Effect of Provider Payment Reforms on Maternal and Child Health Services

Summary

Provider payment reforms have significant potential to improve the quality and efficiency of care available to mothers and their children. States are adopting policy innovations, such as medical/health homes, quality-based payment incentives, bundled payments for episodes of care, and accountable care organizations (ACOs), which promise to reduce costs while improving maternal and child health outcomes. Although the effectiveness of these reforms is not yet clear, a variety of best practices are beginning to emerge. Early experience suggests that payment reform policies designed for the general patient population or adults with chronic illnesses may need to be tailored to fully address maternal and child health (MCH) priorities, particularly to ensure appropriate care for vulnerable populations such as children with special health care needs and women with high-risk pregnancies.

Introduction

States are now grappling with a broad range of health policy decisions that will influence the quality, accessibility, and affordability of MCH services. Many of their decisions involve policies to improve access to care through expansions in public insurance coverage, implementation of state insurance exchanges, and refinements in private insurance market regulations. States are also actively pursuing a variety of reforms focused more fundamentally on enhancing the scope and cost-effectiveness of MCH services available to women and children. This policy paper explores major state policy activities related to provider payment reforms that promise to enhance service delivery for women of reproductive age and their children. Those reforms have the potential to significantly improve MCH outcomes, particularly for vulnerable populations such as children with special health care needs and women of color.

Policy innovations described in this policy paper include medical/health homes, quality-based payment incentives, bundled payments for episodes of care, and ACOs. States often choose to implement those policies in tandem with one another. Although some of the efforts are public-private partnerships, many are limited to policies affecting reimbursements to providers under Medicaid and Children's Health Insurance Program (CHIP). Public sector reforms are likely to have a broad influence on obstetric, neonatal, and pediatric care because of the major role Medicaid and CHIP play in financing those services. Most of the payment reforms do not exclusively target MCH services, but those policies can advance MCH goals if designed appropriately to meet the needs of women and children.

Medical/Health Homes

The term medical home commonly refers to an enhanced model of primary care that is patient- and family-centered and offers coordinated access to comprehensive,high-quality services.[5] Recent policy discussions regarding medical or health homes largely focus on the application of the model to reduce costs and improve outcomes for adults with chronic disease. However, the medical home concept was originally developed by the American Academy of Pediatrics (AAP) more than 30 years ago in order to improve care coordination and integration for children,

[5] Patient-Centered Primary Care Collaborative, "Joint Principles of the Patient-Centered Medical Home," February 2007, http://www.pcpcc.net/content/joint-principles-patient-centered-medical-home.

Box A: Who Are Children with Special Health Care Needs?

As defined by the federal Maternal and Child Health Bureau "children with special health care needs are those who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally."[1] This definition has been endorsed by the American Academy of Pediatrics (AAP).

Approximately 15 percent of all U.S. children meet this definition of children with special health care needs[2] This population encompasses a heterogeneous group of children with various diagnoses (e.g., allergies, asthma, genetic disorders, mental health disorders, and developmental delays), differing levels of functional impairment, and diverse demographic characteristics. (It is estimated that 43 percent of U.S. children have at least one chronic condition,[3] but not all of the children with a chronic condition meet the definition of children with special health care needs.)

A small but important subgroup of children with special health care needs (less than 1 percent of all children) are those described as medically complex or ***medically fragile***. Various definitional frameworks have been used to identify these children,[4] in general medically complex children exhibit extensive needs, high levels of service utilization, severe chronic conditions, and severe functional limitations (often requiring the children to have technology assistance).

particularly those with special health care needs.

All children can benefit from a medical home[6] but the care coordination offered through the medical home model is especially important for children who have special needs. The specific needs of children with special health care needs vary from child to child, but such children often rely on a wide range of medical services and specialized therapies to facilitate their development and maintain their physical, mental, and emotional health.[7] Families of such children may also require significant support services (e.g., counseling and respite care). Consequently, although children with special health care needs represent only about 15 percent of all children, they account for more than 40 percent of spending for child health care in the United States.[8]

Services for children with special health care needs are typically accessed through a complex network of health care, educational, and child care systems,

[1] M. McPherson et al., "A New Definition of Children with Special Health Care Needs," *Pediatrics* 102(1) (1998): 137-140.
[2] Data Resource Center for Child and Adolescent Health, "National Survey of Children with Special Health Care Needs: Data Query, Demographics and CSHCN Prevalence for All Children Ages 0-17," http://www.childhealthdata.org/browse/survey/results?q=1792&r=1.
[3] C. D. Bethell et al., "A National and State Profile of Leading Health Problems and Health Care Quality for U.S. Children: Key Insurance Disparities and across-State Variations," *Academic Pediatrics* 11(3 suppl) (2011): S22-23.
[4] E. Cohen et al., "Children with Medical Complexity: An Emerging Population for Clinical and Research Initiatives," *Pediatrics* 127(3) (2011): 529-538.
[6] W. E. Long et al., "The Value of the Medical Home for Children without Special Health Care Needs," *Pediatrics* 129(1) (2012): 87-88.
[7] W. C. Cooley and J. W. McAllister, "Building Medical Homes: Improvement Strategies in Primary Care for Children with Special Health Care Needs," *Pediatrics* 113(5 suppl) (2004): 1499-1506.
[8] K. E. Davis, "Health Care Expenses and Utilization for Children with Special Health Care Needs, 2008: Estimates for the U.S. Civilian Noninstitutionalized Population," Medical Expenditure Panel Survey Statistical Brief #343, Access Center for Financing, and Cost Trends, Agency for Healthcare Research and Quality, 2011, http://meps.ahrq.gov/data_files/publications/st343/stat343.shtml.

which are often difficult for families to navigate.[9] A recent survey indicates that about 44 percent of children with special health care needs require assistance with care coordination but do not receive this service.[10] Although case management services for children with special health care needs are often available through private and public insurance programs, the focus and intensity of the services can vary significantly.[11] Many states rely on the Title V Maternal and Child Health Block Grant from the federal government to finance care coordination for children with special health care needs, but limitations in block grant funding levels constrain the resources available to coordinate care.

The health or medical home model offers a promising approach to improving quality and efficiency of care for children with special health care needs[12] in light of the deficiencies observed in existing care coordination practices and the breadth and amount of health care, behavioral, and social services used by those children. Currently, fewer than half of all children with special health care needs receive care within a medical home.[13] Moreover, children from low-income families[14] and children with more numerous functional impairments[15] are the least likely of all children with special health care needs to receive care within a medical home. The inverse relationship between the need for and availability of a medical home for children with special health care needs is particularly troubling, because children with the most severe conditions receive the most benefit from medical home interventions.[16]

The medical home model also can decrease the prevalence of, and costs associated with, negative birth outcomes by improving care for women before, during, and after pregnancy. Research demonstrates that a woman's health before pregnancy is influential in maternal and infant health outcomes.[17] The provision of evidence-based care to women before and between pregnancies—including comprehensive preventive services (e.g., folic acid supplementation) and management of chronic conditions—increases the likelihood that women will have healthy pregnancies and give birth to healthy infants. Similarly, a medical home approach can improve the management and coordination of prenatal and perinatal care, particularly for women with high-risk pregnancies due to chronic disease, gestational diabetes, infectious diseases, mental illness, and other risk factors. Low-income women, women of color, and publicly insured women are disproportionately affected by maternal risk factors and are more likely to experience negative birth outcomes than other mothers.

Federal Efforts

New authority granted under Section 2703 of the Affordable Care Act (ACA) has sparked interest in increasing the penetration and expanding the scope of

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[9] American Academy of Pediatrics, "Policy Statement: Care Coordination in the Medical Home: Integrating Health and Related Systems of Care for Children with Special Health Care Needs," *Pediatrics* 116(5) (2005): 1238-1244.

[10] Data Resource Center for Child and Adolescent Health, "National Survey of Children with Special Health Care Needs: 2009/10 Data Query, % Receiving Care Coordination among Those Who Need This Service," http://www.childhealthdata.org/browse/survey/results?q=1857&r=1.

[11] American Academy of Pediatrics, "Policy Statement: Care Coordination."

[12] C. J. Homer et al., "A Review of the Evidence for the Medical Home for Children with Special Health Care Needs," *Pediatrics* 122 (4) (2008): e922-e937.

[13] Data Resource Center for Child and Adolescent Health, "National Survey of Children with Special Health Care Needs: 2009/10 Data Query, % CSHCN Who Receive Care within a Medical Home," http://www.childhealthdata.org/browse/survey/results?q=1618&r=1.

[14] Data Resource Center for Child and Adolescent Health, "National Survey of Children with Special Health Care Needs: 2009/10: Data Query: % CSHCN Receiving Care in Medical Home by Income," http://www.childhealthdata.org/browse/survey/results?q=1901&r=1&g=372.

[15] Data Resource Center for Child and Adolescent Health, "National Survey of Children with Special Health Care Needs: 2009/10: Data Query: % CSHCN Receiving Care in Medical Home by Number of Functional Difficulties," http://www.childhealthdata.org/browse/survey/results?q=1901&r=1&g=440.

[16] L. J. Hamilton et al., "Effects of a Medical Home Program for Children with Special Health Care Needs on Parental Perceptions of Care in an Ethnically Diverse Patient Population," *Maternal and Child Health Journal* (2012): epub ahead of print, http://www.ncbi.nlm.nih.gov/pubmed/22569944.

[17] B. W. Jack et al., "The Clinical Content of Preconception Care: An Overview and Preparation of This Supplement," *American Journal of Obstetrics and Gynecology* 199 (6 suppl B) (2008): S257-S396.

Medicaid medical homes. Section 2703 creates a new state plan amendment (SPA) option for Medicaid programs to include "health home" services. States electing to implement the option will receive a 90 percent federal medical assistance percentage (FMAP) match for health home–related services for two years. States may provide health home services to Medicaid enrollees with at least two chronic conditions, one condition and risk of developing another, or at least one serious and persistent mental health condition. Qualifying conditions include mental health and substance abuse disorders, asthma, diabetes, heart disease, and body mass index (BMI) greater than 25. Health home services may also be offered to Medicaid enrollees with other chronic conditions, subject to approval by the Centers for Medicare and Medicaid Services (CMS). Although health home services cannot be targeted to specific age groups, states may be able to tailor services for MCH populations through the qualifying conditions identified or the provider selection criteria used.

The Affordable Care Act permits states that have already been offering medical home services for Medicaid populations to submit a health home SPA and secure the enhanced federal funding match if their existing standards for medical homes align with, or are modified to conform to, the new health home requirements. Key features that distinguish health homes from typical medical home models include the following:

- dedicated care coordinators;
- integrated behavioral health services; and
- referrals to and coordination with nonmedical, community-based support services.

Under the law, states have flexibility to use a variety of different payment methods to compensate providers for health home services provided to Medicaid populations. Section 2703 specifically allows states to adjust payments based on the severity or complexity of patient needs, as well as the capabilities of the health home. Per member/per month payments or alternative payment methods are permitted.

In addition to the enhanced match available through the Medicaid health home option, the U.S. Department of Health and Human Services has created several grant programs to fund medical home implementation. For example, the Maternal and Child Health Bureau

Box B: Requirements for Health Homes under the Affordable Care Act, Section 2703

The ACA uses the term health home, rather than medical home, and defines these services as comprehensive, timely, high-quality services provided by a provider or team of health care professionals. Health homes must provide:

- comprehensive care management;
- care coordination;
- health promotion;
- comprehensive transitional care from inpatient to other settings;
- patient and family support; and
- referral to community and social support services.

Also, health homes must:

- have demonstrated capacity to use health information technology to link services and facilitate communication; and
- establish a continual quality improvement process that includes data collection and reporting on patient outcomes and experience.

(MCHB) within the Health Resources and Services Administration (HRSA) has funded the development of medical homes for children with special health care needs for over a decade and those efforts have evolved to embrace the goal of universal access to medical home services for all children.

The CMS Center for Medicare and Medicaid Innovation has also released a funding opportunity under the Strong Start for Mothers and Newborns Initiative that will test new approaches to delivering enhanced prenatal care including demonstrations of Maternity Care Homes. The initiative will focus specifically on demonstrating the effect of non-medical prenatal interventions believed to reduce rates of preterm births for participating women when provided in addition to routine obstetrical medical care.

CMS defines maternity care home services to "include clinical aspects of prenatal care, as well as services that address behavioral, psychological, and social factors that a woman may face during pregnancy. Those enhanced services could be provided by both licensed and unlicensed professionals, offering services that include but are not limited to nutritional and psychosocial counseling, health education, and case management."[18] Applicants for the funds must ensure access to and continuity of care, care coordination, and enhanced content; they also must also agree to collect pre- and post-intervention data on birth outcomes. Award amounts have not been specified, but CMS intends to fund the cost of care for 30,000 women participating in maternity care home demonstrations.

State Strategies

As of July 2, 2012, CMS has approved health home state plan amendments (SPAs) in five states (Iowa, Missouri, New York, North Carolina, and Rhode Island).[19] At least 42 additional states are considering the submission of a health home SPA according to an environmental scan conducted by the National Academy for State Health Policy (NASHP).[20]

Rhode Island is the only one of the five states with an approved SPA focusing explicitly on the provision of health homes for children with special health care needs. Rhode Island has developed a health home SPA that establishes existing Comprehensive Evaluation Diagnosis Assessment Referral Re-evaluation (CEDARR) Family Centers as health home providers for children with special health care needs. CEDARR Family Centers have supported families of children with special health care needs and provided direct therapeutic services since 2001.[21] Health home funding will allow CEDARR to expand enhanced screening for secondary conditions (e.g., obesity and depression); provide additional reimbursement to primary care providers to engage in care planning; support information technology and exchange improvements; and enhance communication between CEDARR Family Centers and Medicaid managed care plans. The state has established detailed operational protocols to define collaborative roles for home health providers and health plans.

Although state plans to develop health home options for Medicaid beneficiaries with chronic conditions under Section 2703 of the Affordable Care Act are still emerging, state Medicaid agencies have significant experience in advancing medical homes. NASHP reports that at least 41 states have adopted policies to support access to medical

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[18] Centers for Medicare and Medicaid Innovation, "Strong Start for Mothers and Newborns Second Amended Funding Opportunity Announcement," CMS-1D1-12-001, 2012, http://innovation.cms.gov/Files/x/Strong-Start-for-Mothers-and-Newborns-Funding-Opportunity-Announcement.pdf.

[19] Integrated Care Resource Center, "State-by-State Health Home State Plan Amendment Matrix: Summary Overview," Dec. 5, 2012, http://www.chcs.org/usr_doc/State_by_State_HH_SPA_matrix.pdf.

[20] National Academy of State Health Policy, "Developing and Implementing the Section 2703 Health Home State Option: State Strategies to Address Key Issues," 2012,. http://www.nashp.org/publication/developing-and-implementing-section-2703-health-home-state-option.

[21] Center for Child and Family Health, Rhode Island Department of Human Services, "CEDARR Family Centers: A Five-Year Program Review," August 2006,. http://www.dhs.ri.gov/Portals/0/Uploads/Documents/Public/Reports/CEDARR_5yr_august2006.pdf.

homes for Medicaid enrollees, although not all of those efforts include children or pregnant women.[22] Such states are advancing medical homes for Medicaid enrollees through five major policy strategies:

- the formation of partnerships to guide and inform medical home development;
- the creation of guidelines and processes for defining and recognizing medical homes;
- the development of reimbursement incentives;
- the provision of support resources to assist medical practices in building capacity related to medical home implementation; and
- the evaluation of medical home activities on costs, quality, access, and patient satisfaction.

States with mature medical home programs have demonstrated improvements in health care quality and access, as well as reductions in costs.[23]

Several states, including Colorado, Minnesota, New Jersey, North Carolina, Oklahoma, and Texas, have leveraged the medical home model to improve maternal and child health and reduce related health care costs.[24] In Colorado, for example, the state created the Colorado Medical Home Initiative (CMHI) in 2001 in response to the Title V/Maternal and Child Health national outcome measure: "All children will receive comprehensive coordinated care within a medical home." Early efforts in Colorado focused on advancing medical homes for children with special health care needs, but in 2007 the Colorado legislature mandated that the state's Medicaid and public health agencies work collaboratively to provide a medical home to all children covered by Medicaid and CHIP.[25]

Colorado has developed standards for identifying physicians, facilities, and other providers that offer a medical home approach to care and offers enhanced reimbursement to certified practices based on their self-assessed level of capacity (as measured by the Pediatric Medical Home Index) and agreement to complete a quality improvement project. The Colorado Children's Healthcare Access Program (CCHAPS), a nonprofit organization funded by foundations, assists private practices in achieving medical home certification by providing administrative and clinical support services and helping practices develop those capabilities within their own organizations.[26]

Minnesota, drawing substantially on prior work to establish medical homes for children with special health care needs, has developed a risk-adjusted, capitated payment methodology for "health care homes" that applies to the state's Medicaid program, the state's employee health program, and state-regulated private plans. Minnesota's risk-adjusted, capitated payment methodology categorizes patients into "complexity tiers" based on the number of major chronic condition groups presented. These diagnostic groups are broadly defined (e.g., cardiovascular, respiratory, and endocrine) and accommodate conditions likely to be experienced by children, as well as adults.

The assignment of patients to complexity tiers in Minnesota is done by medical home providers using a standardized assessment tool. Supplemental increases to the capitated payment rate associated with each tier are available for patients with psychosocial risks related to language barriers or a serious mental illness. (Supplemental designations of serious medical illness are made in addition to including mental disorders in the chronic disease count). Tasks and functions associated with care coordination are clearly delineated and providers must document adherence to these requirements.

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[22] National Academy of State Health Policy, "Medical Home and Patient-Centered Care," http://www.nashp.org/med-home-map.
[23] National Academy of State Health Policy, "Building Medical Homes: Lessons from Eight States with Emerging Programs," 2011, http://www.nashp.org/publication/building-medical-homes-lessons-eight-states-emerging-programs.
[24] Catalyst Center Health and Disability Working Group, "Medical Home," Boston, http://www.hdwg.org/catalyst/build-capacity/medical-home.
[25] S. Silow-Carroll and J. Bitterman,"Colorado Children's Healthcare Access Program: Helping Pediatric Practices Become Medical Homes for Low-Income Children," Commonwealth Fund, June 2010, http://www.cchap.org/storage/aboutcchap/CCHAP%20-%202010%20-%20Commonwealth%20Fund%20article.pdf.
[26] Ibid.

Minnesota's current risk-adjusted, capitated payment policy for medical homes builds on state legislation passed in 2007 that established medical home payments for providers delivering care coordination services to very complex, publicly insured patients.[27] Minnesota's Title V program began developing medical homes for children with special health care needs in 2002 with a grant from the federal Maternal and Child Health Bureau.[28] The state's early efforts focused on building infrastructure and skills in select pediatric practice sites. An analysis of Medicaid claims data revealed significant decreases in emergency department and inpatient care for children served in the pilot sites.[29] That evidence, together with positive findings related to parent satisfaction and increased use of preventive services, helped to pave the way for Minnesota's statewide implementation of a medical home model.

Relative to efforts to develop medical homes for children, states have made less progress in developing medical home models specifically for pregnant women, but a few states have begun testing a medical home approach to improve maternity care services.[30] North Carolina, for example, has implemented a Pregnancy Medical Home program that is open to all health care providers willing to provide comprehensive, patient-centered care to pregnant women enrolled in the state's Medicaid program. North Carolina's Pregnancy Medical Home program offers reimbursement to health care providers for prenatal risk screening and provides care management support to pregnant women through pregnancy care managers employed by local health departments.

Medical or health homes are a promising intervention for the care of pregnant women and children, but relatively few of the models adopted by state Medicaid agencies appear to be designed specifically for those populations and even fewer are explicitly geared toward children with special health care needs or women at risk for negative birth outcomes. Detailed evaluations of existing state medical or health home strategies are not widely available and the extent to which existing models address the unique needs of women and children, especially those with more complex conditions, remains unclear.

Quality-Based Bonuses and Penalties

"Pay-for-performance" (P4P) incentives have been widely implemented by public and private payers for over a decade. Those incentive programs typically offer providers enhanced payment or nonmonetary benefits (e.g., auto-assignment eligibility) for achieving defined measures of performance in addition to fee for service reimbursement. Less commonly, financial penalties or payment withholds are applied when providers fail to achieve performance goals or deliver substandard care. Because traditional P4P programs have focused primarily on improving quality, this discussion is limited to quality-based approaches. (Efficiency-oriented elements of P4P are incorporated into episodic payment bundling and ACOs which are discussed separately in subsequent sections of this paper.)

P4P programs reflect a wide variety of payment designs structured around different types of goals and measures for quality improvement, including:

- pay for reporting (e.g., payment for supplying clinical data to monitor quality of care);
- pay for structure (e.g., payment for implementing electronic medical records);
- pay for process (e.g., payment for ensuring full

[27] Minnesota Departments of Human Services and Health, "Health Care Home Payment Methodology: Structure and Design," 2010, http://www.health.state.mn.us/healthreform/homes/payment/PaymentMethodology_March2010.pdf.
[28] Joint Committee of the Association of Teachers of Maternal and Child Health and Association of Maternal and Child Health Programs, "Implementing the Medical Home Model in Minnesota: A Case Study," 2008, http://www.atmch.org/documents/MedicalHomeCaseGuide.pdf.
[29] M. Gerrard et al., "Collaborating to Create Medical Homes for Children with Special Health Care Needs in Minnesota: Evaluation Results 2005-2008," Wilder Research, St. Paul, MN, July 2009. http://www.health.state.mn.us/divs/fh/mcshn/medhm/docs/mdhmfnlrpt.pdf.
[30] Amy Romano, "What Is a Maternity Care Home?" Transforming Maternity Care, Childbirth Connection, http://transform.childbirthconnection.org/2012/03/what-is-a-maternity-care-home/.

immunization of children under age 2, payment achieving benchmark rate for well-child visits);
- pay for outcomes (e.g., payment for achieving a benchmark rate for low birth weight, payment for breastfeeding at discharge from hospital); and
- pay for patient satisfaction (e.g., payment for achieving benchmark satisfaction rating).

Payment mechanisms vary and include lump sum payments on a quarterly or annual basis, fee schedule adjustments, and supplemental capitated payments. Enhanced payments may be linked to achieving benchmark performance, demonstrating improvements in performance, or achieving superior performance relative to peers.

Despite their widespread use, evidence regarding the effectiveness of P4P programs is limited.[31] A systematic review of existing research found substantial variation in the effect of P4P programs, ranging from no effect to highly beneficial.[32] Beneficial effects were associated with the use of process-based performance measures, lower levels of baseline performance (i.e., more room for improvement), increased involvement of stakeholders in selection of performance measures, the use of positive incentives, incentives targeted at individual providers or provider teams, and increased communication regarding P4P goals and incentives.

P4P programs frequently include measures related to MCH services,[33] but few studies have specifically evaluated the effect of P4P incentives on the quality of pediatric or obstetric care.[34] MCH-related performance goals often focus on the provision of clinical preventive services, such as well-child visits, immunization, and timeliness of prenatal care, or compliance with clinical practice standards (e.g., preventing elective delivery before 39 weeks of gestation). Measures targeted toward children with special health care needs or women with high-risk pregnancies appear less prevalent.

Federal Efforts

Medicare demonstration projects, such as the Premier Hospital Quality Incentive Demonstration, dominate federal efforts to develop and test P4P approaches. In addition, CMS has supported state efforts to develop P4P programs in Medicaid and CHIP. In April 2006, CMS issued guidance to states on P4P programs and summarized examples of the types of incentives states had established at that time.

The federal government also has played a key role in the development of quality measures crucial to the implementation of P4P programs. Pediatric quality measures have received special emphasis in those efforts. In 2009, CMS identified a core set of measures for monitoring the quality of health care provided to children, as required by the CHIP Reauthorization Act of 2009 (CHIPRA). Although the children's health care quality measures are voluntary for state Medicaid and CHIP programs, many could be used to evaluate P4P provider incentives. To increase the number of states consistently reporting data for the core children's health measures, CMS established the CHIPRA Technical Assistance and Analytic Support Program. Refinements and additions to the initial set quality measures are being developed through the federal Agency

[31] J. Cromwell et al. (eds.), Pay for Performance in Health Care: Methods and Approaches (Research Triangle, NC: RTI Press, 2011), http://www.rti.org/pubs/bk-0002-1103-mitchell.pdf.
[32] P. Van Herck et al., "Systematic Review: Effects, Design Choices, and Context of Pay-for-Performance in Health Care," BMC Health Services Research 10 (2010): 247, http://www.biomedcentral.com/1472-6963/10/247.
[33] K. Kuhmerker and T. Hartman, "Pay-for-Performance in State Medicaid Programs: A Survey of State Medicaid Directors and Programs," The Commonwealth Fund, April 2007, http://www.commonwealthfund.org/~/media/Files/Publications/Fund%20Report/2007/Apr/Pay%20for%20Performance%20in%20State%20Medicaid%20Programs%20%20A%20Survey%20of%20State%20Medicaid%20Directors%20and%20Programs/1018_Kuhmerker_payforperformance_state_Medicaid_progs_v2.pdf.
[34] J. Profit et al., "Implementing Pay-for-Performance in the Neonatal Intensive Care Unit," Pediatrics 119 (5) (2007): 975-982.

for Healthcare Research and Quality's Pediatric Quality Measures Program.

Moreover, CMS is providing direct financial support to states seeking to improve capacity for monitoring the quality of pediatric services. In February 2010, CMS awarded 10 grants to 18 states under a five-year, $100 million effort to test strategies for enhancing the quality of children's health care through the Quality Demonstration grant program. The CMS grant program funds a variety of pediatric quality improvement strategies, but at least 10 states (Arkansas, Florida, Illinois, Maine, Massachusetts, North Carolina, Oregon, Pennsylvania, South Carolina, and West Virginia) are using their grants to further develop and apply the core set of quality measures for health care provided to children.

State Strategies

Most states have established P4P incentives in their Medicaid and CHIP programs, and typically include MCH quality improvement goals.[35] Although many states' P4P programs focus on incentive payments to managed care plans, some states have created provider-focused incentive programs.

For example, since 1997 Oklahoma has provided bonus payments to Medicaid primary care providers who meet quality goals through the Sooner Excel program. The program currently provides incentive payments tied to quality goals in seven areas: 4th DTaP vaccination, breast cancer, cervical cancer, emergency department use, Early, Periodic Screening, Diagnosis and Treatment (EPSDT), generic prescription rate, and physician inpatient admitting and visits.

Oklahoma integrated Sooner Excel into its Primary Care Medical Home initiative in 2009 but continues to offer performance-based incentives in addition to reimbursement for care coordination services. In state fiscal year 2011, the state made more than $3.5 million in SoonerExcel incentive payments to primary care providers who achieved these quality benchmarks.[36]

Bundled Payments for Episodes of Care

Bundled payment methods typically reimburse a provider or a group of providers for an aggregate set of services associated with a clearly defined and time-limited episode of care on a per-patient basis. Intended to promote quality and efficiency, episodic payment bundling is frequently used to pay for care episodes involving inpatient hospital stays for high-volume services that exhibit significant and unexplained cost variation among providers, such as knee replacements or labor and delivery.[37]

By accepting a bundled rate for an entire episode of care, health care providers assume some of the financial risk involved in the provision of care and have a monetary incentive to reduce medical complications and hospital readmissions. Depending on the scope of services included in the payment bundle, bundling can also encourage care integration across different types of providers. Bundled payment rates are typically risk-adjusted to take into account patient characteristics (e.g., the severity or complexity of their conditions) likely to affect resource use.

Because maternity and newborn care are high-volume services that demonstrate significant variation in clinical practice, cost, and outcomes, those services are a relatively common target for episodic payment bundling by private payers. These efforts generally seek to

[35] K. Kuhmerker and T. Hartman, "Pay-for-Performance in State Medicaid Programs."
[36] Oklahoma Health Care Authority, "Annual Report State Fiscal Year 2011: July 2010 through June 2011," 2011, http://www.okhca.org/research.aspx?id=84&parts=7447&parts=7447.
[37] G. Volk and J. Pettersson, "Global and Episodic Bundling: An Overview and Considerations for Medicaid," State Coverage Initiatives, 2011, http://www.rwjf.org/files/research/72272globalbundling201104.pdf.

Box C: "Unbundling" Payments for Clinical Preventive Services for Children

Traditionally, payments for services related to clinical prevention and early detection (e.g., screenings for developmental delays, psychosocial risk assessment, and patient education) have been bundled into payments for well child or prenatal office visits.

Because of concerns regarding the potential underutilization of these important preventive and early diagnostic services, however, some purchasers have decided to "unbundle" payments related to such care. The creation of additional fee-for-service payment codes for such services is often intended to both enhance payment incentives and facilitate performance monitoring.

decrease Cesarean deliveries and labor inductions that are not medically necessary, as well as reduce pregnancy complications and NICU admissions that could be avoided through improved prenatal and perinatal care.

Approaches to bundling payment for episodes of maternity care include the following:[38]

- a single blended payment rate for professional services related to labor and delivery regardless of delivery method (with the consolidated rate prorated to reflect actual or desired prevalence of Cesarean sections relative to vaginal deliveries);
- bundling the hospital and professional services payment to facilitate coordination between hospitals and health care providers;
- a single bundled rate for hospital services for both mother and newborn with outlier payments for infants born prematurely or with congenital abnormalities; and
- bundling professional services under a single payment rate to include prenatal care, ultrasound, laboratory services, labor and delivery, and postpartum care.

The frequency with which such payment approaches have been used in maternity care and their effectiveness have not been well documented.

For children who are generally healthy, the focus of pediatric services is largely on preventive and routine medical care. Some purchasers have decided to *unbundle* payments for key clinical preventive and early diagnostic services to ensure that such services are provided (See Box C.)

Bundling of payments for care episodes appears less common for the types of care uniquely relevant to children with special health care needs. The discrete episodes of care used by children with special health care needs occur at low frequencies and optimal clinical protocols for these episodes may be difficult to identify.

Despite the challenges, bundled payments for defined episodes of care have the potential to improve quality and reduce costs for children with special health care needs by encouraging providers to coordinate service delivery. For example, children with complex special health care needs may undergo a variety of procedures which require sedation or general anesthesia, such as diagnostic imaging, cardiac catheterization, and interventional radiology. For certain services (e.g. routine dental care), sedation or general anesthesia may not be medically necessary for most children but may be

[38] Catalyst for Payment Reform, "Action Brief: Maternity Care Payment," http://www.catalyzepaymentreform.org/uploads/CPR_Action_Brief_Maternity_Care.pdf.

required for some children with special health care needs. Bundled payments could encourage providers to coordinate the timing of multiple procedures requiring sedation to reduce the risks and costs associated with children receiving sedation or anesthesia on numerous occasions.

Bundled payment can also provide a mechanism to offer reimbursement for non-medical services that have not traditionally been covered by public or private insurance plans or provided in clinical settings (such as intensive patient education and coaching, environmental remediation, home visiting, and social supports). The need for comprehensive, wraparound services is particularly high among vulnerable populations, such as children with chronic health conditions and complex special health care needs, low-income women and children, and women with chronic diseases. Bundling payment offers a way to compensate providers for delivering these enhanced services while encouraging team-based care, promoting integration among provider organizations and guarding against excessive use or duplication of services.

Federal Efforts

Federal efforts in this area have focused largely on the Medicare program through the Bundled Payments for Care Improvement initiative, but federal policies have recognized the potential utility of bundled payments in Medicaid and other state programs. Although Section 2704 of the ACA established a demonstration project to evaluate the use of bundled payments in Medicaid in up to eight states, Congress has not appropriated funds for the projects. However, the more broadly defined State Innovation Models Initiative offer a federal funding source for states seeking to test bundled payments and other payment and service delivery reforms. CMS is offering two types of competitive grants to states that propose innovative approaches to improving health care and lowering costs for their residents:

- **Model Design Awards.** CMS will award a total of up to $50 million dollars to up to 25 states seeking to plan transformative approaches to health care payment and service delivery. States must agree to develop a State Health Care Innovation Plan that includes multiple payers, involves a variety of stakeholders in model design, builds on existing state waivers and federal reform initiatives, and promises to broadly improve health system performance.

- **Model Testing Awards.** CMS will award a total of up to $225 million over three to four years to up to five states that are ready to begin testing multi-payer transformation models. Two tracks have been established for assessing Model Testing proposals: *Track 1* (Ready to Go States) will be used for proposals that utilize approaches already underway at CMS program (such as bundled payments or other Innovation Center initiatives); *Track 2* (New Models) will be used to assess proposals that require a new Medicare payment and service delivery model or significant modification of existing models or Medicaid waivers.

State Strategies

An inventory of episode-based bundling policies used in state-funded insurance programs is not available, but relatively few states appear to use bundled payments for the purposes of improving MCH service delivery. It is not uncommon for Medicaid programs to offer providers the option of receiving a single consolidated payment for professional services related to maternity care (e.g., prenatal care and labor and delivery). However, the bundled rate for those services often depend on the method of delivery, and therefore do not provide financial incentives to decrease deliveries for Caesarean sections that are not medically necessary. Reform-oriented approaches to bundling payment for maternal care seem to be less common. States' use of bundled payments to improve pediatric services appear to be even more limited.

Some innovative models of reform-oriented approach-

es to bundling payments for health care in states do seem to be emerging. As an example, in 2011 the Arkansas Department of Human Services Department of Medical Services (Medicaid Agency), Arkansas Blue Cross and Blue Shield, and QualChoice of Arkansas partnered to transform the state's health care payment system. These parties launched Arkansas' Health Care Payment Improvement Initiative—a multi-payer effort that relies a retrospective episode-based payment model (REBP) to reduce costs, improve outcomes, and enhance the care experience for patients.

A variation on traditional bundled payment models, Arkansas's REBP model relies on a design that shares savings with accountable providers if average costs for defined episodes of care (as billed on a fee-for-service basis) are lower than a "commendable" target level and holds providers at risk for average costs above a maximum "acceptable" level. Providers who are identified as the Principal Accountable Provider of an episode receive quarterly performance reports that summarize cost, utilization and quality data from each payer. Arkansas is the first to use this approach statewide and with both public and private payers.

The first phase of the initiative focuses on five types of care episodes, three of which—Perinatal, Attention Deficit/Hyperactivity Disorder, and Upper Respiratory Infections—are relevant to maternal and child health. Key design features related to these episodes are summarized in Table 1 (see page 13).

Massachusetts is implementing a pilot program that uses bundled payments to improve pediatric asthma care for Medicaid enrollees as part of a broader 1115 waiver.[39] The first phase of the program will offer a bundled per member/per month payment to primary care providers for interventions for the management of pediatric asthma not traditionally covered by the state's Medicaid program (e.g., care coordination by community health workers and HEPA vacuums and other supplies to reduce environmental asthma triggers in the home). A second phase of the program in Massachusetts will provide a more inclusive bundled payment that will reimburse primary care pro viders for all ambulatory care required for the effective treatment and management of pediatric asthma, including both traditional medical services and nontraditional interventions.

Participation in the Pediatric Asthma Pilot Program in Massachusetts by health care providers will be based on a request for responses process, and priority will be given to primary care practices that serve a large number of pediatric asthma patients at high risk. Practices selected may be eligible for up to $10,000 to help fund infrastructure improvements related to financial, legal, and information technology capacity.

The pilot program draws from the experience of the Community Asthma Initiative implemented by Boston Children's Hospital. Evaluations of that initiative demonstrate that nonmedical interventions such as enhanced patient and family education, care coordination, and environmental remediation combined with high quality medical care improve patient outcomes and reduce costs. After one year in the Community Asthma Initiative, participating children experienced a 64 percent reduction in emergency department visits, a 79 percent reduction in repeat hospitalizations, and a 41 percent reduction in missed school days. The number of participating children who had asthma action plans rose by 56 percent, and their parents experienced a 46 percent reduction in missed work days[40]. Program participants had a significant reduction in hospital costs; the authors calculated a return on investment of 1.46.[41]

Accountable Care Organizations (ACOs)

The term ACO is generally used to describe formal partnerships between hospitals, physicians, post-acute

[39] http://www.mass.gov/eohhs/docs/eohhs/cms-waiver/waiver-approval-docs-as-signed-12-20-11.txt
[40] J. Bramwell, "Children's Hospital Boston Cuts Asthma ED Visits by 64 Percent," *Leadership E-Bulletin* June (2011), http://www.hfma.org/Publications/Leadership-Publication/Archives/E-Bulletins/2011/June/Children%e2%80%99s-Hospital-Boston-Cuts-Asthma-ED-Visits-by-64-Percent/.
[41] E. Woods et al., "Community Asthma Initiative: Evaluation of a Quality Improvement Program for Comprehensive Asthma Care," Pediatrics 129(3) (2012): 465-472.

Table 1: Overview of the Three Types of Episodes of Care Relevant to MCH Health in Arkansas' Health Care Payment Improvement Initiative

	Perinatal Episode	Attention Deficit Hyperactivity Disorder (ADHD) Episode	Upper Respiratory Infection (URI) Episode
Definition of Care Episode	All pregnancy-related care provided during the course of the pregnancy, including all prenatal care, care related to labor and delivery, and postpartum maternal care and encompassing all types of service (e.g., labs, imaging, specialty consultations, in-patient services). Neonatal care is excluded in the initial design.	All ADHD-related care provided during the 12-month duration of the episode, excluding initial assessment, including the full range of services provided (e.g., physician visits, psychosocial therapy) as well as all medication used to treat ADHD. If treatment continues after 12 months, a new episode is triggered.	Three types of episodes (nonspecific URIs, acute pharyngitis, and acute sinusitis) will be covered, each treated as separate episode types. Episode begins with patient's initial visit and includes all follow-up care for the next 21 days. All office visits, labs, imaging, antibiotics, antivirals and corticosteroids commonly prescribed for URIs are included.
Populations Excluded	Very high-risk pregnancies, including pregnancies where the mother presented with or developed a severe clinical condition (e.g., amniotic fluid embolism) as well as high-risk care pathways (e.g., sickle cell disease)	All patients with comorbid behavioral health conditions Limited to patients ages 6 to 17	Patients considered high-risk (e.g., infants, patients with chronic obstructive pulmonary disease) will be excluded from the initial version of the URI episode.
Risk Adjustment	Cost targets and thresholds adjusted based on level of clinical severity for each patient.	No	Cost targets and thresholds adjusted for young patients, because children are more prone to complications than adults.
Performance Monitoring	In order to participate in gain sharing opportunities, providers must meet quality targets related to prenatal screening (e.g., rate of prenatal HIV screening). Providers will also receive reports highlighting their performance on a number of additional measures related to the quality of perinatal care.	Providers will use a Provider Portal to certify that assessment and treatment are delivered according to relevant clinical guidelines.	In order to participate in gain sharing opportunities for the pharyngitis episode, providers must carry out a strep test for patients for whom an antibiotic is prescribed. Principal Accountable Providers also will receive reports highlighting their performance on a number of additional measures related to the quality of URI care (e.g., antibiotic prescription rate).

care facilities, and other types of health care providers who are responsible for improving quality and reducing costs through better coordination and management of patient care. ACOs typically incorporate a more inclusive set of services, demand more comprehensive integration across provider types, and may require providers to assume a higher level of financial risk than the health care provider payment reforms previously described.

Various ACO models have been implemented or proposed, and the financial incentives and organizational structures to facilitate improvements in ACOs vary by model. Frequently, payment incentives are tied to population-based performance targets related to total cost and overall quality of care, and ACOs are typically responsible for distributing incentive payments to participating providers.

ACOs, like other types of payment reforms, have the potential to improve MCH services, but their effectiveness in doing so will depend on the specific designs, payment arrangements, and accountability mechanisms implemented across the country. Relatively few ACOs are specifically structured to provide and integrate services for children and women of reproductive age. The author of this paper was able to identify only a handful of pediatric ACOs and no maternity ACOs.

ACOs that serve children—either exclusively or as part of a broader patient population—face distinctive challenges related to the nature of both pediatric health care needs and the pediatric delivery system. Because most children are healthy, pediatric services focus largely on preventive and routine medical care. The time horizon for generating returns on those investments is long, because the savings associated with optimal provision of comprehensive preventive services may take years to be fully realized.[42] Opportunities for near-term savings will most likely be found in improving care coordination for children with special health care needs.

There are relatively small numbers of children with severe chronic disease or other high-acuity conditions (e.g., trauma-related injuries) and for that reason, regionalized delivery systems for pediatric subspecialty and inpatient services have emerged, with capacity concentrated in populous urban markets.[43] Although regionalized services promote higher quality care for low-volume, specialized services,[44] a regionalized structure necessitates care integration strategies capable of linking providers across large geographic areas.[45]

Children with special health care needs are likely to receive primary and routine medical care in or near their home community, but many, particularly those living outside of major metropolitan areas, may need to travel to regional referral centers for more specialized ambulatory and inpatient services. Constrained capacity for pediatric subspecialty and inpatient services exacerbates the challenges of improving care integration and coordination for children with special health care needs.

Access constraints related to pediatric subspecialty services have been widely documented. A survey conducted by the Children's Hospital Association revealed that wait times for appointments with pediatric subspecialists are long—particularly in the case of specialists in developmental pediatrics (average wait time 14.5 weeks), genetics (10.8 weeks), pediatric neurology (8.9 weeks), pediatric rheumatology (7.9 weeks), pediatric-

[42] Maternal and Child Health Bureau, "Achieving Accountable Child Health Outcomes: Defining Core Elements for Accountable Care Entities Serving Children and Youth," paper presented at the Child Health Accountable Care Expert Workgroup Meeting, Marriott Wardman Park Hotel, Washington, DC, June 30, 2011.
[43] S. A. Lorch, S. Myers, and B. Carr, "The Regionalization of Pediatric Health Care," Pediatrics 126(6) (2010): 1182-1190.
[44] American Academy of Pediatrics Committee on Fetus and Newborn, "Levels of Neonatal Care," Pediatrics 130(3) (2012): 587-597.
[45] Maternal and Child Health Bureau, "Achieving Accountable Child Health Outcomes: Defining Core Elements for Accountable Care Entities Serving Children and Youth," paper presented at the Child Health Accountable Care Expert Workgroup Meeting, Marriott Wardman Park Hotel, Washington, DC, June 30, 2011.

dermatology (7.7 weeks), child and adolescent psychiatry (7.5 weeks), and pediatric endocrinology (7.3 weeks).[46]

Despite the challenges, care coordination and integration efforts for children with special health care needs offer substantial opportunities to reduce the costs of care and to improve outcomes. One study found, for example, that nearly one-quarter of total inpatient charges by pediatric hospitals can be attributed to less than 3 percent of pediatric patients who experience four or more readmissions within one year of initial discharge.[47] In comparison with pediatric patients who were not readmitted, recurrently readmitted pediatric patients were more likely to be medically complex publicly insured, African American, and dependent on assistive technology. Complex, chronic neuromuscular conditions (e.g., cerebral palsy or brain malformations associated with severe developmental disabilities) were the most prevalent conditions among patients who were frequently readmitted to pediatric hospitals; and gastrostomy tubes were the medical technology most frequently used by those patients. The authors of the study note that although some recurrent pediatric readmissions are unavoidable and may be necessary to ensure high-quality care, high-quality discharge planning, rigorous care coordination practices, and optimized outpatient care through pediatric medical homes have the potential to reduce costly readmissions in this vulnerable population.

Some observers contend that the notion of designing an ACO for a particular group of patients (defined by age, gender, condition, or service need) runs counter to the ACO's premise of an integrated delivery system capable of addressing the broad, collective, and evolving needs of an inherently heterogeneous patient population. Nevertheless, the success of ACOs will depend on how well these entities can respond to the needs of individual patients—and the needs of individual patients are substantially shaped by life stage.

Most ACOs now under development are implicitly structured to meet the needs of an elderly population with multiple chronic conditions. Modifications in such ACO models might be needed in order to achieve meaningful improvements in MCH. When Boston Children's Hospital and its affiliated physicians became the first pediatric-only provider to establish an Alternative Quality Contract with Blue Cross Blue Shield of Massachusetts, the partners identified the need for an expanded set of pediatric quality measures to ensure a complete assessment of effects. The expanded set includes pediatric quality measures related to well-child care, as well as measures focused more specifically on children with special health care needs (e.g., indicators of lung function in patients with cystic fibrosis, rates of complications after appendectomies, and incidence of blood stream infections in patients on the cardiac, neonatal and medical/surgical intensive care units).

Federal Efforts

CMS has focused largely on the development of ACOs to serve Medicare patients through three related, voluntary programs: the Medicare Shared Savings Program, the Pioneer ACO Model, and the Advance Payment Initiative. Those efforts offer providers enhanced payments for achieving quality and cost targets through a variety of payment models with varying degrees of risk and "upside" potential and provide some funds for investments necessary to develop improved care coordination capacity.

The Pediatric ACO demonstration project for Medicaid and/or CHIP authorized under Section 2706 of the Affordable Care Act of 2010 has not been funded to date. Federal grants from the State Innovation Models Initiative of the CMS Center for Medicare and Medicaid Innovation may be used to support the

[46] Children's Hospital Association, "Pediatric Specialist Physician Shortages Affect Access to Care," 2012, http://www.childrenshospitals.net/AM/Template.cfm?Template=/CM/ContentDisplay.cfm&ContentID=63293.

[47] J. G. Berry et al., "Hospital Utilization and Characteristics of Patients Experiencing Recurrent Readmissions within Children's Hospitals," *Journal of the American Medical Association* 305(7) (2011): 682-690. [48] Kaiser Commission on Medicaid and the Uninsured, "Emerging Medicaid Accountable Care Organizations: The Role of Managed Care," 2012, http://www.kff.org/medicaid/upload/8319.pdf.

development of Medicaid ACOs.

In 2012, through a series of letters to state Medicaid directors, the CMS Center for Medicaid and CHIP Services issued guidance to states on integrated care Services issued guidance to states on integrated care models, including ACOs and ACO-like entities. The first letter introduced the goals and concepts of integrated care, and the second letter described flexibility in the Medicaid statute that supports delivery system and payment reform in fee-for-service systems. Future communications to state Medicaid directors will include methodologies for shared savings arrangements, a quality and cost measures framework, achieving results through managed care contracts, and guidance on alignment with other federal initiatives.

State Strategies

A number of states are in the early stages of developing ACO initiatives to improve quality and reduce costs within the Medicaid program.[48] The models for implementing ACOs in Medicaid appear to vary across states. Medicaid programs, unlike Medicare, have strong managed care penetration, and states vary with respect to their expectations for the role those managed care organizations will play in implementing ACOs.

Payment incentives for ACOs similarly vary across states. Some states are pursuing "upside-only" payment models in ACOs, while others are expecting ACOs to be risk-bearing entities. The volatile nature of Medicaid eligibility complicates efforts to assign patients to ACOs and to implement effective care management and coordination. Although Medicaid ACO models are not typically designed to serve children or pregnant women exclusively, most Medicaid ACOs will include children and women of reproductive age.

At least one state, Ohio, is developing pediatric ACOs specifically to address care coordination for children with special health care needs. Ohio is in the process of a statewide expansion of Medicaid pediatric ACOs based on a model piloted by Nationwide Children's Hospital, located in Columbus. Partners for Kids (Nationwide Children's physician hospital organization) has received a capitated payment from three Medicaid managed care plans since 2005 to care for 290,000 at-risk children across a 37-county coverage area. Plans retain a percentage of the Medicaid premium for administrative functions (e.g., claims processing, member relations and medical management functions), and the hospital and its network of partner physicians have assumed the business risk for clinical and financial outcomes. Partners for Kids-Nationwide Children's Hospital received a $13 million grant from CMS's Health Care Innovation Awards in June 2012 to expand its geographical reach in partnership with Akron Children's Hospital.

Ohio's initiative to build on its existing program to implement pediatric ACOs statewide was catalyzed by legislation passed in 2011 that allowed the state's Medicaid agency to move disabled children, those eligible for Medicaid through Aged, Blind, and Disabled criteria, into mandatory managed care.[49] Approximately 37,000 disabled children had been served through Ohio Medicaid's fee-for-service program at a cost of approximately $302 million per year.[50] In response to concerns from parents and advocates, the 2011 legislation charged the state Medicaid agency with developing rules to recognize and establish contractual provisions for pediatric ACOs. Formal rules for recognition of ACOs capable of coordinating care for medically complex children have not yet been finalized. Ohio has convened stakeholder meetings to elicit input, and three possible models that allow for varying degrees

[48] Kaiser Commission on Medicaid and the Uninsured, "Emerging Medicaid Accountable Care Organizations: The Role of Managed Care," 2012, http://www.kff.org/medicaid/upload/8319.pdf.
[49] Ohio Revised Code, Title 51, 5111.161 Recognition of pediatric accountable care organizations (2011).
[50] Ohio Department of Job and Family Services, "Request for Applications: Ohio Medicaid Managed Care Program," January 2012, http://www.openminds.com/library/011112stratohmedicaidmcorfa.htm.

of risk-bearing have been developed.

Policy Considerations for Advancing MCH Goals

Although conclusive evidence regarding best practices is not yet available, early experience suggests that certain key design features are likely to influence the extent to which provider payment reforms will advance MCH goals. In assessing options related to medical homes, quality improvement incentives, bundled payments, and ACOs, state policymakers will need to explore how proposed models, payment method, and oversight mechanisms:

- **Address challenges unique to pediatric and obstetric care.** Specific expectations and requirements for care coordination and referral networks may be needed to address MCH priorities.[51] For example, both pediatric and obstetric care must be both patient- and family-centered. Coordination of family-centered services is likely to involve entities not typically integrated into adult primary care. Medical homes for children should include relationships with schools and childcare providers, as well as with foster care and child welfare agencies in some cases. Pediatric medical home providers should also have capacity to facilitate transitions to adult services for children aging-out of pediatric care. Similarly, pregnancy medical homes will need to address the needs of both mothers and their unborn children and should also incorporate transition planning for postnatal and neonatal care.

  Payment reforms such as ACOs that involve formal partnerships among multiple provider organizations must take into account the nature of high risk perinatal care[52] and pediatric inpatient and subspecialty care which tend to be regionalized in specialized referral centers with broad geographic reach. Careful attention to the composition of provider panels may be necessary to ensure an appropriate mix and number of pediatric and obstetric provider organizations. In many markets, competitive models between multiple ACOs may not be feasible given the limited number of pediatric hospitals and specialty services.

- **Adjust for patient risks (for example, complexity or severity).** High-risk/high need patients, such as children with special health care needs and women with complicated pregnancies, are particularly vulnerable to underservice if poorly designed provider payment reforms are implemented. Inadequate payment rates that do not cover the costs of serving high-risk/high-need patients may cause providers to skimp on necessary services or avoid serving vulnerable patients entirely. Risk adjustments or patient exclusions are relevant for all the provider payment reforms described in this paper, but attention to those issues is critical when payment innovation methods replace rather than supplement existing fee-for-service reimbursement mechanisms. Not surprisingly, bundled payment rates and ACO payment methods are usually risk-adjusted to account for differences in severity or other patient-level characteristics and some very high-risk populations may be completely excluded from these arrangements. However, the accuracy of those adjustments and exclusion methods remains uncertain and require additional evaluation.

  Although risk-adjustment models have become increasingly sophisticated over the last 25 years, the models are based largely on research that focuses on the total service costs of older adults. Factors influencing service use and cost variation among children have not been studied extensively. The

[51] R. Antonelli, J. W. McAllister, and J. Popp, "Making Care Coordination a Critical Component of the Pediatric Health System: A Multidisciplinary Framework," The Commonwealth Fund, May 2009, http://www.commonwealthfund.org/~/media/Files/Publications/Fund%20Report/2009/May/Making%20Care%20Coordination%20a%20Critical%20Component/1277_Antonelli_making_care_coordination_critical_FINAL.pdf.

[52] American Academy of Pediatrics Committee on Fetus and Newborn, "Levels of Neonatal Care," *Pediatrics* 130(3) 2012: 587-589, http://pediatrics.aappublications.org/content/114/5/1341.short.

costs of providing health care services to children with special health care needs are predictably higher than the costs of serving children without such needs. Yet variation in costs is also high *among* children with special health care needs, and that variation is not easily predicted by diagnostic categories.[53] Efforts to develop better risk models for children with special health care needs are hindered by the small number of those children and the even smaller number of children with highly complex conditions.

Additional research is needed to determine the best approaches to risk adjustment and patient exclusions to advance the implementation of provider payment reforms for MCH-related services. Payment adjustments might need to consider risk factors beyond medical complications. Detailed studies of staff time involved in providing care coordination services suggest that the presence of psychosocial, family-based stressors, e.g., e language barriers, or food insecurity) is at least as important as medical complexity in determining care coordination needs.[54,55]

- **Allow flexibility in designation of primary care providers.** Medical home services and ACOs are typically anchored by primary care providers, but policies related to patient attribution and empanelment should carefully consider the potential impact of defining primary care providers by medical specialty. Some children with special health care needs, such as those with congenital metabolic diseases, receive the majority of their care from pediatric subspecialists. In those cases, subspecialists may be the only providers with the training and expertise necessary to provide comprehensive care.[56] Similarly, pregnant women are likely to rely on obstetricians as their primary care providers and those with complicated pregnancies may depend on OB/GYNs who specialize in high-risk cases.

- **Ensure collaboration between state Title V MCH and Medicaid agencies.** Although state Medicaid agencies are typically responsible for implementing provider payment reforms, strong collaboration with state Title V MCH agencies help to ensure that these efforts address the needs of women and children, particularly those with special health care needs. Title V agencies bring extensive expertise in MCH that can inform the design of medical homes, ACOs, and other provider payment reforms.[57] In addition, most state Title V agencies also fund (or directly provide) care coordination services for children with special health care needs. The nature of and eligibility for care funded by Title V can vary significantly from state to state. Therefore, state policymakers need to carefully consider how Title V care coordination and other wraparound services are expected to interface with care coordination efforts led by providers. Strategies for ensuring effective care coordination, clarifying responsibilities, and avoiding duplication of services can be clearly delineated through interagency agreements.

- **Define standards for the clinical content of care.** The success of episode-based bundling of payments depends on setting appropriate rates for episodes of care that are clearly defined and broadly accepted in terms of clinical content. Therefore, this payment approach is best suited to services for which detailed, evidence-based clini-

[53] C. Tobias et al., "Risk Adjustment and Other Financial Protections for CSHCN in Our Evolving Health Care System," 2012, http://hdwg.org/sites/default/files/risk-adjustment.pdf.
[54] R. C. Antonelli, C. J. Stille, and D. M. Antonelli, "Care Coordination for Children and Youth with Special Health Care Needs: A Descriptive, Multisite Study of Activities, Personnel Costs, and Outcomes," *Pediatrics* 122 (1) (2008): e209-e216, http://pediatrics.aappublications.org/content/122/1/e209.abstract.
[55] R. C. Antonelli and D. M. Antonelli, "Providing a Medical Home: The Cost of Care Coordination Services in a Community-Based, General Pediatric Practice," *Pediatrics* 113 (5 suppl) (2004): 1522-1528.
[57] J. Buxbaum, "Making Connections: Medicaid, CHIP, and Title V Working Together on State Medical Home Initiatives," 2010, http://www.nashp.org/sites/default/files/Medicaid_Collaboration-FINAL.pdf.

cal protocols are available. In order to implement bundled payments for the episodes of care commonly experienced by children with special health care needs, additional work may be needed both to identify the episodes of care most likely to benefit from this type of payment reform and to develop optimal clinical protocols for these episodes.

In contrast, best practices standards for maternity care are available. However, patient advocates caution that those standards have not been uniformly adopted by obstetric providers. Variations in obstetric practice suggest that the clinical content of such care should be carefully delineated if reimbursed through bundled payments, particularly for services that have traditionally been underused, such as prenatal care and postpartum lactation support.[58] The March of Dimes and the Midwest Business Group on Health have endorsed some types of payment bundling for maternity services to encourage care coordination and the adoption of best practices, but recommend that prenatal care be reimbursed on a fee for service basis, rather than incorporated into a maternity care bundle, to ensure women receive all necessary services.[59]

- **Monitor quality and outcomes.** To ensure that provider payment reforms do not reward health care providers who fail to provide necessary services, payment designs often incorporate strong performance monitoring. Strategies for assessing the performance of health care providers should include constructs specifically relevant to MCH, such as those identified in the CHIPRA Core Set of Children's Health Care Quality Measures, the Core Set of Health Care Quality Measures for Adults, the pediatric measures of care coordination recommended by the Agency for Healthcare Research and Quality,[60] and measures endorsed by the American Academy of Pediatrics' National Center for Medical Home Implementation.[61]

  The National Quality Forum has endorsed more than 140 quality measures related to maternal and child health, but those measures do not fully address the optimal content of either obstetric or pediatric care. Additional study may be needed to develop and assess measures appropriate for monitoring MCH services, particularly those delivered to children with special health care needs and women with complicated pregnancies (e.g. measures to assess pediatric care coordination,[62] services for medically complex children,[63] or the content of prenatal care[64,65]).

- **Recognize infrastructure development needs.** Implementation of effective care coordination and care management strategies for pediatric and obstetric services is likely to require significant investments in building infrastructure, particularly for safety net providers. Improved provider capacity related to health information technology, team-based care, and coordination with nonmedical, community-based services will necessitate addi-

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[58] P. B. Angood et al., "Blueprint for Action: Steps toward a High-Quality, High-Value Maternity Care System," *Women's Health Issues* 20 (1) (2010): S18-S49, http://www.ecoguinea.org/uploads/5/4/1/5/5415260/blueprint_for_action.pdf.

[59] Midwest Business Group on Health, Quality Quest for Health of Illinois, and the Illinois Chapter of the March of Dimes "Recommendations of the Illinois Maternity Care Payment Summit," Nov. 29, 2012, http://www.qualityquest.org/uploads/pdf/payment_reform_summary.pdf.

[60] K. M. McDonald et al., "Care Coordination Accountability Measures for Primary Care Practice," Stanford University Center for Primary Care and Outcomes Research, prepared for the Agency for Healthcare Research and Quality, AHRQ Publication No. 12-0019-EF, January 2012, http://www.ahrq.gov/qual/pcpaccountability/pcpaccountability.pdf.

[61] R. A. Malouin and S. L. Merten," Measuring Medical Homes: Tools to Evaluate the Pediatric Patient-and Family-Centered Medical Home," 2010, http://www.medicalhomeinfo.org/downloads/pdfs/MonographFINAL3.29.10.pdf.

[62] R. Antonelli, J. W. McAllister, and J. Popp, "Making Care Coordination a Critical Component."

[63] A. Y. Chen, S. M. Schrager, and R. Mangione-Smith, "Quality Measures for Primary Care of Complex Pediatric Patients," *Pediatrics* 129(3) (2012): 433-445.

[64] K. Beeckman et al., "The Development and Application of a New Tool to Assess the Adequacy of the Content and Timing of Antenatal Care," *BMC Health Services Research* 11(2011): 213, http://www.biomedcentral.com/1472-6963/11/213.

[65] E. K. Main, "New Perinatal Quality Measures from the National Quality Forum, the Joint Commission, and the Leapfrog Group," *Current Opinion in Obstetrics and Gynecology* 21(6) (2009): 532-540.

tional financial and technical-assistance resources.

State policy decisions about health care provider payment reforms are likely to have a profound effect on the delivery of MCH services. Medicaid pays for more than 40 percent of all inpatient stays for obstetric, pediatric, and neonatal care.[66] In light of the Medicaid program's influential market share, state policymakers must carefully assess whether the design and structure of provider payment reforms are appropriately crafted to improve quality and minimize unintended negative consequences.

Conclusion

Health care provider payment reforms have significant potential to improve the quality and efficiency of care available to mothers and their children. State policies regarding the application of provider payment reforms to MCH-related services have not yet been documented fully or studied extensively. As approaches to medical/health home implementation, pay-for-performance incentives, bundled payments for episodes of care, and ACOs become more widespread and more carefully evaluated, best practices are likely to emerge. Policies designed for the general patient population or adults with chronic illnesses may need to be tailored to fully address MCH priorities, particularly to ensure appropriate care for vulnerable populations such as children with special health care needs and women with high-risk pregnancies.

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[66] K. Quinn, "New Directions in Medicaid Payment for Hospital Care," Health Affairs 27(1) (2008): 269-280.