, H. Deignan, L. Honigfeld, and E.A. Gurganus. *Everyone Benefits, So All Should Pay: Pediatric Primary Care Payment Reform*. Child Health and Development Institute of Connecticut and Connecticut Health Foundation. April 2020. Available at: [www.chdi.org/index.php/publications/policy-briefs/policy-brief-everyone-benefits-so-all-should-pay-pediatric-primary-care-payment-reform](http://www.chdi.org/index.php/publications/policy-briefs/policy-brief-everyone-benefits-so-all-should-pay-pediatric-primary-care-payment-reform).
- 117 L. Hogan, C. A. Wong, D.J. Gratale, D.I. Chang, T.S. Santanam, and M. McClellan. *Addressing Social Drivers through Pediatric Value-based Care Models: Emerging Examples and Promising Approaches*. Duke-Margolis Center for Health Policy and Nemours Children’s Health System. Available at: [www.movinghealthcareupstream.org/tools-and-resources/#res-section2](http://www.movinghealthcareupstream.org/tools-and-resources/#res-section2).
- 118 National Academies of Sciences, Engineering, and Medicine. “Vibrant and Healthy Kids: Aligning Science, Practice, and Policy to Advance Health Equity.” The National Academies Press, 2019. Available at: <https://doi.org/10.17226/25466>.
- 119 R.W. Seifert and H. Deignan. *Recommendations for Practice Changes and How to Pay for Them*. Child Health and Development Institute of Connecticut and Connecticut Health Foundation. February 2019. Available at: [www.chdi.org/publications/reports/other/transforming-pediatrics-support-population-health/](http://www.chdi.org/publications/reports/other/transforming-pediatrics-support-population-health/).
- 120 C.B. Forrest and J.H. Silber, op. cit.
- 121 National Academies of Sciences, Engineering, and Medicine. “Vibrant and Healthy Kids: Aligning Science, Practice, and Policy to Advance Health Equity,” op. cit.

- 122 Bailit Health, op. cit.
- 123 National Scientific Council on the Developing Child, op. cit.
- 124 C.B. Forrest and J.H. Silber, op. cit.
- 125 P. Flanagan, P.M. Tigue, and J. Perrin, op. cit.
- 126 J. Jonas, J. Eder, K. Noonan, D. Rubin, and E. Fieldston. *Shifting the Care and Payment Paradigm for Vulnerable Children*. PolicyLab, The Children’s Hospital of Philadelphia Research Institute, 2015. Available at: <https://policylab.chop.edu/evidence-action-brief/shifting-care-and-payment-paradigm-vulnerable-children>.
- 127 L.K. Leslie, C.J. Mehus, J. D. Hawkins, T. Boat, M.A. McCabe, S. Barkin, et al. “Primary Health Care: Potential Home for Family-Focused Preventive Interventions.” *American Journal of Preventive Medicine*, Volume 51, No. 4 (2016): S106–S118. Available at: <https://doi.org/10.1016/j.amepre.2016.05.014>.
- 128 N.Z. Counts, K.B. Mistry and C.A. Wong. “The Need for New Cost Measures in Pediatric Value-Based Payment.” *Pediatrics*, 147, No. 2 (2021). Available at: <https://doi.org/10.1542/peds.2019-4037>.
- 129 L. Hogan, C.A. Wong, D.J. Gratale, D.I. Chang, T.S. Santanam, and M. McClellan, op. cit.
- 130 National Academies of Sciences, Engineering, and Medicine. “Vibrant and Healthy Kids: Aligning Science, Practice, and Policy to Advance Health Equity,” op. cit.
- 131 N.Z. Counts, R.A. Roiland, and N. Halfon. “Proposing the Ideal Alternative Payment Model for Children.” *JAMA Pediatrics*. Published online April 05, 2021. Available at: <https://jamanetwork.com/journals/jamapediatrics/article-abstract/2778223>.
- 132 For further discussion of community impacts on child and family wellness see:  
J. Bell and V. Rubin. *Why Place Matters: Building a Movement for Healthy Communities*. PolicyLink, 2007. Available at: [www.policylink.org/sites/default/files/WHYPLACEMATTERS\\_FINAL.PDF](http://www.policylink.org/sites/default/files/WHYPLACEMATTERS_FINAL.PDF).  
L. Donnelly, I. Garfinkel, J. Brooks-Gunn, B.G. Wagner, S. James, and S. McLanahan. “Geography of intergenerational mobility and child development.” *PNAS*, 114, No. 35 (2017): 9320–9325. Available at: <https://doi.org/10.1073/pnas.1700945114>.
- 133 National Academies of Sciences, Engineering, and Medicine, “Vibrant and Healthy Kids: Aligning Science, Practice, and Policy to Advance Health Equity,” op. cit.
- 134 Ibid.
- 135 Minnesota Department of Human Services Health Care Administration. “Request for Proposals for a Grantee to Provide Health Care Services to Medical Assistance and MinnesotaCare Enrollees Under Alternative Payment Arrangements Through Track 1 of the Integrated Health Partnerships (IHP) Demonstration.” Appendix E Health Equity Measures. August 24, 2020. Available at: [https://mn.gov/dhs/assets/ihp-rfp-appendix-e\\_tcm1053-445493.pdf](https://mn.gov/dhs/assets/ihp-rfp-appendix-e_tcm1053-445493.pdf).
- 136 Massachusetts Child and Adolescent Health Initiative, op. cit.
- 137 N.Z. Counts, J.D. Smith, and D.M. Crowley. “(Expected) value-based payment: From total cost of care to net present value of care.” *Healthcare*, vol. 7, no.1 (2019): 1–3. Available at: <https://doi.org/10.1016/j.hjdsi.2018.12.005>.
- 138 Centers for Medicare and Medicaid Services. “Maryland Total Cost of Care Model.” Available at: <https://innovation.cms.gov/innovation-models/md-tccm>.
- 139 Maryland Health Services Cost Review Commission. “Outcomes-Based Credits.” Available at: <https://hsrc.maryland.gov/Pages/Outcomes-Based-Credits.aspx>.
- 140 H. Kahn, R. Parke, and R. Yi. *Risk Adjustment for Pediatric Populations*. Milliman, 2013. Available at: <https://milliman-cdn.azureedge.net/-/media/milliman/importedfiles/uploadedfiles/insight/2013/risk-adjustment-for-pediatric-populations-healthcare-reform-bulletin.ashx>.
- 141 Centers for Medicare and Medicaid Services. “SMD # 20-004 RE: Value-Based Care Opportunities in Medicaid.” September 15, 2020. Available at: [www.medicare.gov/Federal-Policy-Guidance/Downloads/smd20004.pdf](http://www.medicare.gov/Federal-Policy-Guidance/Downloads/smd20004.pdf).
- 142 N. Makni, A. Rothenburger, K. Kelleher, op. cit.
- 143 For more information on HEDIS metrics see: National Committee for Quality Assurance. *HEDIS and Performance Measurement*. Available at: [www.ncqa.org/hedis/](http://www.ncqa.org/hedis/).
- 144 C. Bruner and N. Counts. “CMMI RFI Responses: Some Common Themes.” Child and Family Policy Center and Mental Health America. Available at: [www.connecticutchildrens.org/wp-content/uploads/2017/11/CMMI-RFI-RESPONSES-FINAL-pdf.pdf](http://www.connecticutchildrens.org/wp-content/uploads/2017/11/CMMI-RFI-RESPONSES-FINAL-pdf.pdf).
- 145 S.S. Bachman, M. Comeau and T.F. Long, op. cit.

- 146 Core Quality Measures Collaborative. *Consensus Core Set: Pediatrics*. September 2020. Available at: [www.qualityforum.org/CQMC\\_Core\\_Sets.aspx](http://www.qualityforum.org/CQMC_Core_Sets.aspx).
- 147 For more information on The Child and Adolescent Health Measurement Initiative, see: [www.cahmi.org](http://www.cahmi.org).
- 148 J.M. Perrin, E. Zimmerman, A. Hertz, T. Johnson, T. Merrill and D. Smith, op. cit.
- 149 Bailit Health, op. cit.
- 150 R.W. Seifert, H. Deignan, L. Honigfeld, and E.A. Gurganus, op. cit.
- 151 N.Z. Counts, K.B. Mistry and C.A. Wong, op. cit.
- 152 E. Tobin-Tyler and B. Ahmad. *Marrying Value-Based Payment and the Social Determinants of Health through Medicaid ACOs*. Milbank Memorial Fund, May 2020. Available at: [www.milbank.org/publications/marrying-value-based-payment-and-the-social-determinants-of-health-through-medicare-acos-implications-for-policy-and-practice/](http://www.milbank.org/publications/marrying-value-based-payment-and-the-social-determinants-of-health-through-medicare-acos-implications-for-policy-and-practice/).
- 153 R. Roiland, E. Singletary, R.S. Saunders, S. Dentzer, N. Counts, N. Pereira, et al. *Alternative Payment Models to Support Child Health & Development: How to Design and Implement New Models*. Duke-Margolis Center for Health Policy, Mental Health America, and UCLA Center for Healthier Children, Families, and Communities, June 2020. Available at: <https://healthpolicy.duke.edu/publications/alternative-payment-models-support-child-health-development-how-design-and-implement>.
- 154 Ibid.
- 155 M. Cabello and K. Ballard. *Braiding and blending: managing multiple funds to improve health*. Urban Institute, September 17, 2018. Available at: <https://pfs.urban.org/pay-success/pfs-perspectives/braiding-and-blending-managing-multiple-funds-improve-health>.
- 156 For additional examples and resources related to braided and blended funding, see: V. Ilakkuvan and A. De Biasi. *Examples of braiding and blending to support community health: a compendium of resources*. Urban Institute, October 3, 2018. Available at: <https://pfs.urban.org/pay-success/pfs-perspectives/examples-braiding-and-blending-support-community-health-compendium>.
- 157 S.M. Butler, T. Higashi, and M. Cabello. *Budgeting to promote social objectives—a primer on braiding and blending*. The Brookings Institution, April 6, 2020. Available at: [www.brookings.edu/research/budgeting-to-promote-social-objectives-a-primer-on-braiding-and-blending/](http://www.brookings.edu/research/budgeting-to-promote-social-objectives-a-primer-on-braiding-and-blending/).
- 158 For more information on AsOne Healthcare IPA, see: <https://myasone.org/>.
- 159 Nonbillable services would potentially include services for the index patient and/or family members not billable under existing FFS payment. Examples might include patient/family outreach and engagement, education, medication reconciliation, and some care management services.
- 160 This report uses the term “Accountable Communities for Health” to refer to a wide range of state initiatives; it is not synonymous with the CMS Accountable Health Communities model.
- 161 A. Spencer and B. Freda. *Advancing State Innovation Model Goals through Accountable Communities for Health*. Center for Health Care Strategies, October 2016. Available at: [www.chcs.org/media/SIM-ACH-Brief\\_101316\\_final.pdf](http://www.chcs.org/media/SIM-ACH-Brief_101316_final.pdf).
- 162 Ibid.
- 163 M. Mongeon, J. Levi, and J. Heinrich. “Elements of Accountable Communities for Health: A Review of the Literature.” *NAM Perspectives*, Discussion Paper, National Academy of Medicine, November 6, 2017. Available at: <https://doi.org/10.31478/201711a>.
- 164 A. Spencer and B. Freda, op. cit.
- 165 Funders Forum on Accountable Health. “Multi-Sector Collaboration in an ACH: Logic Model.” Available at: <https://accountablehealth.gwu.edu/funders-forum/logic-model>.
- 166 M. Mongeon, J. Levi, and J. Heinrich, op. cit.
- 167 R.W. Seifert, H. Deignan, E.A. Gurganus and L. Honigfeld. *Blended and Braided Funding: Sharing Costs across Multiple Sectors*. Child Health and Development Institute of Connecticut and Connecticut Health Foundation. April 2020. Available at: [www.chdi.org/publications/policy-briefs/policy-brief-blended-and-braided-funding-sharing-costs-across-multiple-sectors/](http://www.chdi.org/publications/policy-briefs/policy-brief-blended-and-braided-funding-sharing-costs-across-multiple-sectors/).
- 168 D.J. Gratale, N.Z. Counts, L. Hogan, A. Hewitt, D.I. Chang, C.A. Wong, et al. “Accountable Communities for Health for Children and Families: Approaches for Catalyzing and Accelerating Success.” *NAM Perspectives*, Discussion Paper, National Academy of Medicine, 2020. Available at: <https://doi.org/10.31478/202001b>.
- 169 D. Gratale and D. Chang. “Defining an Accountable Community for Health for Children and Families.” *NAM Perspectives*, Discussion Paper, National Academy of Medicine, 2017. Available at: <https://doi.org/10.31478/201710e>.



- 170 A.R. Kemper, K.J. Kelleher, S. Allen, C. Sander, and R.J. Brilli. “Improving the Health of All Children in Our Community: The Nationwide Children’s Hospital and Franklin County, Ohio, Pediatric Vital Signs Project.” *The Journal of Pediatrics*, Vol. 222 (2020): P227–230. Available at: <https://doi.org/10.1016/j.jpeds.2020.03.049>.
- 171 K. Kelleher. *Moving From Child Health Care to Child Health*. Pediatrics Nationwide, October 22, 2018. Available at: <https://pediatricsnationwide.org/2018/10/22/moving-from-child-health-care-to-child-health/>.
- 172 Oregon Health Authority. “Health Aspects of Kindergarten Readiness Technical Workgroup.” Available at: [www.oregon.gov/oha/HPA/ANALYTICS/Pages/KR-Health.aspx](http://www.oregon.gov/oha/HPA/ANALYTICS/Pages/KR-Health.aspx).
- 173 Health Aspects of Kindergarten Readiness Technical Workgroup. “Health Aspects of Kindergarten Readiness Technical Workgroup: Report and Recommendations.” Children’s Institute, Oregon Health Authority, Oregon Pediatric Improvement Partnership and Artemis Consulting. February 2019. Available at: [www.oregon.gov/oha/HPA/ANALYTICS/Pages/KR-Health.aspx](http://www.oregon.gov/oha/HPA/ANALYTICS/Pages/KR-Health.aspx).
- 174 Oregon Health Authority. Metrics & Scoring Committee November 20, 2020 Presentation. Available at: [www.oregon.gov/oha/HPA/ANALYTICS/MetricsScoringMeetingDocuments/4B-MS-11-2020\\_slides\\_FINAL.pdf](http://www.oregon.gov/oha/HPA/ANALYTICS/MetricsScoringMeetingDocuments/4B-MS-11-2020_slides_FINAL.pdf).
- 175 Oregon Health Authority. Metrics & Scoring Committee January 18, 2019 Presentation. Available at: [www.oregon.gov/oha/HPA/ANALYTICS/MetricsScoringMeetingDocuments/2019-01-MS-Presentation-FINAL.pdf](http://www.oregon.gov/oha/HPA/ANALYTICS/MetricsScoringMeetingDocuments/2019-01-MS-Presentation-FINAL.pdf).
- 176 E. Rivera. *Oregon Effort Incentivizes Health Metrics for Kindergarten Readiness*. Georgetown University Health Policy Institute: Center for Children and Families, February 7, 2019. Available at: <https://ccf.georgetown.edu/2019/02/07/oregon-effort-incentivizes-health-metrics-for-kindergarten-readiness/>.
- 177 R.W. Seifert and C. Torri, op. cit.
- 178 S. Brundage and C. Shearer. *Achieving Payment Reform through Medicaid and Stakeholder Collaboration: A Guide for Action*. United Hospital Fund, March 11, 2019. Available at: <https://uhfnyc.org/publications/publication/achieving-payment-reform-children/>.
- 179 MassHealth, Executive Office of Health and Human Services. “MassHealth 1115 Demonstration: Strategy for 2022 Extension.” July 2021. Available at: [www.mass.gov/doc/july-1115-demonstration-deck/download](http://www.mass.gov/doc/july-1115-demonstration-deck/download).
- 180 Ibid.
- 181 Ibid.
- 182 Ibid.
- 183 Massachusetts Child and Adolescent Health Initiative, op. cit.
- 184 National Academies of Sciences, Engineering, and Medicine, “Vibrant and Healthy Kids: Aligning Science, Practice, and Policy to Advance Health Equity,” op. cit.

