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Center for
Health Care Strategies, Inc.

Care at Birth and Beyond

Analysis of High-Volume Medicaid Pediatric and Obstetric Practices

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Care at Birth and Beyond: Analysis of High-Volume Medicaid Pediatric and Obstetric Practices

EXECUTIVE SUMMARY

Understanding where Medicaid-enrolled children and pregnant women receive care—and the degree of access and quality at these sites—is critical for state Medicaid agencies to design and target quality improvement efforts for these populations. To explore these issues, the Center for Health Care Strategies (CHCS) examined the characteristics, quality of care, and quality improvement activities of Medicaid-contracted pediatric and obstetric practices in the fee-for-service (FFS) or primary care case management (PCCM) delivery systems of Arkansas, Iowa, and Pennsylvania. Though drawn from the experiences of just three states, the study findings suggest opportunities for quality improvement in Medicaid pediatric and obstetric care in states across the country.

STUDY METHODS SNAPSHOT

With analytic support from Mathematica Policy Research (MPR), CHCS worked with Medicaid agencies in Arkansas, Iowa, and Pennsylvania to analyze Medicaid enrollment and claims data for beneficiaries receiving pediatric and obstetric care in 2010,[1] focusing on:

- ***Distribution of beneficiaries, providers, and practice sites*** by practice site size (number of Medicaid providers) and type (federally qualified health center (FQHC)/rural health clinic (RHC));
- ***Characteristics of Medicaid-serving practices***, including the racial/ethnic composition of the Medicaid patient panel, and whether the practice is group-affiliated or multi-specialty; and
- ***Disparities in quality of care*** related to practice size/type/characteristic and beneficiary race/ethnicity for nine pediatric and four obstetric measures from the Initial Core Set of Children's Health Care Quality Measures,[2] as well as other quality measures that individual states opted to examine.

CHCS also surveyed a sample of high-Medicaid-volume practices in Iowa and Pennsylvania to explore their quality improvement efforts and needs.

KEY FINDINGS

Landscape of Medicaid Pediatric and Obstetric Care Delivery

- In each of the three states, solo providers represent the largest percentage of all practices providing pediatric care.
- African-Americans and Hispanics in each state are more likely than Caucasians to visit FQHCs for obstetric and pediatric services.

Medicaid Pediatric and Obstetric Quality Performance

- Pediatric access to primary care providers (PCPs) in each of the states varies by age category, with the highest scores among the youngest beneficiaries (ages 12 to 24 months). In Arkansas and Iowa, the lowest scores appear for children ages 25 months to 6 years, while in Pennsylvania, rates are lowest for children ages 11 to 19 years.
- Racial/ethnic disparities were seen in at least one measure of chronic illness care reported by each state, and in some cases, in prenatal care and birth outcomes.

- Analyses of measures by practice size/type suggest opportunities for targeted quality improvement and further research. For example:
    - Solo practices performed the best of all practice sizes/types in the majority of obstetric measures in Iowa and Pennsylvania, suggesting the need for quality improvement at larger practices.
    - Rates of child and adolescent access to PCPs at rural health clinics were below the state average in Pennsylvania; in Iowa, these sites scored the lowest of all practice sizes/types on this access to care measure. In contrast, rural health clinics in both Arkansas and Pennsylvania excelled compared to others in BMI assessment and asthma management; and
    - FQHCs performed poorly in the majority of behavioral health care measures across the three states.

Provider Access and Quality Improvement Efforts: Iowa and Pennsylvania

Among the sample of surveyed practice sites that responded:

- Most pediatric and obstetric practices are implementing strategies to improve patient access and engage patients and families in care processes, while fewer are working to advance culturally-competent care.
- More than half of pediatric practices, but fewer obstetric practices, are pursuing formal performance measurement and quality improvement activities.
- Strategies noted as most critical for practice site improvement are: implementation of health information technology (HIT) to enhance efficiency and quality; workforce availability to address behavioral health care needs and engage patients and families; and financial capacity.

IMPLICATIONS

The findings from the three-state analysis suggest certain populations, health services, and care settings that could benefit from Medicaid agency support. While drawn from a small sample of states with FFS or PCCM delivery systems, other state Medicaid agencies can consider how this analysis may be applied to an examination of their own delivery system performance. Furthermore, the study findings suggest additional research questions that may be helpful to states in assessing care access and quality among Medicaid-contracted pediatric and obstetric providers.

I. INTRODUCTION

Background

Medicaid is the nation's largest health care payer, serving more than 67 million beneficiaries[3] and spending $440 billion annually.[4] Through the expansion of Medicaid under the Affordable Care Act (ACA), the program could soon be covering up to one quarter of all Americans.[5] Understanding where Medicaid beneficiaries receive their care, and the quality of that care, is critical to supporting health care system redesign and practice site improvement in the years ahead.

The Medicaid program is the single-largest payer of reproductive-related services, financing 48 percent of all births in the U.S.[6] Additionally, one-third of children in the U.S. are covered by Medicaid/CHIP,[7] accounting for half of all Medicaid beneficiaries.[8] Given the magnitude of the program's reach, further research is needed into the factors associated with timely, quality care for pediatric and obstetric practices serving Medicaid/CHIP beneficiaries.

Individuals from racial and ethnic minority populations, who compose more than half of all non-elderly Medicaid beneficiaries,[9] experience more barriers to care, a greater incidence of chronic disease, lower quality of care, and higher mortality than the general population.[10] Nearly three-quarters of adult women in Medicaid are in their reproductive years (ages 18 to 44);[11] and non-elderly women in Medicaid are more likely to be racial/ethnic minorities, have fair to poor health, and experience low educational attainment.[12] Understanding the health care delivery challenges and support needs of practices serving these populations can inform state efforts to guide practice site interventions for improving quality and reducing racial and ethnic health care disparities.

Project Description and Methods

This study aimed to understand the characteristics, quality of care, and quality improvement activities of pediatric and obstetric practices serving Medicaid beneficiaries in states with FFS or PCCM delivery systems. Its purpose is to inform state Medicaid agencies, health plans, provider groups, and other stakeholder seeking to improve care for children and pregnant women served by Medicaid. CHCS conducted a two-phase study, as follows (see Appendix A for more detail on methodology):

Phase I

CHCS worked with Medicaid agencies in Arkansas, Iowa, and Pennsylvania to analyze Medicaid enrollment and claims data for children and pregnant women receiving pediatric and obstetric services in 2010. In partnership with MPR, the study team examined:

1. **Distribution of beneficiaries, providers, and practice sites** by practice site size (i.e., the number of Medicaid providers at the practice site) and practice type (i.e., FQHCs and RHCs) among pediatric and obstetric practices serving Medicaid beneficiaries.

2. **Characteristics of Medicaid-serving practices**, including the racial/ethnic composition of the Medicaid patient panel, and whether the practice is group-affiliated or multi-specialty; and

3. **Quality of care delivered to Medicaid pediatric and obstetric beneficiaries,** including variations in quality by practice size/type/characteristic, and beneficiary race/ethnicity, for nine pediatric and four obstetric measures from the Initial Core Set of Children's Health Care Quality Measures[13] ("the Initial Core Set"), as well as other quality measures that individual states opted to include (see Exhibit 1).

Exhibit 1: Reported Measures, by State

Measure	Abbreviation in Report (if any)	Collected By		
		AR	IA	PA
PEDIATRIC				
Preventive Care				
Well-child visits in the first 15 months of life	*Well-child visits in first 15 months*	x	x	x
Well-child visits in the third, fourth, fifth, and sixth years of life	*Well-child visits ages 3-6*	x	x	x
Child and adolescent access to primary care practitioners	*Child and adolescent access to PCPs*	x	x	x
Weight assessment and counseling for nutrition and physical activity for children/adolescents: body mass index (BMI) assessment for children/adolescents	*BMI assessment*	x	x	x
Adolescent well-care visits	*Adolescent well-care*			x
Lead screening in children	*Lead screening*			x
Chronic Illness Care				
Annual pediatric hemoglobin A1c testing for patients with diabetes	*Annual A1c testing*	x		x
Annual number of asthma patients (2 through 20 years old) with one or more asthma-related emergency room visits	*Asthma patients with ER visits*		x	x
Use of appropriate medication for people with asthma	*Appropriate medication for asthma*			x
Behavioral Health Care				
Developmental screening in the first three years of life	*Developmental screening in first three years*		x	x
Follow-up after hospitalization for mental illness	*Follow-up after hospitalization for mental illness*	x	x	
Follow-up care for children prescribed attention deficit hyperactivity disorder medication	*Follow-up for ADHD medication*	x		x
OBSTETRIC				
Prenatal Care				
Frequency of ongoing prenatal care: ≥ 81 percent of expected visits	*Frequency of ongoing prenatal care*	x	x	x
Prenatal and postpartum care: Timeliness of prenatal care	*Timeliness of prenatal care*	x	x	x
Birth Outcomes				
Percent of live births weighing less than 2,500 grams	*Live births less than 2,500 grams*	x	x	x
Cesarean rate for nulliparous singleton vertex (first live singleton birth) at 37 weeks of gestation or later	*Cesarean rate*	x	x	x
Estimated gestational age of delivered infants ≥ 37 weeks	*Age of delivered infants ≥ 37 weeks*		x	

Phase II

CHCS surveyed a sample of high-Medicaid volume pediatric and obstetric practices in Iowa and Pennsylvania (see Appendices E and F) regarding:

- Current infrastructure and activities related to access, behavioral health, cultural competency, chronic care management, HIT, and quality measurement and improvement; and
- The type of support needed to improve access and quality of care, and how that support should be provided.

II. PHASE I FINDINGS

Key Findings in Medicaid Pediatric and Obstetric Quality Performance

Following are key findings related to the quality of care provided to pediatric and obstetric Medicaid beneficiaries in each state, stratified by beneficiary race/ethnicity and practice characteristics (see Appendices C and D for additional detail). For a complete description of the distribution of practices, providers, and beneficiaries by practice size/type and beneficiary race/ethnicity, see Appendix B.

1) Across all three states, rates of pediatric access to PCPs are higher than rates for well-child visits. Caucasians have higher scores than children and adolescents from other races/ethnicities on the majority of pediatric preventive care measures.

In Arkansas and Pennsylvania, rates for well-child visits in first 15 months are worse than the national average (Exhibit 2), while rates in Iowa for this age group are above. Rates for well-child visits during ages 3-6 are more consistent across the states, though lower than the national average.[i]

Comparatively, rates of access to PCPs for all ages are higher than those of well-child visits in the first 15 months (six visits) and for ages 3-6. Notably, rates of access to PCPs for ages 12-19 (72) in Pennsylvania do not correspond to rates of adolescent well-care visits (50), suggesting that older children in the state may be "getting in the door" to see a practitioner, but not necessarily receiving recommended preventive services. National rates for access to PCPs among children ages 12-19 years (88) and adolescent well-care visits (48) are similarly disparate.

Exhibit 2: Pediatric Preventive Care Scores

Measure	AR	IA	PA	National Average[ii]
Well-child visits in first 15 months: Zero visits*	5.9	0.01	3.1	2.2
Well-child visits in first 15 months: Six visits	42.9	70.9	27.4	60.2
Well-child visits ages 3-6	64.7	68.1	69.7	71.9
Child and adolescent access to PCPs (all ages)	88.5	94.1	78.7	N/A
Child and adolescent access to PCPs (12 to 24 mos)	93.8	97.3	96.2	96.1
Child and adolescent access to PCPs (25 mos to 6 yrs)	86.1	93.2	85.6	88.3
Child and adolescent access to PCPs (7 to 11 yrs)	91.1	93.7	72.9	90.2
Child and adolescent access to PCPs (12 to 19 yrs)	87.5	94.3	72.4	88.1
Adolescent well-care visits	N/R	N/R	50.1	48.1

*A lower score is considered better performance for this measure.

Racial/ethnic disparities in pediatric care are also apparent. In all three states, Caucasians score better than African-Americans on all measures of pediatric preventive care, except well child visits ages 3-6 in Arkansas and Iowa and lead screening in Pennsylvania.[iii] With the exception of select well-child visit measures across the states (all in Arkansas, ages 3-6 in Iowa, and adolescent well-care visits in Pennsylvania), rates for Hispanic beneficiaries are the same or worse than those of Caucasians in all pediatric preventive care measures.

Questions for Further Research

- To what extent are high scores in access to PCPs among young children and adolescents, but lower scores in well-child visits, a function of delayed well-child care (e.g., parents bringing children in for annual visit after 12 months) or lost opportunities at the provider visit? What can be done to mitigate these factors?
- Why are rates of access to primary care and preventive care lower for older children (adolescents and teenagers) than for younger children?

[i] Low performance in well-child visits in first 15 months may be partly attributable to the absence of chart review to accompany administrative claims data, the hybrid approach typically performed for this measure.
[ii] National averages are based on 2010 Medicaid HMO data, as reported by National Committee for Quality Assurance (NCQA).
[iii] Differences across racial/ethnic groups were evident for zero well-child visits and BMI assessment, but less reliable given small sample sizes.

2) Scores for pediatric behavioral health performance are generally low; however, certain care settings and populations perform better than others.

Scores for pediatric behavioral health service utilization in Arkansas and Pennsylvania are lower than the national average (Exhibit 3), while results in Iowa are mixed.

Exhibit 3: Behavioral Health Scores by State, Compared to the National Average

Measure	AR	IA	PA	National Average[iv]
Follow-up for ADHD medication: Initiation	15.9	N/R	27.3	38.1
Follow-up for ADHD medication: Continuation and maintenance	8.3	N/R	34.4	43.9
7-day follow-up after hospitalization for mental illness	5.7	71.9	N/R	44.6[v]
30-day follow-up after hospitalization for mental illness	15.4	84.3	N/R	63.8
Developmental screening in first three years	N/R	4.4	31.6	43.9

Stratification of the above scores reveals some deeper findings. For example, in Pennsylvania, practices with fewer than 10 providers perform better than larger practices and FQHCs on all three reported behavioral health measures. In both Arkansas and Iowa, in contrast, solo practices have the lowest scores of all non-FQHCs/RHCs in both 7- and 30-day follow-up after hospitalization for mental illness.

Scores for follow-up after hospitalization for mental illness in Iowa are much higher than the national averages; however, the state's score for developmental screening in the first three years is well below the national average.[vi]

Notably, Hispanic beneficiaries have the lowest scores in developmental screening in first three years in both Iowa and Pennsylvania, the only two states that collected the measure.

3) There is a meaningful need for improvement in pediatric chronic illness care, particularly for racial/ethnic minority groups.

Caucasians in each state generally receive either better or similar care than non-Caucasians in chronic illness care. Notable areas for improvement are in the number of asthma patients with ER visits among African-Americans in Iowa, and African-Americans and Hispanics in Pennsylvania (Hispanic beneficiaries in Pennsylvania also had particularly low scores in appropriate medication for asthma). Caucasians also experience higher A1c testing rates than African-Americans and Hispanic beneficiaries in Arkansas.[vii]

Questions for Further Research

- Aside from access to care, what other factors may contribute to disparities in chronic illness management and outcomes for African American and Hispanic Medicaid beneficiaries (e.g., environmental factors)?
- How does asthma management performance nationally for these two racial/ethnic groups compare to the above findings?

[iv] National averages are based on 2010 Medicaid HMO data, as reported by NCQA.
[v] National data for both 7- and 30-day follow-up after hospitalization for mental illness include children and adults ages six years and older, while state-reported data are only for those ages 6-20.
[vi] Iowa's behavioral health managed care organization requires providers to report on follow-up after hospitalization for mental illness. When gathering CHIPRA measure data, the state learned that many contracted providers administer the The Modified Checklist for Autism in Toddlers (M-CHAT™), which does not meet the criteria for a developmental screening as it does not look at multiple systems. (For more information, visit http://www.autismspeaks.org/what-autism/diagnosis/screen-your-child). This may explain the disparities in scores between the two measures.
[vii] Racial/ethnic disparities in performance of this measure in Pennsylvania could not be detected due to small sample sizes.

4) Reported rates of BMI assessment for children are low across all three states compared to national rates, suggesting the need for improvements in both care delivery and reporting methodology.

Rates of BMI assessment for children ages 3-17 in each of the three states are very low (Arkansas: 1; Iowa: 0; and Pennsylvania: 3), compared to the national average of 37. However, each state noted major limitations in data collection for this measure, presumably contributing to artificially low rates. For example, Arkansas calculated rates using an administrative methodology, excluding service delivery that would have been captured through medical record review. In all three states, many BMI assessments are done outside of the PCP's office (e.g., in a school-based health center) and hence, are not captured in these data.

Question for Further Research

- How can states capture BMI assessments performed in non-clinical settings, in order to obtain a more accurate measure of their use?
- How can pediatric practices share information with non-clinical settings and subsequently coordinate follow-up?

5) Pregnant racial/ethnic minority women are less likely to receive recommended prenatal care, though do not necessarily have worse birth outcomes.

Overall, prenatal care measures in the three states are below the national average,[viii] with the exception of frequency of ongoing prenatal care in Iowa (92 vs. 61).[ix] Iowa's strength in this measure is most notable among Caucasians, who scored 93 compared to African-Americans and Hispanics, both at 87. A similar racial/ethnic disparity appears in timeliness of prenatal care in that state (80 for Caucasians, vs. 68 for African-Americans, and 67 for Hispanics). In Pennsylvania, African-Americans had worse scores than other racial/ethnic populations on the same measure (22 vs. 30 for Hispanics, and 33 for Caucasians).

Racial/ethnic differences are also apparent in birth outcomes, though not necessarily in tandem with disparities in prenatal care. For example, compared to non-Hispanics, Hispanic beneficiaries in all three states have better (lower) scores in the percentage of births less than 2,500 grams, but have the worst rates in both prenatal care measures in Iowa, and the lowest score in frequency of prenatal care in Pennsylvania.[x] African-Americans have consistently poor birth outcomes compared to other racial/ethnic groups in the majority of measures and states, with higher percentages of live births weighing less than 2,500 grams in all three states, higher Cesarean rates in Arkansas and Iowa, and lower rates of deliveries with gestational age greater than 37 weeks in Iowa.

Questions for Further Research

- How can obstetric practices better support the needs of African-American beneficiaries to improve prenatal care and birth outcomes?
- What clinical, systemic, or socio-cultural factors might explain the observed disconnect between poor rates of prenatal care and superior birth outcomes?
- To what extent might low prenatal scores be driven by use of bundled payments (e.g., in trimester packages) that obscure measurement of service encounter data?

[viii] National averages: Frequency of ongoing prenatal care (61%), Timeliness of prenatal care (84%). Also see exhibit D1.
[ix] Low performance in prenatal care measures may be partly attributable to the absence of chart review to accompany administrative claims data, the hybrid approach typically performed for these measures. Administrative claims data on prenatal care encounters may be underreported due to bundled payments.
[x] In Iowa and Pennsylvania, Hispanic beneficiaires have the same score as African-American beneficiaries in frequency of ongoing prenatal care.

SPOTLIGHT: Relationships among Health Risk Factors and Obstetric Care and Outcomes in Iowa

Iowa reported data on the following obstetric beneficiary-level risk factors: (1) diabetes; (2) hypertension; (3) tobacco use (current, past, never); (4) weight gain during pregnancy; and (5) marital status. Analyses explored the relationship between these factors and obstetric care and birth outcomes, with the following key findings (Exhibit D7):

- **Women with diabetes or hypertension experience worse birth outcomes, despite having slightly higher prenatal care utilization**. Women who have diabetes or hypertension have higher rates of Cesarean section, and those with hypertension are three-times as likely to deliver low-birth weight babies, than those without these diagnoses. Women with at least one of these conditions also are less likely to deliver an infant at gestational age of at least 37 weeks, though generally better utilization of prenatal care, than those without. *This paradox of better access to prenatal care and worse birth outcomes may result from the fact that beneficiaries with chronic illness seek more frequent care, while their complex health status may be a greater predictor of birth outcomes.*
- **Former smokers have the highest rates of both frequency and timeliness of prenatal care – even higher than those who have never smoked.** This suggests a possible relationship between previous health behaviors and subsequent utilization of care, warranting further exploration.
- **Women with normal pre-pregnancy weight who gain less than the recommended amount of weight during pregnancy score worse on** frequency of prenatal care, timeliness of prenatal care, percentage of live births less than 2,500 grams, and gestational age greater than or equal to 37 weeks. *This highlights the importance of weight gain as risk-factor in predicting – and impacting - obstetric care utilization and outcomes.*
- **Compared to married women, unmarried women have worse scores in timeliness of prenatal care, percentage of live births less than 2,500 grams, and gestational age greater than or equal to 37 weeks .***These findings suggest the need for further exploration into the role of a partner, or extended family, in access to and utilization of prenatal care.*

6) Analyses of measures by practice size/type suggest opportunities for targeted quality improvement and further research.

Solo practices perform the best of all practice sizes/types in the majority of obstetric measures in Iowa and Pennsylvania, suggesting the need for quality improvement interventions at larger practices.

Rates of child and adolescent access to PCPs at RHCs are below the state average in Pennsylvania; in Iowa, these sites score the lowest of all practice sizes/types on this access to care measure. In contrast, RHCs in both Arkansas and Pennsylvania excel compared to others in BMI assessment and asthma management.

Areas for improvement at FQHCs cut across preventive, behavioral health, and obstetric care.[xi] For example, in Arkansas, FQHCs score poorer than other practice sizes/types on all reported preventive care measures. Performance is poor in Pennsylvania as well, where FQHCs have the worst performance in five of the eight reported measures,[xii] and perform below the state average on the remaining three.[xiii] Rates of behavioral health care delivery at FQHCs are low in the majority of reported behavioral health care measures in each of the three states. FQHCs score below the state average in both measures of prenatal care in Iowa and Pennsylvania; and in Iowa, FQHCs tie with solo practices for the lowest scores in timeliness of prenatal care (74). These sites perform poorer than the respective state averages in Arkansas in live births less than 2,500 grams (23 vs. 10) and Cesarean rate (40 v. 27). Notably, low rates of prenatal care at FQHCs in Pennsylvania do not translate to below-average birth outcomes at those sites—with rates slightly better than the state average in percent of live births less than 2,500 grams (7 vs. 8) and Cesarean rate (26 vs. 28).

Examination of both pediatric and obstetric scores by practice characteristics including racial composition of the patient panel, affiliation with a group, and multispecialty status reveal no consistent patterns either across or within the three states.

[xi] Low rates may be partially attributable to the financing and reporting mechanisms through which these practices operate in Medicaid. State Medicaid programs reimburse FQHCs (as well as RHCs) directly—rather than paying individual clinicians—and use a per-visit rate. Providers working at FQHCs are not eligible for physician payment incentive programs. Further, whereas a non-FQHC physician's office can bill separately for multiple services delivered in a single visit, FQHCs only receive one payment for all services provided during a visit. This may obscure the number of services actually reported, resulting in an under-estimation of rates.
[xii] Includes: well-child visits in first 15 months for zero visits and six visits; access to PCPs; BMI assessment for all ages; and lead screening.
[xiii] Includes: well-child visits ages 3-6 years, and adolescent well-care.

Questions for Further Research

- What factors are driving the superior obstetric performance of solo practices in Iowa and Pennsylvania? Conversely, what challenges of larger practices in those states might benefit from targeted quality improvement?
- To what extent are low scores of FQHCs on various measures a result of measurement reporting constraints? How can these findings be interpreted relative to other published reports showing strong FQHCs performance in a number of preventive and behavioral health care measures?[15,16]
- How can states work with federal bodies such as the Health Resources and Services Administration (HRSA) to coordinate and improve oversight, quality incentives, and technical assistance supports to FQHCs and RHCs?

SPOTLIGHT: Rural Health Clinics

The nation's 3,800 rural health clinics (RHCs) are an essential part of the safety-net delivery system.[14] They provide primary care to between five and eight million low-income individuals who reside in non-urbanized areas, including Medicaid/CHIP enrollees and the uninsured.[xiv] Study findings suggest there may be unique elements to care delivery or access at these sites that warrant further investigation. Comparisons to FQHCs[xv] are helpful in understanding certain findings and identifying areas for improvement. Highlights of RHC findings in each state follow.

ARKANSAS

Scores are high on most measures of preventive care with the exception of well-child visits in the first 15 months. Scores are above the state average for several preventive measures: child and adolescent access to PCPs; well-child visits ages 3-6; and BMI assessment, for which RHCs are also the highest scorers among all practice sizes/types (Exhibit C3). However, performance for well-child visits in first 15 months is worse than the state average. These findings suggest that RHCs may be effective at getting toddlers and children of all ages in the door, but are challenged to provide timely and regular preventive services to infants.

RHCs perform the best of all practice sizes/types on birth outcomes. RHCs have the best (lowest) rate for live births less than 2,500 grams (rates at FQHCs and practices with 10 or more providers are about four-times as high) (Exhibit D3). RHCs also have the best (lowest) Cesarean rate compared to all other practice sizes/types.

IOWA

RHCs have the lowest rates for most pediatric preventive care measures. Of all practice sizes/types, scores are the lowest at RHCs for child and adolescent access to PCPs, Six or More Well-child visits, and Well-child visits ages 3-6. RHC performance for child and adolescent access to PCPs decreases with age through 11 years, and then increases for ages 12 to 19 years (Exhibit C9).

RHCs excel in pediatric asthma management and a key measure of behavioral health. Beneficiaries served by RHCs have the lowest rate of asthma-related ER visits and the highest rates of 7- and 30-day follow-up after hospitalization for mental illness (Exhibit C11).

Performance on obstetric measures is mixed. Frequency of ongoing prenatal care at RHCs is the lowest among all practice size/types, while the rate for timeliness of prenatal care is the highest (Exhibit D6). It may be worthwhile to explore where women are receiving guidance on care early in their pregnancies to prompt initial visits; the channels and content of subsequent recommendations; and potential misperceptions or other barriers to returning for care. Birth outcomes are also mixed: while rates for low birth weight and gestational age of infant are better than the state average, the cesarean rate at RHCs is 40 percent, tied with the rate at FQHCs as the highest (worst) among all practice size/types.

PENNSYLVANIA

RHCs excel in most measures of pediatric preventive care, but lag in access to primary care. Scores for well-child visits in first 15 months are slightly better than the state average (Exhibit C14), and are the highest scores of all practice sizes/types in well-child visits ages 3-6 (tied with practices of 10 or more providers) and BMI assessment – for the latter, the score is 24, compared to the state average of 3.

In contrast, RHC performance in access to PCPs for every age category is lower than the state average, while rates for adolescent well-care at these sites are higher.

RHCs have the worst performance of all practice size/types on every obstetric measure. The rate of ongoing prenatal care is only 1, compared to the state average of 32 (Exhibit D9). The score for timeliness of prenatal care is also strikingly low at 10, less than one-third the state average of 33.

[xiv] RHCs are certified by the Centers for Medicare & Medicaid Services (CMS) to receive Medicare, Medicaid, and CHIP reimbursements, subject to payment caps and other rules, but notably at rates higher than other types of practices.

[xv] FQHCs are another essential part of the safety-net primary care system and are similarly reimbursed for health services under Medicaid, but unlike RHCs, provide care in more urban areas; must serve all patients regardless of ability to pay; are required to provide supportive services beyond primary care, such as case management; are entitled to Section 330 grants; require a patient-majority board; and are held to stricter HRSA quality reporting requirements.

III. PHASE II FINDINGS

Key Findings in Practice Site Efforts to Improve Access and Quality

Findings from the second phase of the study offer insights into: (1) the types of quality-advancing administrative and clinical activities undertaken by pediatric and obstetric practices in Iowa and Pennsylvania; (2) the strength of quality improvement infrastructure; (3) self-reported goals for improvement; and (4) related barriers to performance.[xvi] These insights can inform the development of provider supports that are most needed and likely to be effective for Medicaid-contracted pediatric and obstetric practices.

1) Most pediatric and obstetric practices are implementing key strategies to improve patient access and engage patients and families in care processes, while fewer are working to advance culturally-competent care.

Patient Access

In both Iowa and Pennsylvania, nearly all responding pediatric and obstetric practices are working to ensure timely access to care for individuals who are sick and/or have urgent needs by offering same-day appointments and/or telephone access to a provider when the medical office is closed.

In Iowa, 64 percent of pediatric practices and 45 percent of obstetric practices set guidelines around how long an individual with non-urgent needs must wait to get an appointment; 71 percent of pediatric and 45 percent of obstetric practices have such guidelines for waiting time following arrival (Exhibit F1). Somewhat similarly, 64 percent of pediatric and 36 percent of obstetric practices provide or refer patients to transportation services. Less than 15 percent (14 percent of pediatric, 9 percent of obstetric) use internet-based scheduling for appointments.

In Pennsylvania, 81 percent of pediatric practices set guidelines for wait-days to schedule an appointment and a similar proportion (88 percent) set guidelines for wait-times on the day of the appointment. Among obstetric practices, 75 percent pursue each of these activities (Exhibit F5). All pediatric and the majority of obstetric practices (88 percent) provide or refer patients to transportation services; while 38 percent of pediatric, but no obstetric, practices use internet-based scheduling.

Patient and Family Engagement

All pediatric and obstetric practices in Iowa and Pennsylvania discuss options with the patient or/caregiver when a referral is needed; provide direct assistance to the patient to make the appointment; and generally take into account patient input when planning treatment and care.

Cultural Competency

In Iowa, all pediatric and most obstetric practices (72 percent) report taking into account families' special beliefs about health care or use of alternative medicine (Exhibit F1). While 70 percent of pediatric practices offer translation and interpretation services, just over half of obstetric practices do so. Less than 40 percent of pediatric or obstetric practices assess health literacy needs of patients, and less than 30 percent conduct cultural competency training for staff.

In Pennsylvania, the majority of pediatric (87 percent) and obstetric (75 percent) practices consider families' special beliefs about health care or use of alternative medicine (Exhibit F5), and most practices of both types offer translation and interpretation services (94 percent of pediatric, and 88 percent of obstetric practices). Rates of cultural competency training for providers (about half of pediatric and obstetric practices) or assessment of patient health literacy (about one-third of pediatric and half of obstetric practices) were comparatively lower. In each state, less than 15 percent of practices pursue all of these cultural competency strategies together. Notably, however, a large number of pediatric and obstetric practices track the race/ethnicity and/or language

[xvi] All findings in this section are based on responses to the study survey, and therefore may have some self-reporting bias.

preference of patients using either paper or electronic records—a strategy for that can be important to data-driven, disparities-reduction efforts.

2) Practices in both Iowa and Pennsylvania use numerous strategies for delivering care to individuals with chronic conditions.

In Iowa, half of pediatric practices maintain a registry of patients, including clinical data, for at least one chronic condition (Exhibit F1). However, only 19 percent of responding obstetric practices do, and for fewer conditions. Chronic disease management activities used by at least 70 percent of pediatric practices include: (1) provision of health education materials; (2) follow-up on missed appointments; (3) implementation of evidence-based standards of care; and (4) use of flow sheets during visits.

Survey responses from Pennsylvania practices reveal more common use of chronic care management strategies. For example, 75 percent of pediatric and 63 percent of obstetric practices maintain a registry of patients, including clinical data, for at least one chronic condition (Exhibit F5). Further, more than 80 percent of pediatric practices use most of the chronic disease management strategies queried.

SPOTLIGHT: Pediatric and Obstetric Practices and Health Information Technology

The majority of responding pediatric and obstetric practices in Iowa and Pennsylvania use electronic health records (EHRs) and other tools—typically in conjunction with paper records—for a variety of administrative and clinical functions (Exhibits F1 and F5). Less than 10 percent of pediatric and 20 percent of obstetric practices in Iowa, and only 25 percent of pediatric and obstetric practices in Pennsylvania, rely on paper records alone. Applications of EHRs include:

- Guideline-based reminders for services an individual should receive;
- Alerts of abnormal laboratory or radiology test results;
- Tracking of critical referrals;
- Maintaining patient race/ethnicity/language information; and
- Maintaining a registry of patients with particular chronic conditions and associated clinical data.

Pediatric and obstetric practices report a strong desire to expand use of electronic tools to improve management of clinical data, work flow efficiency, and patient engagement. Practices are interested in electronic prescribing; conducting pre-visit planning and post-visit follow-up using electronic tools; and developing patient portals to facilitate patient education and self-management of chronic conditions. While they see the promise of these innovations, they have concern about having the time and financial resources to implement them. In both states, technological support was among the most common type of support requested. Practices believe their state Medicaid agencies, health plans, medical societies, regulators, and other authorities should play a key role in providing this support (Appendix F).

3) In both Iowa and Pennsylvania, practices face many barriers to delivering behavioral health care; chief among them is a lack of Medicaid-contracted behavioral health providers for referrals.

Pediatric and obstetric practices struggle to identify behavioral health care providers when patient needs arise (Exhibits F2 and F6). Respondents cite several barriers to this, including a lack of behavioral health providers for referral; paucity of staff to engage patients and families; poor coordination across physical and behavioral health providers; and payment and billing constraints.

4) Practices pursue a variety of performance measurement and quality improvement activities; pediatric practices are more likely than obstetric practices to collect quality measures, share results with physicians, and implement formal quality improvement methodologies.

Performance Measurement

In both states, more pediatric, than obstetric, practices collect performance measures. Of those that do, Meaningful Use of EHRs and HEDIS are the most common.

In Iowa, the majority of pediatric practices – 86 percent – participate in quality measurement. Most (71 percent) collect Meaningful Use, 41 percent collect HEDIS, and less than 7 percent collect CAHPS or state-specific

measures. A smaller proportion of obstetric practices (64 percent) collects any quality measures. About two-thirds of these collect Meaningful Use measures, and smaller proportions collect HEDIS (33 percent) or CAHPS or state-specific measures (22 percent).

In Pennsylvania, all pediatric practices collect at least one type of quality measure, most commonly HEDIS (75 percent), followed by Meaningful Use (63 percent), and CAHPS (19 percent). Almost two-thirds (63 percent) of obstetric practices collect any quality measures. Of those that do, about 63 percent collect HEDIS or Meaningful Use measures; none collect CAHPS or other state-specific measures.

Quality Improvement

Use of quality improvement approaches is mixed within and between the two states (Exhibits F1 and F5). More than half of pediatric practices (64 percent) in Iowa formally measure physician performance, but only half share this data with physicians. An even smaller percentage of pediatric practices use quality improvement methodologies such as Plan Do Study Act (PDSA)[xvii] or Lean[xviii] (29 percent in Iowa, 44 percent in Pennsylvania). In contrast, only 18 percent of obstetric practices in Iowa employ any of these strategies; they are more likely to pursue obstetric care-specific activities such as use of checklists (45 percent), rapid response teams to address care quality and patient safety (36 percent), and emergency simulations (27 percent).

In Pennsylvania, slightly more obstetric practices than pediatric (50 v. 60 percent) have a formal process for measuring physician performance, but considerably more pediatric practices than obstetric (63 v. 13 percent) share this data with providers. At least half of obstetric practices use emergency simulations, checklists, and/or rapid response teams to address care quality and patient safety. However, they are less likely to use formal quality improvement methodologies such as PDSA or Lean compared to pediatric practices.

Among practices of both types in both states, those that use any *one* quality improvement strategy are likely to use at least one other.

5) In each state and delivery system, practices identified common areas for improvement and related barriers, current sources of support, and preferred types/sources of support.

Areas for Improvement and Barriers

Pediatric and obstetric practices most commonly identified the following areas for quality improvement: implementation of EHRs; more effective patient and family engagement; enhanced workforce availability; better care coordination; and removal of patient transportation barriers. For each identified goal, practices reported several barriers, most commonly time, staff capacity, and financial resources (Exhibits F3 and F7).

Current Sources of Support

In each state, very few practices receive government or philanthropic support for quality improvement efforts. However, a large percentage receive financial incentives from state Medicaid agencies and health plans, most commonly for EHR implementation (Exhibits F4 and F8).

Preferred Types and Sources of Support

The most common types of support requested by practices in both Iowa and Pennsylvania are technological, financial, and educational (Exhibits F4 and F8). In Iowa, pediatric practices look mainly to their state Medicaid agency for support, while obstetric practices look to their parent organizations. In Pennsylvania, both pediatric and obstetric practices seek support from their Medicaid agencies and health plans; pediatric practices also look to other purchasers, regulators, and quality improvement organizations for support, while obstetric practices want medical societies to play a role.

[xvii] For more information on the PDSA methodology, visit: http://www.innovations.ahrq.gov/content.aspx?id=2398.
[xviii] For more information on the Lean methodology, visit: http://www.ihi.org/knowledge/Pages/IHIWhitePapers/GoingLeanin HealthCare.aspx.

IV. DISCUSSION

Study Implications and Opportunities

Study findings provide valuable insights into the landscape and quality of care for pediatric and obstetric beneficiaries in the three participating states, with implications for state Medicaid programs across the country. The findings can be used to help prioritize opportunities to improve pediatric and obstetric care, as well as suggest areas for further inquiry as states work to identify key areas of need.

Enhance Outreach and Engagement around Pediatric Primary Care

Data analyses show that access to pediatric primary care is generally high across the three states; however utilization of preventive care, particularly for older children and racial/ethnic minorities, is poor. This suggests a need for states and providers to perform more targeted outreach and engagement efforts to these populations, perhaps in partnership with other child-serving entities, such as school systems.[xix] Pediatric practices may also consider exploring internet-based scheduling and transportation assistance as ways to improve access. To address care barriers for racial/ethnic minorities, states may encourage providers to pursue equity-focused interventions, such as culturally and linguistically appropriate appointment reminders and follow-up, or use of tailored outreach strategies. State Medicaid agencies may also consider partnerships with public initiatives such as HRSA's Maternal, Infant, and Early Childhood Home Visiting program,[17] which have significant experience working directly with diverse communities.

Advance Performance Measurement and Quality Improvement Strategies, Especially around Prenatal Care

Low rates of prenatal care utilization by racial/ethnic minorities reveal that barriers to care for these populations persist through reproductive age. Obstetric practices are less likely than pediatric practices to collect quality measures, share quality performance with physicians, or employ quality improvement methodologies, hindering identification of these disparities.

One significant challenge to the measurement—and subsequent quality improvement—of prenatal care utilization is that many women enroll in Medicaid very close to, or upon, delivery, preventing tracking of their care across all trimesters. Payment methodologies such as bundled payments and trimester package reimbursements can also obscure measurement of prenatal services, particularly if care is fragmented across different providers, leading to underestimations of care delivery. Corresponding changes to these methodologies, as well as regular chart extractions from EHRs, may improve the accuracy and completeness of measurement.

Explore Ways to Reduce Racial/Ethnic Disparities in Chronic Illness Care

Racial/ethnic disparities are evident in pediatric chronic illness care as well, for example around asthma care for African-American and Hispanic beneficiaries across the three states. Survey findings indicate that pediatric practices are more likely to use evidence-based clinical standards of care, provide health education materials, and use flow sheets during visits, than other strategies such as team-based care, pre-visit planning, or post-visit follow up. Further research into these chronic care management approaches, and the degree to which they are culturally and linguistically appropriate, may help states refine their recommendations to practices and/or build the capacity of practices with high-volume of racially and ethnically diverse patients to pursue improvements.

Improve Access to Behavioral Health Care

The mixed behavioral health care performance in all three states highlights the need for concerted efforts to improve behavioral health care screening and assessment, treatment, and follow-up. Distinct strategies may be required for different services, care settings, and the degree of integration with primary care. These strategies may need to address the limited availability of behavioral health providers for referral; paucity of staff to fully

[xix] In Iowa, school physicals and immunizations are required at school entry, but subsequently tend only to be required for participation in sports, summer camps, or other activities. The state believes this is the reason why rates of well-child visits decline during middle childhood and adolescence.

engage patients and families; poor coordination across physical and behavioral health providers; and payment and billing constraints, barriers reported by pediatric practices in the surveys.

Examine FQHC Performance and Explore Quality Improvement Opportunities

Differences in the performance of FQHCs compared to other practice sizes/types in some preventive, behavioral health, and obstetric measures in individual states are an important takeaway, suggesting the need for further exploration into underlying factors. Low rates may be partially attributable to the higher-risk nature of the populations they serve, and/or Medicaid reimbursement methodologies, which pay per visit —rather than per provider, or for individual services—obscuring the number of services reported. As FQHCs already receive incentive payments and quality directives from HRSA, states might benefit from aligning support efforts with the federal entity, and/or organizations such as the National Association of Community Health Centers,[xx] which also monitor and address the needs of these practices. Notably, RHCs, which are similarly mandated as FQHCs to serve in medically underserved areas, perform better than FQHCs in a number of domains in each state. States may want to explore how differences in geography, payment incentives, quality reporting, and service scope requirements between the two care settings may contribute to these differences.

Invest in Health Literacy and Cultural Competency Training

While the data analysis revealed disparities across a number of measures for racial/ethnic minority groups, the majority of pediatric and obstetric practices surveyed say that they take into account individuals'/families' cultural preferences and collect race/ethnicity data. The latter bodes well for helping states and providers pursue data-driven interventions to reduce racial and ethnic disparities in care. An important area for improvement appears in low rates of using health literacy measures or cultural competency training for staff, strategies critical to disparities reduction.

Consider the Expressed Needs of Pediatric and Obstetric Practices, Particularly around Technological Capacity

A particular priority noted by surveyed practices in Iowa and Pennsylvania is integrating HIT into practice flow, quality improvement, and patient education. State Medicaid agencies considering ways to support improvements in obstetric and pediatric care, as well as preferred/expected sources of support, should keep this need top-of-mind.

Study Limitations

Phase I Limitations

A number of limitations emerged around the states' data collection, the nature of these data, and, consequently, the analyses. These limitations should be taken into account when interpreting the findings and generalizing them for other states. Understanding these limitations can also inform opportunities to modify the research protocol for future iterations of this type of analysis, and/or to improve state data infrastructure for collecting practice-level data.

Identification of eligible beneficiaries.

The continuous enrollment criteria for the denominators of all measures eliminated children with disruptions in Medicaid eligibility/enrollment. Service use by this population was not captured, as beneficiaries had to be eligible for at least one of the measures to be included in the study.

Determination of the number of providers at each practice site (i.e., "practice size").

Determining the size of Medicaid practices was challenging for each state. Practice size calculations included only providers with pediatric, obstetric, and/or family medicine specialties; it is possible that there were other

[xx] For more information on the National Association of Community Health Centers, visit: http://www.nachc.com/ .

specialists at their practice sites. Further, eligible providers for pediatric care were defined to include physicians and nurse practitioners, but not physician assistants, who may play a meaningful role in Medicaid delivery systems. These limitations may have led to an under-estimation of practice size.

Collecting quality measures.

Resource constraints prevented the states from collecting data beyond those identified in claims.[xxi] For the measures frequency of ongoing prenatal care, timeliness of prenatal care, BMI assessment, developmental screening in first three years, and annual pediatric A1c testing, a hybrid methodology of claims and medical record review would have yielded a more complete dataset. Rates for these measures thus may be under-reported. Rates may also have been under-reported for pediatric services delivered by a provider other than the one assigned to the beneficiary.[xxii] The states also faced barriers to collecting complete and accurate prenatal care data. For example, in Arkansas and Pennsylvania, where obstetric care is not reimbursed per-service, rates for prenatal care were likely under-reported.[xxiii]

Phase II Limitations

Limitations around the collection and interpretation of survey data include:

- Responses may have varied depending on the role of the responding individual at the practice. CHCS sent survey invitations to the office manager/administrator and/or clinician (physician or nurse practitioner), giving either party the option to complete the survey.
- While the survey sample mirrored the distribution of high-volume practices in each state, the distribution of *responding* practices did not.
- It is likely that respondents tended to work at practices more interested in quality improvement, and/or those most in-need of the gift card offered for completion of the survey.
- Some surveys and/or individual questions were not fully completed, preventing the inclusion of answers to every question in the full data set.

Pursuing Additional Analyses

The study revealed variations in pediatric and obstetric quality in the three states by practice size and type, as well as beneficiary race/ethnicity. Study limitations, particularly around sample size for individual measures, rendered findings largely descriptive. Future efforts to understand quality of care may utilize a more comprehensive approach that explores additional practice-, provider-, and patient-level drivers and potential predictive relationships among them. Several quantitative and qualitative practice characteristics may be worth exploring, in conjunction with practice size/type, or independently. For example, subsequent studies using practice site-level data may incorporate social network analyses to understand how provider networks interact with practice site characteristics to impact provider capacity and care delivery. Beyond practice size, other practice-site variables such as workforce availability, financial strength, payer mix, and years of provider service, may be important to include in such models. Similarly, multivariate analyses of provider-level factors such as level and type of training, certification, languages spoken, age, and gender may contribute important insights into the dynamics of provider effectiveness.

States may also consider how beneficiary characteristics other than race/ethnicity can be included in measurement and evaluation efforts. Available data on eligibility category, years of enrollment in Medicaid, and/or continuity of enrollment may provide insight into care-seeking behaviors and outcomes of vulnerable sub-populations, such as those eligible for foster care or SSI; those newly enrolled with urgent needs; and/or longer-term beneficiaries. Level of cross-agency involvement—now easier to measure with the ACA-mandated

[xxi] The exception was birth outcomes measures, for which states had to access birth certificate data held by their public health departments.
[xxii] For example, a a psychiatrist in a non-primary care setting (e.g., community mental health center) might deliver medication management for the prescription of ADHD medication, or *BMI assessment* may be conducted by a practitioner at a school-based health center."
[xxiii] The Arkansas Medicaid agency, for example, makes a bundled payment to the provider who performs the delivery; this may not be the same clinician who provided prenatal care. In Pennsylvania, prenatal care providers bill every trimester for a package of prenatal services rendered during that period, for which encounter data are not reported to states.

single enrollment portal—may also shed light on children and families' familiarity with public programs; the need for outreach and engagement; and related utilization patterns. Other demographic information that addresses the non-medical determinants of health, such as residential zip codes, can help trace individuals' patterns of care utilization and outcomes to health risks associated with residential zones and related environmental factors (e.g., air quality, access to healthy foods). Finally, beyond quantitative data, direct beneficiary feedback in the form of surveys and/or focus groups will be important to understanding in full, the experience of care for beneficiaries at pediatric and obstetric practices, and the barriers to quality that emerge in advance of, or during, these encounters.

V. CONCLUSION

The findings produced through this study indicate populations, health services, and care settings that could benefit from quality improvement support in the Medicaid delivery systems of Arkansas, Iowa, and Pennsylvania. Results of the practice-site surveys administered in Iowa and Pennsylvania suggest additional opportunities to support practice-level behaviors and policies that will advance access and care quality for Medicaid beneficiaries. Study findings also point to research questions that states may explore to better understand and build upon these analyses. Together, this information can help states to achieve the greatest return on investment for care quality and access within Medicaid.

This report additionally offers Medicaid agencies in Arkansas, Iowa, and Pennsylvania respective benchmarks for current performance relative to national averages, and illustrates how care quality and access can vary by state depending on beneficiary demographics, provider landscape, payment and delivery models, and practice infrastructure. As states fully implement the ACA beginning in 2014, it may be valuable to see how these variables change, in concert with care access and quality.

Lastly, it is important to note that while this report reflects data from the FFS or PCCM delivery systems in just three states, Medicaid leaders in all states may consider both the analytic approach and findings instructive to their own efforts to measure and improve pediatric and obstetric care. Common findings across the three states, as well as specific findings from states with similar beneficiary populations and Medicaid delivery systems, may be most relevant.

BEYOND THE DATA: Advancing Pediatric and Obstetric Quality in Arkansas, Iowa, and Pennsylvania

Since the data reporting period for this study, the three participating states have taken meaningful steps to further pediatric and obstetric access and care for their Medicaid beneficiaries, as described below.

Arkansas

Arkansas has led several efforts to improve access and outcomes for Medicaid-enrolled women and children, including its *Medicaid Inpatient Quality Incentive Program,* which uses educational strategies and payment levers to reduce elective deliveries by induction or Cesarean section. The state has also set a number of obstetric milestones, including a reduction in low-risk, first time Cesarean sections, and an increase in breastfeeding at time of discharge. In the pediatric arena, Arkansas has set a goal of increasing childhood preventive visits. Supporting these goals are a number of payment and delivery system reform initiatives that seek to transform the way care is delivered in the state, including providing episode-based payments for neonatal and perinatal care (which should counter the data collection limitation presented by the current bundled payment system), inpatient asthma, ADHD, and tonsillectomy; implementing Patient Centered Medical Homes with total cost of care shared savings, as well as health homes focused on individuals with severe behavioral health needs and disabilities; and regionalization of neonatal intensive care units (NICUs).

The state is also working to address a number of challenges to implementation of these programs, including rural workforce shortages; scalability of intensive programs such as PCMH across diverse practice types; inertia among provider systems to work together; and structural and cultural challenges of delivering care to low socio-economic populations.

Iowa

Iowa's Medicaid program, recognizing its role as one of the largest payers in the state, has focused on improving access and outcomes to perform on-par with commercial insurers. The state has instituted pay-for-performance in its health home program and facilitated quality improvement plans with providers to disseminate evidence-based practices. The Medicaid agency also recently implemented two health homes: one for children with serious emotional disturbance, and another for adults with serious and persistent mental illness. The state sees these as stepping stones to developing Medicaid accountable care organizations, funded through the federal State Innovation Model[18] award, which will create a foundation of coordinated, high-quality care in the state.

Iowa is specifically addressing obstetric care quality in its Medicaid program by working with the Hospital Engagement Network,[19] a program of Partnership for Patients, a nationwide, public-private collaboration to keep individuals from being harmed while in the hospital and allowing them to heal without complication once they are discharged. Through this program, the state is implementing a hard-stop policy at every hospital in the state that would eliminate all non-medically indicated, early (< 39 weeks), elective inductions. The state also leads a Medicaid Maternity Management Program to provide prenatal and post-partum support – including transportation services, smoking cessation programs, customized treatments, and patient education – to high-risk obstetric beneficiaries. A statewide Maternal Health Taskforce is working with the Iowa Department of Public Health and other stakeholders to reduce tobacco use among pregnant women and evaluate the effectiveness of post-partum home visits. The state is also participating in the Medicaid Medical Director's Network, a program of the National Association of Medicaid Directors, which is engaging Medicaid and public health agencies to explore obstetric quality improvement data, such as the cost of NICU stays and prevalence of mental health and substance use conditions among pregnant women. Barriers to many such innovations include a limited provider base in rural areas, resistance among providers to delivery system innovations, and state budget cuts.

Pennsylvania

The Pennsylvania Medicaid agency has pursued a number of reforms to its payment and delivery system to improve care for Medicaid beneficiaries. The state has implemented mandatory managed care statewide; created quality-based, pay-for-performance programs for both managed care organizations and providers; and instituted quality reviews with each of its contracted health plans. In the area of obstetric care, the state has led many efforts, such as instituting bundled payments;[xxiv] requiring health plans to report on HEDIS-like obstetric measures; and incentivizing use of an obstetric needs assessment form through which practices can extract and report key quality data directly from EHRs. The Medicaid agency hopes to leverage these changes to: increase the number of well-child and adolescent well care visits; eliminate or reduce early elective deliveries to less than one percent; and decrease Cesarean section rates to less than the Medicaid national average. To improve pediatric quality, the state is participating in a Children's Health Insurance Program Reauthorization Act (CHIPRA) Quality Demonstration Grant[20] to evaluate pediatric CHIPRA core measures; implementing medical homes for beneficiaries with complex needs; and providing supports to facilitate meaningful use of EHRs by urban and rural providers.

[xxiv] While bundled payments present challenges to tracking service delivery, this reimbursement structure increases the likelihood that a patient will receive all needed services, optimizing value for what is being paid.

APPENDIX A: RESEARCH METHODOLOGY

Data Analysis in Phase I: Medicaid Administrative and Claims Data

Data collection and analyses in Phase I included:

1. Identifying eligible providers, the sites at which they practice, and site characteristics—specifically, size, practice "type" (e.g., office, FQHC, or RHC), medical group affiliation, and multi-specialty status;
2. Identifying pediatric and obstetric beneficiaries assigned to eligible providers during 2010, as well as the eligibility category and race/ethnicity of these individuals;
3. Assessing the racial and ethnic composition of practice sites' Medicaid populations based on patients assigned to providers at each site; and
4. Assessing quality of care delivered to pediatric and obstetric Medicaid beneficiaries by site and race/ethnicity.

A description of the methodology for each of the above follows.

1. Identifying Eligible Providers, Their Practice Sites, and Characteristics of Those Sites

A. Eligible Providers

Arkansas and Iowa identified pediatric and obstetric providers statewide, while Pennsylvania only included those from the 42 counties participating in its PCCM program.[xxv]

- **Pediatric:** States used provider data files and Medicaid claims to identify PCPs receiving fees in the PCCM program. Eligible providers:
  - Were assigned through the PCCM program to at least one eligible beneficiary in the measurement year;[xxvi] and
  - Met provider type criteria for "pediatric provider," defined as a physician or nurse practitioner of pediatric or family medicine specialty.
- **Obstetric:** States used a combination of provider data files, Medicaid claims, and birth certificate data to identify the practitioners providing obstetric services to each beneficiary. Eligible providers:
  - Had a claim for at least one eligible beneficiary in the measurement year; and
  - Met provider type criteria for "obstetric provider," defined as obstetricians, family practitioners, nurse practitioners, and certified nurse midwives.

As not all states *assign* obstetric providers to pregnant women, each state used a unique methodology to match service-rendering providers with beneficiaries.

- **Arkansas'** administrative files indicate the delivering physician as a beneficiary's assigned provider – due to a bundled payment methodology. This provider may or may not also be the physician responsible for prenatal care. Further, birth certificate data do not include the rendering provider's information. As a result, Arkansas had to link claims and birth records first to mothers and then to providers based on beneficiary identifiers on claims.[xxvii]
- **Iowa** used Medicaid claims and birth records – already linked through a previous Medicaid-public health data exchange –to identify the service-rendering obstetric provider for each beneficiary.
- In **Pennsylvania**, pregnant women are not assigned an obstetric provider. For a given eligible beneficiary, the state identified the obstetric provider with the majority of claims prior to delivery as the "assigned" provider. If two providers had the same number of claims, the provider with the claim closest to the date of delivery was identified.

[xxv] Counties are: Bedford, Blair, Bradford, Cambria, Cameron, Carbon, Centre, Clarion, Clearfield, Clinton, Columbia, Crawford, Elk, Erie, Forest, Franklin, Fulton, Huntingdon, Jefferson, Juniata, Lackawanna, Luzerne, Lycoming, McKean, Mercer, Mifflin, Monroe, Montour, Northumberland, Pike, Potter, Schuylkill, Snyder, Somerset, Sullivan, Susquehanna, Tioga, Union, Venango, Warren, Wayne, and Wyoming.

[xxvi] If a beneficiary was assigned to multiple PCPs during the measurement year, states assigned the PCP with the greatest length in time of beneficiary assignment (Arkansas) or the PCP with the greatest number of claims associated with that beneficiary (Iowa and Pennsylvania) to the beneficiary. If equal assignment existed, all states used the most recent assignment.

[xxvii] Due to the state of Arkansas' concerns over the validity of its prenatal care data, those scores are not reported in this document.

B. Assigning Providers to Practice Sites

The study defined a "practice site" as a single geographic location where pediatric and/or obstetric services were provided. States attempted to identify addresses within provider files, with varying degrees of success, necessitating alternate methods to link providers to sites.

- In **Arkansas**, provider IDs are not associated with a single site of care, so billing and performing provider IDs for services rendered were identified in Medicaid claims data and then linked to provider group IDs. Provider group ID, which is associated with a single physical location, was used to aggregate individual physicians into groups. Solo practitioners were represented by those providers without a group ID or whose group ID included only one associated provider ID. This aggregate list of provider groups and solo practitioners was analyzed to find common occurrences of addresses to define unique practice sites;
- In **Iowa**, neither provider data nor claims necessarily contain the address of service rendering. Iowa thus used group ID (except for solo practitioners) as a proxy for practice site; and
- In **Pennsylvania**, each provider file contains a provider ID and one or more IDs that refer to location(s). These may indicate where services are provided and/or represent a billing location. The state conducted online and telephonic research to verify the addresses in the provider file, using a combination of provider and location ID to filter down to unique locations.

C. Assigning Practice Size and Type and Generating Associated Distributions

For pediatric and obstetric providers and sites, states determined the number of eligible providers at each site that was not an FQHC or RHC using site addresses and practicing providers with claims specific to each address. They identified FQHCs and RHCs using the provider type/specialty assigned to providers.

Using provider counts, states aggregated practices by the following size/type categories:

Exhibit A1: Practice Size Categories Determined for Pediatric and Obstetric Delivery Systems

Pediatric Practice Size/Type Categories	Obstetric Practice Size/Type Categories
Solo practice (one provider)	Solo practice (one provider)
2 to 4 providers	2 to 3 providers
5 to 9 providers	4 to 9 providers
10 or more providers	10 or more providers
FQHCs	FQHCs
RHCs	RHCs

D. Identifying Other Practice Characteristics

States determined whether each practice was affiliated with a medical group.

- **Arkansas** looked at tax ID associated with provider group ID to confirm group status. While provider group ID identified the location at which multiple providers practice, the tax ID verified the organizational structure. Arkansas also determined whether each pediatric practice was a multi-specialty practice.
- In **Iowa**, since group ID was used originally as a proxy for practice site, group affiliation could only be determined for solo practices, and thus was not included in the analysis for this state.
- **Pennsylvania** used the location identifier in the provider file to identify a provider (or multiple providers) practicing in more than one location as a group.

2. Identify Eligible Pediatric and Obstetric Medicaid Beneficiaries, as Well as Their Race/Ethnicity

A. Eligible Patients

- **Pediatric:** States used Medicaid eligibility enrollment files from PCCM programs to identify eligible beneficiaries, defined as those:
  - Under age 21, as of December 31, 2010 (the end of the measurement year);
  - Eligible for at least one of the specified quality measures; and
  - Assigned to an eligible pediatric provider through the state's PCCM program.

- **Obstetric:** States used Medicaid enrollment/eligibility files, Medicaid claims, and birth certificate data to identify beneficiaries who were eligible for at least one of the specified obstetric quality measures and assigned to an eligible obstetric provider.

  States used claims data for measures related to prenatal care, and birth certificate data for measures related to birth outcomes. For the latter, mothers' social security numbers and first/last names were extracted from birth records and matched to data in Medicaid enrollment/eligibility files.

B. Patient Race/Ethnicity

For both pediatric and obstetric beneficiaries, all three states used demographic data from eligibility/ enrollment files to identify beneficiary race/ethnicity in these categories:

- Caucasian;
- African American;
- Non-Caucasian Hispanic/Latino ("Hispanic or Hispanic/Latino");
- Other; [xxviii] and
- Unknown.

3. Assess the Racial and Ethnic Composition of Practice Sites

Using the race/ethnicity of beneficiaries assigned to a given practice, states determined whether each practice had a majority-Caucasian Medicaid beneficiary panel (i.e., > 50 percent Medicaid beneficiaries served by the practice are Caucasian).

4. Assess Quality of Care Delivered to Pediatric and Obstetric Patients by Site and Race/Ethnicity

Rates for the submitted measures were generated using Medicaid claims data from the year 2010, calculated according to the methodology prescribed for each measure by the Initial Core Set technical manual.[21] Inclusion criteria for beneficiary age and enrollment were followed per measure specifications. States were already collecting many of these measures for Healthcare Effectiveness Data and Information Set (HEDIS) reporting, but had to adjust numerators and denominators to reflect the specific eligibility criteria of the study. Due to bandwidth constraints that limited data collection to claims-based data – without supplemental medical record review – as well as other challenges around accurately assigning claims to providers and service code availability, states identified several measures for which rates may have been under-reported:

- **Arkansas:** BMI assessment for children/adolescents; follow-up after hospitalization for mental illness;
- **Iowa:** Weight assessment and counseling for nutrition and physical activity for children/adolescents; BMI assessment for children/adolescents; developmental screening in first three years; timeliness of prenatal care; and estimated gestational age of delivered infants; and
- **Pennsylvania:** Both prenatal care and both birth outcome measures.

States stratified measure rates by practice size/type; practice characteristics of group affiliation, racial composition, and multi-specialty; and beneficiary race/ethnicity. In addition, Iowa reported on the prevalence of a number of obstetric risk factors to analyze the association of these risk factors with practice size/type, and quality measure scores.[xxix] The state reported on: weight gain during pregnancy; tobacco use; diabetes; hypertension; and marital status.

CHCS conducted comparative analyses of all of the pediatric and obstetric measure rates by the various stratifications described above.

[xxviii] Due to the small numbers of beneficiaries in racial/ethnic groups other than African Americans and Hispanics – e.g., American Indian/Native American, Asian, etc -- particularly when stratified by practice size and/or quality score, counts for those groups were included in the categrory "Other." They were included in the following race/ethnicity analyses: African Americans v. non-African Americans; Hispanics v. non-Hispanics; and Caucasians v. non-Caucasians.

[xxix] Through a data-sharing partnership with the Iowa Department of Public Health (IDPH), the Iowa Medicaid agency routinely maintains a comprehensive database of service utilization and beneficiary health status, derived from Medicaid claims data and vital records, respectively.

Data Analysis in Phase II: Surveys of Pediatric and Obstetric Practices

The second phase of research involved surveys of pediatric and obstetric practices in Iowa and Pennsylvania. The steps involved in this phase included the following:

1. Identify High-Volume Obstetric and Pediatric Practices

CHCS calculated the average patient panel size for each practice size/type category determined in Phase I, and asked each of the two states to identify practices with volumes in the top quartile of those panel sizes.

2. Develop and Pilot Test Survey Instrument

CHCS created two 42-question surveys—one for pediatric, and one for obstetric practices. Surveys included 38 multiple-choice and four open-ended questions, exploring practice characteristics and behaviors related to access to care; care coordination; patient- and family-centeredness; cultural competence; information technology; chronic disease management; and performance monitoring and quality improvement. Questions about barriers/facilitators of practice improvement and areas of technical assistance need were also posed.[22] CHCS pilot-tested the survey with two pediatric and two obstetric practices in states that were not a part of this study, and incorporated their feedback to modify the tool.

3. Field Survey

Projecting a maximum 60 percent response rate, CHCS initially invited 25 pediatric and 17 obstetric practices from each state to participate in the survey, aiming to collect responses from 15 and 10 practices, respectively, in each state. CHCS sent an invitation letter via post and e-mail, and offered practices both paper and electronic survey options. A modest gift card was offered to reward participating practices. CHCS followed up with practices via phone and e-mail, and issued invitations to additional practices to meet the target number of responses (a total of 35 pediatric and 33 obstetric practices in Iowa; and 29 pediatric and 19 obstetric practices in Pennsylvania). As a result of these efforts, CHCS received surveys from 14 pediatric and 11 obstetric practices in Iowa; and 16 pediatric and eight obstetric practices in Pennsylvania.

4. Analyze Results

Not all practices answered every question; reported rates for each question reflect a denominator of only those who responded. Microsoft Excel 2007 and SPSS statistical software were used for analyses.

APPENDIX B: CHARACTERISTICS OF PEDIATRIC AND OBSTETRIC PRACTICES

This appendix describes the three states' Medicaid pediatric and obstetric care delivery landscapes, highlighting the demographic profile of patients served through these systems and where they most often go for care.

Pediatric Care

As seen in Exhibit B1, there are varying degrees of racial/ethnic diversity in the three states, with the least in Pennsylvania. Notably, while Iowa only reported 45 percent of pediatric beneficiaries to be Caucasian, race/ethnicity is unknown for 33 percent.[xxx] Further, while slightly more than half of pediatric beneficiaries in Arkansas are Caucasian, 26 percent are African-American (compared to 8 percent in Iowa, and 7 percent in Pennsylvania).

Exhibit B1: Distribution of Pediatric Beneficiary Race/Ethnicity

Beneficiary Race/Ethnicity	AR		IA		PA	
	n	%	N	%	n	%
African-American	112,142	26%	13,992	8%	19,375	7%
Hispanic	49,781	11%	21,915	13%	17,665	7%
Caucasian	238,106	54%	76,086	45%	217,842	83%
Other	9,146	2%	2,585	2%	7,536	3%
Unknown	29,061	7%	55,510	33%	152	0%
All Beneficiaries	**438,236**	**100%**	**170,088**	**100%**	**262,570**	**100%**

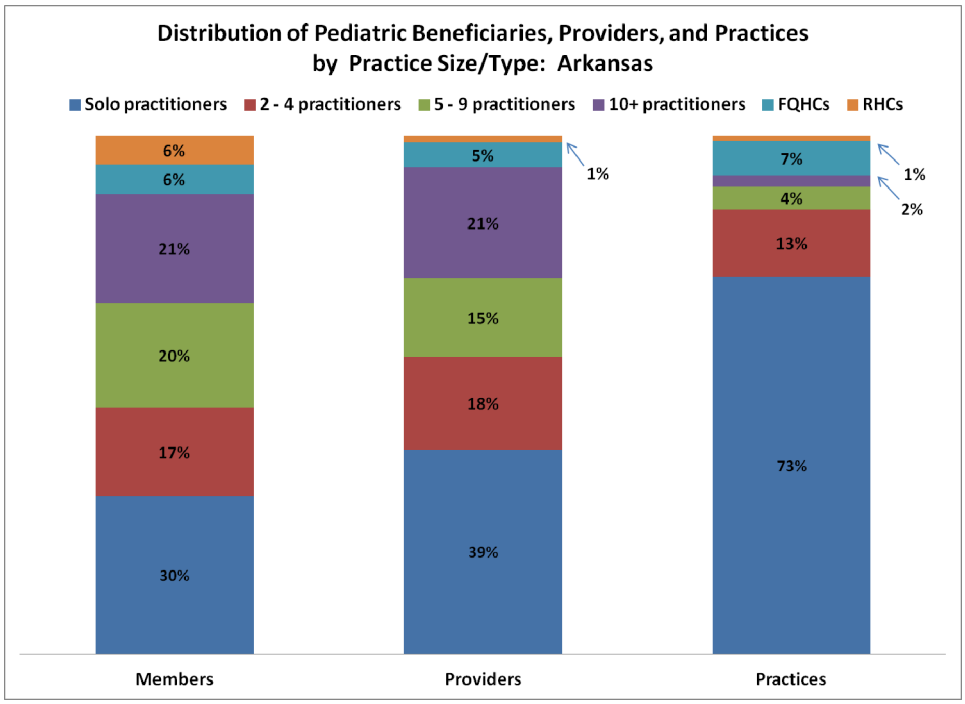
Practice Size/Type and Beneficiary/Provider Distribution

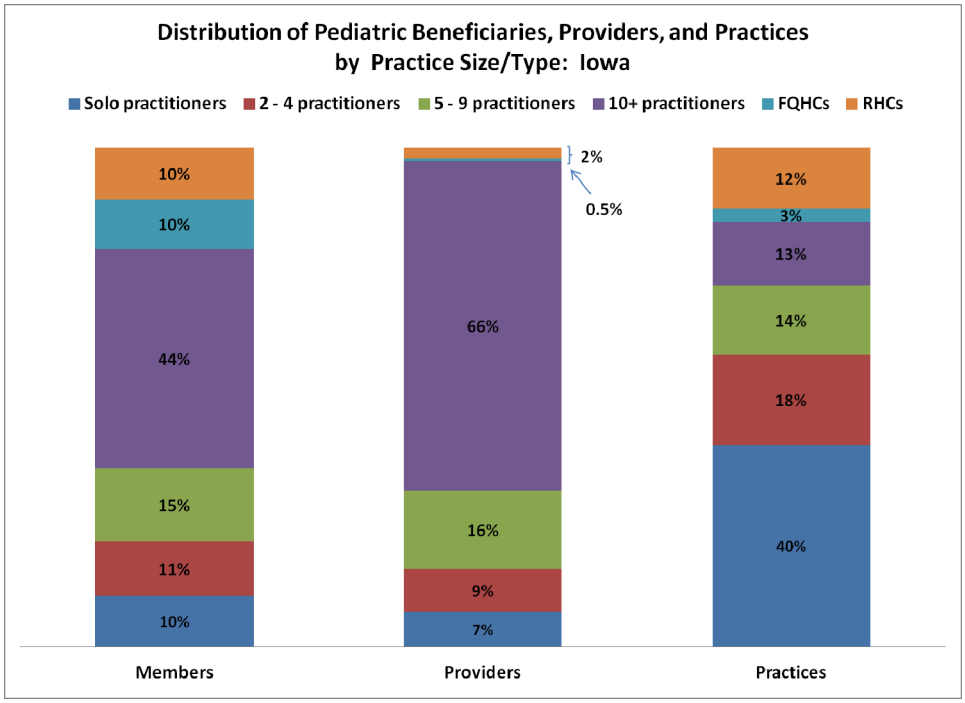
Using practice size/type as a stratifying metric, CHCS identified meaningful patterns in where providers practice and where beneficiaries receive care in each state (Exhibit B2):

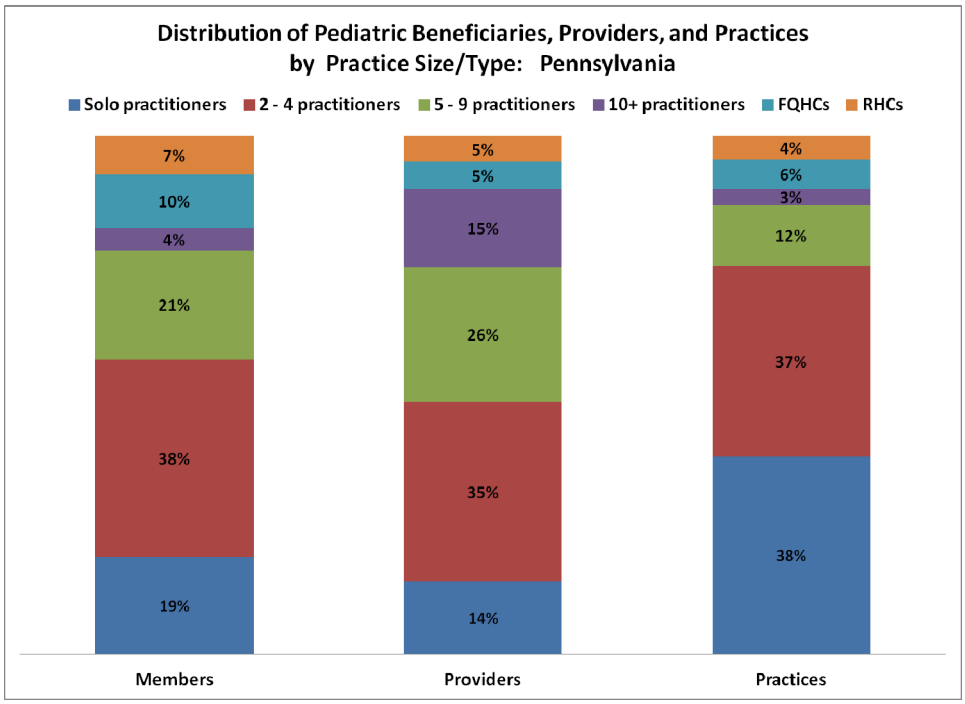
- In Arkansas and Pennsylvania, most (86 percent and 75 percent, respectively) pediatric practices are small (i.e., have four or fewer providers), while in Iowa, only 58 percent are such; and
- The percentage of beneficiaries served at small pediatric practices in Iowa is greater than the percentage of providers at these sites, suggesting a large provider-to-patient ratio.

[xxx] As 73 percent of obstetric beneficiaries in the state are Caucasian, we might assume that the majority of the pediatric "unknown" population is Caucasian. However, the large percentage of "unknown" race/ethnicity should be considered in all interpretations of the Iowa study findings related to patient race/ethnicity.

Exhibit B2: Distribution of Pediatric Beneficiaries, Providers, and Practices by Practice Size/Type in Each State







Practice Size/Type and Beneficiary Race/Ethnicity

Trends in sites of care by beneficiary race/ethnicity were also revealed in each state, as follows:

- ***Arkansas Pediatric Care Delivery**:* Hispanics are much more likely than non-Hispanics to be served by FQHCs or RHCs, representing 11 percent of the population, yet 22 percent of beneficiaries served by FQHCs, and 26 percent of those served by RHCs. In contrast, African-Americans are much more likely—and Hispanics the least likely—than other racial/ethnic groups to be served by solo practices. Similarly, solo practices, FQHCs, and RHCs are less likely than other practice sizes/types to have majority-Caucasian patient panels.
- ***Iowa Pediatric Care Delivery**:* Caucasian beneficiaries (45 percent of the population) are a disproportionately large share of patients served by RHCs (61 percent), and a relatively small share of those at FQHCs (28 percent). Similarly, African-American (8 percent of the population) and Hispanic beneficiaries (13 percent of the population) are over-represented at FQHCs, where 16 percent of patients are African-American, and 25 percent are Hispanic.
- ***Pennsylvania Pediatric Care Delivery**:* Of all racial/ethnic groups, Hispanics are the most likely to be served by FQHCs, and the least likely by RHCs. RHCs are, by far, the least likely practice size/type to have a majority-Caucasian panel (62 percent vs. a range of 89 to 96 percent elsewhere).

Practice Size/Type and Other Patterns

A number of pediatric practice characteristic trends also emerged (Exhibit B3):

- ***Majority-Caucasian patient panel:***[xxxi] At least half—and in Pennsylvania, almost all—of the pediatric practices in each state have majority-Caucasian patient panels. Likelihood in each state varies with practice size: the least likely to have a majority-Caucasian panel in Arkansas are FQHCs; and in Pennsylvania, RHCs.
- ***Group affiliation:*** Most pediatric practices (88 percent) in Arkansas, but only 31 percent in Pennsylvania, are affiliated with a group. In both states, the likelihood of group affiliation increases with practice size.

[xxxi] As race/ethnicity was "unknown" for 33 percent of Iowa's study population, data regarding majority-Caucasian practices in Iowa is not reliable, and interpreations are thus not provided in this report.

- ***Multispecialty practice***: In Arkansas, 71 percent of pediatric practices are multispecialty, with greatest likelihood at FQHCs (97 percent) and RHCs (89 percent).

Exhibit B3: Distribution of Pediatric Practice Characteristics by Practice Size/Type by State

	Majority-Caucasian Patient Panel		Affiliated with a Group Practice		Multi-Specialty Practice[xxxii]
Practice Size/Type	**AR**	**PA**	**AR**	**PA**	**AR**
Solo	67%	95%	85%	16%	76%
2 – 4 providers	73%	96%	93%	30%	35%
5 – 9 providers	83%	96%	93%	34%	56%
10+ providers	70%	89%	100%	48%	80%
FQHC	53%	95%	98%	87%	97%
RHC	22%	62%	100%	74%	89%
All Practices	**67%**	**96%**	**88%**	**31%**	**71%**

Obstetric Care Delivery

The distribution of obstetric beneficiary race/ethnicity largely mirrors that of the pediatric population (Exhibit B4): Arkansas has the largest percentage of non-Caucasian beneficiaries (43 percent), while Pennsylvania has the least (11 percent).

Exhibit B4: Distribution of Obstetric Beneficiary Race/Ethnicity by State

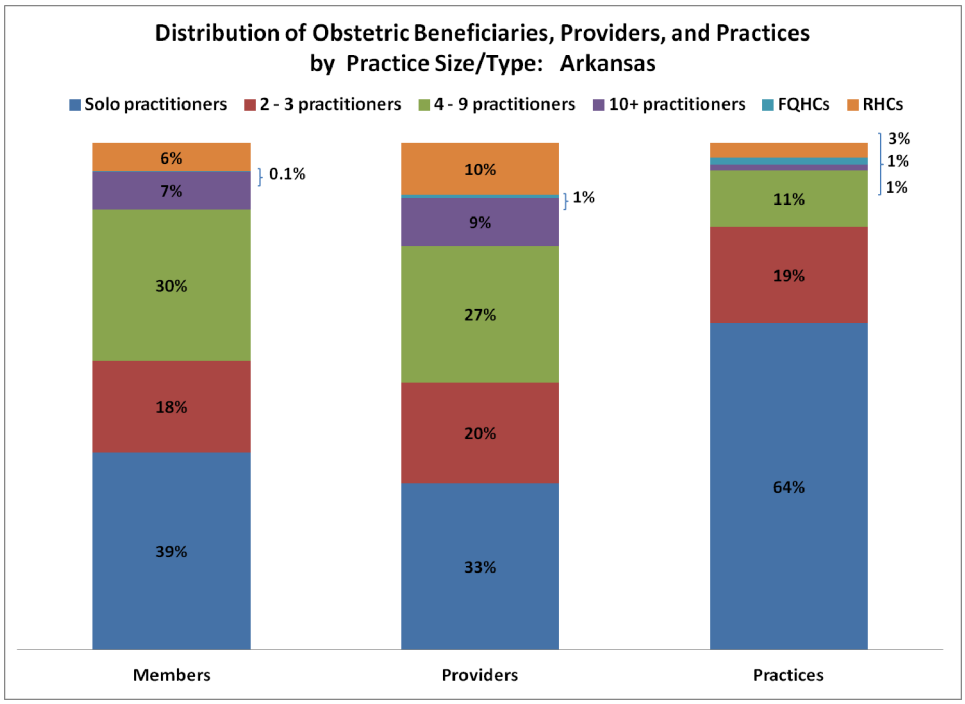
Beneficiary Race/Ethnicity	AR		IA		PA	
African-American	7,252	25%	1,396	9%	162	4%
Hispanic	3,797	13%	2,059	14%	176	5%
Caucasian	16,553	57%	10,881	73%	3,429	89%
Other	748	3%	485	3%	84	2%
Unknown	604	2%	N/R	N/R	N/R	N/R
All Beneficiaries	**28,954**	**100%**	**14821**	**100%**	**3,851**	**100%**

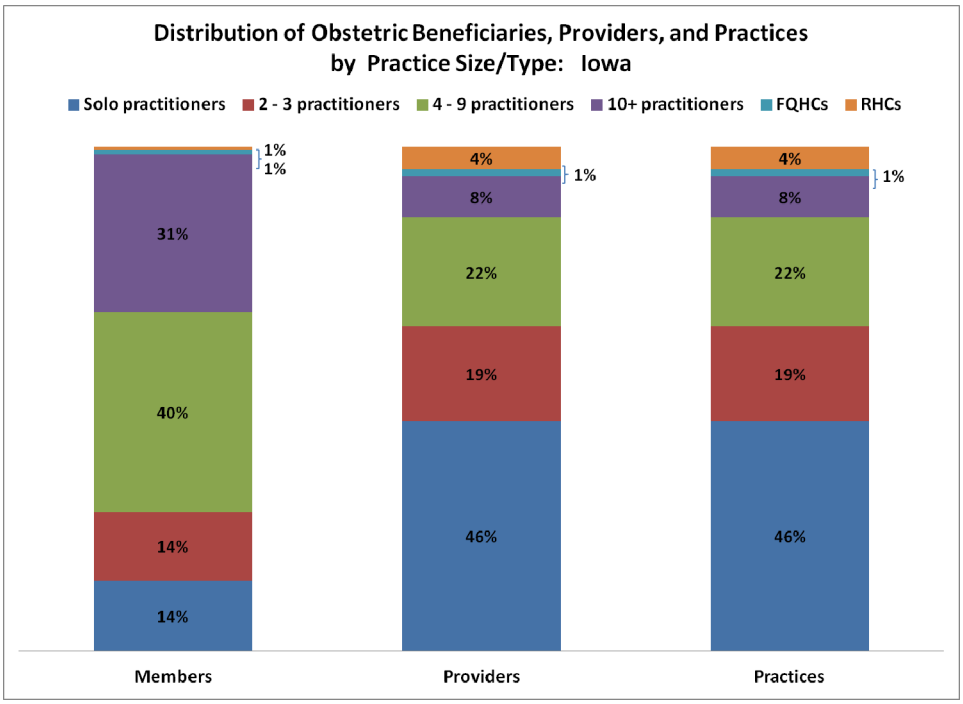
Practice Size/Type and Beneficiary/Provider Distribution

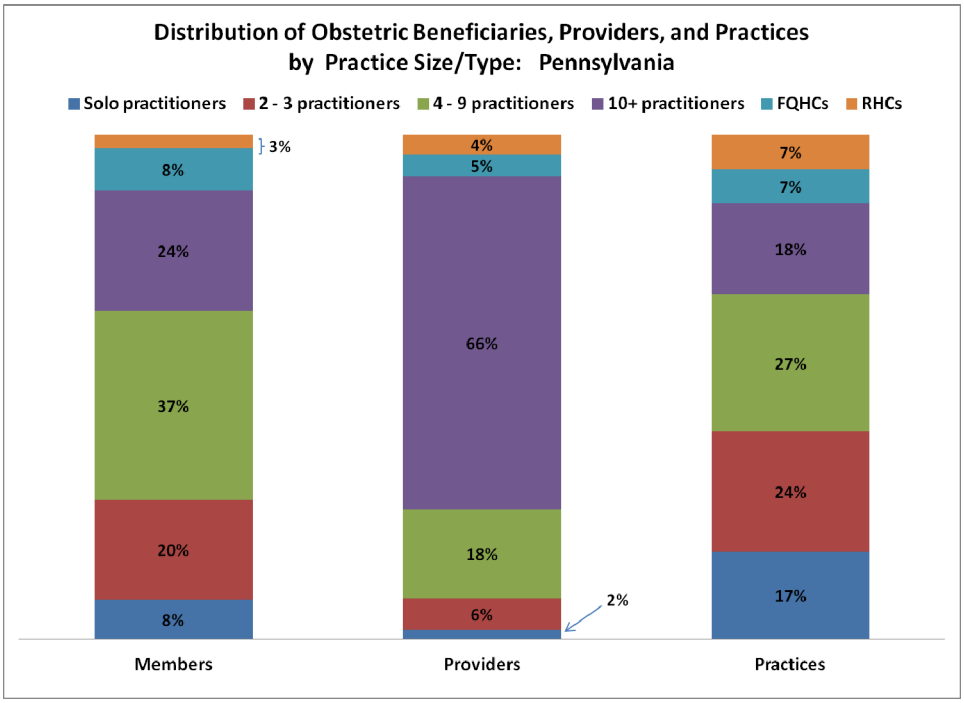
As in the pediatric arena, trends were identified in care delivery by practice size/type (Exhibit B5). Most notably, small obstetric practices (i.e., those with three or fewer providers) play a dominant role in Arkansas (83 percent of practices) and Iowa (65 percent), but a smaller role in Pennsylvania (41 percent).

[xxxii] Solo practitioners might be considered multi-specialty if: (1) the practitioner had more than one certification (e.g., pediatrics and family medicine); and/or (2) it is a practice with multiple physicians of varying specialties, but only one qualified as a "pediatric" provider per the study specifications.

Exhibit B5: Distribution of Obstetric Practice Size/Type by Beneficiaries, Providers, and Practices in Each State







Practice Size/Type and Beneficiary Race/Ethnicity

In each state, there were also patterns in the site of obstetric care delivery by beneficiary race/ethnicity:

- ***Arkansas Obstetric Care Delivery****:* African-Americans are over-represented at FQHCs, representing only 25 percent of the population, but three-fourths of the beneficiaries served there. Hispanic beneficiaries are more likely to be served by practices with 10 or more providers and/or RHCs compared to any other racial/ethnic group.

- ***Iowa Obstetric Care Delivery****:* African-Americans are over-represented at FQHCs relative to their percentage of the population (20 vs. 9 percent); Caucasians are over-represented at RHCs (95 vs. 73 percent); and Hispanics are over-represented at solo practices (21 vs. 14 percent).

- ***Pennsylvania Obstetric Care Delivery****:* Almost all beneficiaries served by RHCs are Caucasian. African-Americans are less likely than others to be served by small practices, and more likely to go to RHCs.

Practice Size/Type and Additional Trends

A number of obstetric practice characteristic trends also emerged (Exhibit B6):

- ***Majority-Caucasian patient panel:***[xxxiii] Compared to pediatric practices, similar percentages of obstetric practices in Arkansas (62 percent of obstetric vs. 67 percent of pediatric) and Pennsylvania (96 percent of both obstetric and pediatric) have majority-Caucasian patient panels.
- ***Group affiliation:*** While obstetric and pediatric practices in Arkansas are equally likely (88 percent) to be affiliated with a group, a large difference was seen between the two delivery systems in Pennsylvania. Only 31 percent of the state's pediatric practices are affiliated with a group, compared to

[xxxiii] As race/ethnicity was "unknown" for 33 percent of Iowa's study population, data regarding majority-Caucasian practices in Iowa is not reliable, and interpreations are thus not provided in this report.

64 percent of obstetric practices. For obstetric practices, FQHCs are the most likely, but RHCs are by far the least likely to be affiliated.

Exhibit B6: Distribution of Obstetric Practice Characteristics by Practice Size/Type by State

	Majority-Caucasian Patient Panel		Affiliated with a Group Practice	
Practice Size/Type	**AR**	**PA**	**AR**	**PA**
Solo	60%	95%	85%	41%
2 – 3 providers	72%	99%	89%	56%
4 – 9 providers	78%	93%	96%	71%
10+ providers	0%	96%	100%	70%
FQHC	67%	95%	100%	95%
RHC	14%	100%	100%	7%
All Practices	**62%**	**96%**	**88%**	**64%**

APPENDIX C: PEDIATRIC QUANTITATIVE FINDINGS

Exhibit C1: Pediatric Scores by State, Compared to the National Average

Measure	AR	IA	PA	Nat'l Avg.[xxxiv]
Preventive Care				
*Well-child visits in first 15 months: Zero visits**	5.9	0.09	3.1	2.2
Well-child visits in first 15 months: Six visits	42.9	70.9	27.4	60.2
Well-child visit in the third, fourth, fifth, and sixth years of life	64.7	68.1	69.7	71.9
Child and adolescent access to PCPs (all)	88.5	94.1	78.7	N/A
Adolescent well-care visits	N/R	N/R	50.1	
BMI assessment (all – 3 to 17 yrs)[xxxv]	1.2	0.2	2.8	37.3
Lead screening	N/R	N/R	74.8	66.2
Chronic Illness Care				
*Annual number of asthma patients (ages 2 through 20) with one or more asthma-related ER visits**	N/R	25.2	24.3	TBD
Appropriate medication for asthma (ages 5-20 years)	N/R	N/R	96.1	N/A
Annual A1c testing for patients with diabetes	71.6	N/R	74.9	N/A
Behavioral Health Care				
Developmental screening in first three years	N/R	8.3	32	43.9
Follow-up care for children prescribed ADHD medication: Initiation phase	15.9	N/R	27	38.1
Follow-up care for children prescribed ADHD medication: Continuation and maintenance phase	8.3	N/R	34	43.9
7-day follow-up after hospitalization for mental illness	5.7	71.9	N/R	44.6[xxxvi]
30-day follow-up following hospitalization for mental illness	15.4	84.3	N/R	63.8

ARKANSAS

Exhibit C2: Arkansas Pediatric Preventive Scores by Beneficiary Race/Ethnicity

	WCV First 15 Months: Zero Visits		WCV First 15 Months: Six or More Visits		WCV Ages 3-6		Child and Adolescent Access to PCPs (12 mos – 19 yrs)		BMI Assessment (3-17 yrs)	
	N	Score	N	Score	N	Score	N	Score	N	Score
African-American	309	6.2	1948	39.3	14409	67.1	72152	85.9	503	0.9
Hispanic /Latino	180	5.4	1562	47.3	9195	70.0	32932	89.2	281	1.1
Caucasian	603	5.5	4761	43.7	27978	61.5	147810	89.4	1174	0.9
Other	54	9.7	192	34.4	1175	60.2	5171	84.0	31	0.8
Unknown	90	7.6	499	42.0	4967	68.7	21058	91.2	771	4.3
Total	1236	5.9	8962	42.9	57724	64.7	279123	88.5	2760	1.2

Exhibit C3: Arkansas Pediatric Preventive Scores by Practice Size/Type

	WCV First 15 Months: Zero Visits		WCV First 15 Months: Six or More Visits		WCV Ages 3-6		Child and Adolescent Access to PCPs (12 mos – 19 yrs)		BMI Assessment (3-17 yrs)	
	N	Score	N	Score	N	Score	N	Score	N	Score
Solo	479	8.4	2171	37.9	16543	64.5	85340	90.2	727	1.0
2-4	159	4.7	1570	46.7	9970	65.9	48657	89.6	372	0.9
5-9	206	4.1	2117	42.2	12813	65.4	59826	91.0	784	1.6
10+	207	4.3	2584	54.3	12368	64.0	58800	87.6	531	1.1
FQHCs	102	12.8	197	24.8	2858	60.7	11863	68.4	64	0.7
RHCs	83	6.7	323	26.0	3172	65.6	14637	88.7	282	2.5
Total	1236	5.9	8962	42.9	57724	64.7	279123	88.5	2760	1.2

[xxxiv] National averages are based on 2010 Medicaid HMO data, as reported by NCQA
[xxxv] This measure is typically collected using a hybrid methodology of claims and electronic record review. Reported rates may be low due to inclusion of only claims-based data.
[xxxvi] National data include children and adults ages 6 years and older, while state-reported data are for ages 6 to 20 years.

Exhibit C4: Arkansas Pediatric Preventive Scores by Practice Characteristic

	WCV First 15 Months: Zero Visits		WCV First 15 Months: Six or More Visits		WCV Ages 3-6		Child and Adolescent Access to PCPs		BMI Assessment (3-17 years)	
	N	Score	N	Score	N	Score	N	Score	N	Score
Practice Affiliation										
Affiliated with a group	1116	5.9	8195	43.1	52531	64.7	252064	88.3	2562	1.2
Not affiliated with a group	120	6.3	767	40.4	5193	64.5	27059	90.3	198	0.9
Racial Composition of Patient Panel										
>50 Caucasian	700	5.8	5240	43.2	32177	63.5	165007	90.6	1522	1.1
>50% Non-Caucasian	536	6.1	3722	42.4	25547	66.2	114116	85.6	1238	1.3
Multi-Specialty										
A Multi-Specialty Practice	915	6.4	5654	39.8	39738	64.5	193019	87.6	1831	1.2
Not a Multi-Specialty Practice	321	4.8	3308	49.5	17986	65.1	86104	90.4	929	1.3
Total	1236	5.9	8962	42.9	57724	64.7	279123	88.5	2760	1.2

Exhibit C5: Arkansas Chronic and Behavioral Health Care Scores by Beneficiary Race/Ethnicity

	Annual A1C Testing for Patients with Diabetes		Follow-up Care for ADHD Medication: Initiation		Follow-up Care for ADHD Medication: C&M		7-Day Follow-up After Hosp. for MI		30-Day Follow-up After Hosp. for MI	
	N	Score	N	Score	N	Score	N	Score	N	Score
African-American	141	67.8	23	14.6	0	0.0	80	5.4	174	11.8
Hispanic /Latino	30	62.5	1	4.0	0	0.0	10	8.0	21	16.8
Caucasian	368	74.8	63	16.5	1	5.6	177	4.9	532	14.7
Other	11	73.3	3	30.0	0	0.0	2	1.8	17	15.5
Unknown	60	67.4	16	17.4	1	33.3	112	8.6	276	21.2
Total	610	71.6	106	15.9	2	8.3	381	5.7	1020	15.4

Exhibit C6: Arkansas Chronic and Behavioral Health Care Scores by Practice Size/Type

	Annual A1C Testing for Patients with Diabetes		Follow-up Care for ADHD Medication: Initiation		Follow-up Care for ADHD Medication: C&M		7-Day Follow-up After Hosp. for MI		30-Day Follow-up After Hosp. for MI	
	N	Score	N	Score	N	Score	N	Score	N	Score
Solo	178	65.9	27	13.8	0	0.0	118	5.1	326	14.1
2-4	111	66.9	25	21.0	0	0.0	77	6.0	201	15.7
5-9	135	81.3	29	17.9	1	16.7	71	6.6	208	19.3
10+	131	77.1	22	15.3	0	0.0	93	7.1	209	16.0
FQHCs	29	67.4	1	4.8	1	50.0	8	2.4	27	8.0
RHCs	26	70.3	2	8.0	0	0.0	14	4.4	49	15.5
Total	610	71.6	106	15.9	2	8.3	381	5.7	1020	15.4

Exhibit C7: Arkansas Chronic and Behavioral Health Care Scores by Practice Characteristic

	Annual A1C Testing for Patients with Diabetes		Follow-up Care for ADHD Medication: Initiation		Follow-up Care for ADHD Medication: C&M		7-Day Follow-up After Hosp. for MI		30-Day Follow-up After Hosp. for MI	
	N	Score	N	Score	N	Score	N	Score	N	Score
Practice Affiliation										
Affiliated with a group	561	71.9	93	15.8	2	10.0	353	6.0	936	16.0
Not affiliated with a group	49	68.1	13	16.9	0	0.0	28	3.5	84	10.6
Racial Composition of Patient Panel										
>50% Caucasian	393	73.7	51	13.9	0	0.0	217	5.5	624	15.8
>50% Non-Caucasian	217	68.0	55	18.3	2	20.0	164	6.1	396	14.8
Multi-Specialty										
A Multi-Specialty Practice	434	70.7	75	16.3	1	5.6	246	5.2	674	14.3
Not a Multi-Specialty Practice	176	73.9	31	14.9	1	16.7	135	7.0	346	18.0
Total	610	71.6	106	15.9	2	8.3	381	5.7	1020	15.4

IOWA

Exhibit C8: Iowa Pediatric Preventive Scores by Beneficiary Race/Ethnicity

	WCV First 15 Months: Zero Visits		WCV First 15 Months: Six or More Visits		WCV Ages 3-6		Child and Adolescent Access to PCPs (12 mos–19 yrs)		BMI Assessment (3 – 17 yrs)	
	N	Score	N	Score	N	Score	N	Score	N	Score
African-American	12	1.0	789	67.1	3117	71.7	11564	93.3	32	0.3
Hispanic /Latino	17	0.8	1502	71.5	5371	71.1	17969	93.0	50	0.3
Caucasian	64	1.0	4646	72.6	15132	67.7	62101	94.8	110	0.2
Other	0	0	156	71.2	539	71.5	1963	90.5	9	0.5
Unknown	19	0.7	1844	68.1	7044	65.3	44061	93.9	70	0.2
Total	112	0.9	8937	70.9	31203	68.1	137568	94.1	271	0.2

Exhibit C9: Iowa Pediatric Preventive Scores by Practice Size/Type

	WCV First 15 Months: Zero Visits		WCV First 15 Months: Six or More Visits		WCV Ages 3-6		Child and Adolescent Access to PCPs (12 mos–19 yrs)		BMI Assessment (3–17 yrs)	
	N	Score	N	Score	N	Score	N	Score	N	Score
Solo	14	1.3	717	67.6	3003	68.6	14633	97.7	24	0.2
2-4	9	0.6	1015	72.4	3635	71.5	15546	97.8	17	0.1
5-9	15	0.8	1323	69.3	4314	66.3	20680	96.3	9	0.1
10+	51	0.8	4426	73.3	14116	68.2	60553	93.7	192	0.4
FQHCs	5	0.5	667	67.4	3156	69.5	13330	93.0	24	0.2
RHCs	18	1.5	789	65.8	2979	64.9	12916	85.7	5	0.0
Total	112	0.9	70.9	70.9	31203	68.1	137568	94.1	271	0.2

Exhibit C10: Iowa Pediatric Chronic and Behavioral Health Scores by Beneficiary Race/Ethnicity

	Asthma Patients with Asthma-Related ER Visits		Developmental Screening in First Three Years of Life		7-Day Follow-up After Hosp. for MI		30-Day Follow-up After Hosp. for MI	
	N	Score	N	Score	N	Score	N	Score
African-American	482	37.2	224	6.7	44	69.8	52	82.5
Hispanic /Latino	303	26.2	201	3.3	37	69.8	45	84.9
Caucasian	1058	22.2	799	4.4	413	71.7	488	84.7
Other	43	28.1	17	2.8	12	92.3	12	92.3
Unknown	1004	24.6	349	4.3	562	72.0	656	84.0
Total	2890	25.2	1590	4.4	1068	71.9	1253	84.3

Exhibit C11: Iowa Pediatric Chronic and Behavioral Health Scores by Practice Size/Type

	Asthma Patients with Asthma-Related ER Visits		Developmental Screening in First Three Years of Life		7-Day Follow-up After Hosp. for MI		30-Day Follow-up After Hosp. for MI	
	N	Score	N	Score	N	Score	N	Score
Solo	267	20.9	253	8.4	118	66.7	146	82.5
2-4	247	20.5	243	6.2	129	73.3	152	86.4
5-9	386	23.7	138	2.5	151	69.3	181	83.0
10+	1438	27.4	804	4.7	475	73.9	544	84.6
FQHCs	355	33.8	67	2.1	80	63.0	102	80.3
RHCs	197	18.9	85	2.4	115	79.3	128	88.3
Total	2890	25.2	1590	4.4	1068	71.9	1253	84.3

Exhibit C12: Iowa Pediatric Chronic and Behavioral Health Scores by Practice Characteristic

	Asthma Patients with Asthma-Related ER Visits		Developmental Screening in First Three Years of Life		7-Day Follow-up After Hosp. for MI		30-Day Follow-up After Hosp. for MI	
	N	Score	N	Score	N	Score	N	Score
Racial Composition of Patient Panel								
>50% Caucasian	804	20.6	552	4.0	356	70.1	428	84.3
>50% Non-Caucasian	2086	27.6	1038	4.6	712	72.8	825	84.4
Total	2890	25.2	1590	4.4	1068	71.9	1253	84.3

PENNSYLVANIA

Exhibit C13: Pennsylvania Pediatric Preventive Care Scores by Beneficiary Race/Ethnicity

	WCV First 15 Months: Zero Visits		WCV First 15 Months: Six or More Visits		WCV Ages 3-6		Child and Adolescent Access to PCPs (12 mos – 19 yrs)		BMI Assessment (3-17 yrs)		Adolescent Well Care		Lead Screening in Children	
	N	Score	N	Score	N	Score	N	Score	N	Score	N	Score	N	Score
African-American	30	6.8	83	18.9	1440	64.4	6187	69.1	115	1.5	1850	46.4	446	75.6
Hispanic/ Latino	22	5.2	102	24.1	1783	69.9	6697	77.8	159	2.2	1688	53.3	487	73.0
Caucasian	172	2.7	1823	28.2	20213	70.3	87451	79.7	2657	2.9	23007	50.2	5777	74.9
Other	11	5.7	49	25.3	684	64.3	2792	74.1	86	2.8	693	47.9	144	52.7
Unknown	0	0	0	0	0	0	9	90.0	0	0	4	66.7	N/A	N/A
Total	236	3.1	2057	27.4	24120	69.7	103136	78.7	3017	2.8	27242	50.1	6918	74.8

Exhibit C14: Pennsylvania Pediatric Preventive Scores by Practice Size/Type

	WCV First 15 Months: Zero Visits		WCV First 15 Months: Six or More Visits		WCV Ages 3-6		Child and Adolescent Access to PCPs (12 mos–19 yrs)		BMI Assessment (3–17 yrs)		Adolescent Well Care		Lead Screening in Children	
	N	Score	N	Score	N	Score	N	Score	N	Score	N	Score	N	Score
Solo	64	4.8	360	27.1	4832	66.1	20797	76.3	186	0.8	5846	46.1	1286	74.0
2-4	64	2.1	904	29.5	9734	71.4	41390	82.9	793	1.9	10339	52.6	2726	74.4
5-9	62	3.8	446	27.1	5446	69.2	23691	80.0	330	1.3	5947	50.1	1647	79.4
10+	12	1.8	155	23.3	1923	71.5	7207	78.5	128	1.7	1549	49.6	579	72.8
FQHCs	19	4.9	72	18.6	1305	67.5	4909	65.4	45	0.7	1727	48.3	362	69.1
RHCs	14	3.3	120	28.0	1330	71.9	5142	67.9	1535	24.2	1834	52.1	318	71.0
Total	235	3.1	2057	27.4	24120	69.7	103136	78.7	3017	2.8	27242	50.1	6918	74.8

Exhibit C15: Pennsylvania Pediatric Preventive Care Scores by Practice Characteristic

	WCV First 15 Months: Zero Visits		WCV First 15 Months: Six or More Visits		WCV Ages 3-6		Child and Adolescent Access to PCPs (12 mos-19 yrs)		BMI Assessment (3-17 yrs)		Adolescent Well Care		Lead Screening in Children	
	N	Score	N	Score	N	Score	N	Score	N	Score	N	Score	N	Score
Practice Affiliation														
Affiliated with a group	136	3.0	1232	27.3	14441	69.6	61186	77.9	2651	4.1	16443	50.1	4038	73.5
Not affiliated with a group	99	3.3	825	27.5	9679	69.8	41950	79.8	366	0.8	10799	50.0	2880	76.8
Racial Composition of Patient Panel														
>50% Caucasian	180	2.6	1974	28.3	22209	71.0	95082	80.2	2894	3.0	24972	51.1	6342	75.4
>50% Non-Caucasian	55	10.1	83	15.2	1911	57.4	8133	64.0	123	1.2	24972	41.4	576	68.6
Total	235	3.1	2057	27.4	24120	69.7	103136	78.7	3017	2.8	27242	50.1	6918	74.8

Exhibit C16: Pennsylvania Pediatric Chronic and Behavioral Health Scores by Beneficiary Race/Ethnicity

	Asthma Patients with Asthma-Related ER Visits		Annual A1C Testing for Patients with Diabetes		Use of Appropriate Asthma Medication (5-20 yrs)		Developmental Screening in First Three Years of Life		Follow-Up for ADHD Medication: Initiation		Follow-Up for ADHD Medication: C&M	
	N	Score	N	Score	N	Score	N	Score	N	Score	N	Score
African-American	353	35.3	9	90.0	104	94.5	503	31.6	29	21.6	20	41.7
Hispanic /Latino	302	32.0	11	84.6	74	88.1	343	19.0	20	22.5	9	30.0
Caucasian	2283	22.4	259	74.2	992	9.07	6722	32.8	480	27.5	294	33.9
Other	95	28.8	7	70.0	49	96.1	213	28.7	21	41.2	9	45.0
Unknown	2	100	0	0	0	0	2	40.0	0	0	0	0
Total	3035	24.3	286	74.9	1219	96.1	7783	31.6	550	27.3	332	34.4

Exhibit C17: Pennsylvania Pediatric Chronic and Behavioral Health Scores by Practice Size/Type

	Asthma Patients with Asthma-Related ER Visits		Annual A1C Testing for Patients with Diabetes		Use of Appropriate Asthma Medication (5-20 yrs)		Developmental Screening in First Three Years of Life		Follow-Up for ADHD Medication: Initiation		Follow-Up for ADHD Medication: C&M	
	N	Score	N	Score	N	Score	N	Score	N	Score	N	Score
Solo	668	28.3	69	77.5	221	94.8	1241	27.1	116	27.6	72	34.1
2-4	1077	22.4	104	71.7	469	96.1	3688	37.1	243	31.7	148	41.7
5-9	666	22.2	67	74.4	317	96.9	1917	35.3	152	31.1	90	38.5
10+	315	32.9	19	76.0	101	95.0	437	21.2	23	17.2	15	25.4
FQHCs	168	24.6	13	86.7	63	98.4	155	11.3	3	3.2	3	6.5
RHCs	141	20.5	14	77.8	53	96.4	345	27.4	13	11.6	4	6.6
Total	3035	24.3	286	74.9	1219	96.1	7783	31.6	550	27.3	332	34.4

Exhibit C18: Pennsylvania Chronic and Behavioral Health Care Scores by Practice Characteristic

	Asthma Patients with Asthma-Related ER Visits		Annual A1C Testing for Patients with Diabetes		Use of Appropriate Asthma Medication (5-20 yrs)		Developmental Screening in First Three Years of Life		Follow-Up for ADHD Medication: Initiation		Follow-Up for ADHD Medication: C&M	
	N	Score	N	Score	N	Score	N	Score	N	Score	N	Score
Site Affiliation												
Affiliated with a group	1776	23.6	174	78.4	732	96.4	4386	29.9	299	25.0	178	31.2
Not affiliated with a group	1259	25.4	112	70.0	487	95.7	3397	34.1	251	30.5	154	39.0
Racial Composition of Patient Panel												
>50% Caucasian	2458	21.9	272	74.1	1102	95.9	7598	34.0	506	27.4	312	35.1
>50% Non-Caucasian	436	34.4	14	93.3	117	96.1	185	8.0	44	25.7	20	25.6
Total	3035	24.3	286	74.9	1219	96.1	7783	31.6	550	27.3	332	34.4

APPENDIX D: OBSTETRIC QUANTITATIVE FINDINGS

Exhibit D1: Obstetric Quality Scores by State, Compared to the National Average

Measure	AR	IA	PA	Nat'l Avg.[xxxvii]
Prenatal Care				
Frequency of ongoing prenatal care	N/A	91.7	32.0	61.1
Timeliness of prenatal care	N/A	76.0	32.5	83.7
Birth Outcomes				
Cesarean rate	29.7	26.9	27.9	N/A
Live births less than 2,500 grams	10.7	7.1	7.6	N/A
Age of delivered infants ≥ 37 weeks	N/R	86.7	N/R	N/A

ARKANSAS

Exhibit D2: Arkansas Obstetric Scores by Beneficiary Race/Ethnicity

	Cesarean Rate		Live Births Less than 2,500 Grams	
	N	Score	N	Score
African-American	541	30.9	744	13.9
Hispanic /Latino	154	24.8	174	7.5
Caucasian	1292	29.7	1039	8.8
Other	52	31.0	54	9.6
Unknown	58	34.7	42	10.7
Total	2097	29.7	2053	10.0

Exhibit D3: Arkansas Obstetric Scores by Practice Size/Type

	Cesarean Rate		Live Births Less than 2,500 Grams	
	N	Score	N	Score
Solo	811	28.4	786	9.9
2-3	454	34.9	278	7.6
4-9	669	30.3	479	7.8
10+	103	26.1	437	26.1
FQHC	3	30.0	6	23.1
RHC	57	19.4	67	6.4
Total	2097	29.7	2053	10.0

Exhibit D4: Arkansas Obstetric Scores by Practice Characteristic

	Cesarean Rate		Live Births Less than 2,500 Grams	
	N	Score	N	Score
Site Affiliation				
Affiliated with a group	1765	29.6	1693	9.8
Not affiliated with a group	332	30.2	360	11.4
Racial Composition of Patient Panel				
>50% Caucasian	1348	31.3	931	8.0
>50% Non-Caucasian	749	27.2	1122	12.7
Total	2097	29.7	2053	10.0

[xxxvii] National averages are based on 2010 Medicaid HMO data, as reported by NCQA

IOWA

Exhibit D5: Iowa Obstetric Scores by Beneficiary Race/Ethnicity

	Frequency of Prenatal Care		Timeliness of Prenatal Care		Cesarean Rate		Live Births Less than 2,500 Grams		Gestational Age of Infants ≥ 37 Weeks	
	N	Score	N	Score	N	Score	N	Score	N	Score
African-American	1173	87.2	942	67.8	232	28.9	144	10.3	1131	82.6
Hispanic /Latino	1743	87.1	1365	67.1	338	27.1	119	5.8	1732	86.7
Caucasian	9887	93.3	8537	79.5	1534	26.7	753	6.9	9200	87.3
Other	410	88.6	293	60.8	67	25.0	43	8.9	403	85.2
Total	13213	91.7	11137	76.0	2171	26.9	1059	7.1	117	86.7

Exhibit D6: Iowa Obstetric Scores by Practice Size/Type

	Frequency of Prenatal Care		Timeliness of Prenatal Care		Cesarean Rate		Live Births Less than 2,500 Grams		Gestational Age of Infants ≥ 37 Weeks	
	N	Score	N	Score	N	Score	N	Score	N	Score
Solo	1649	89.6	1594	77.9	303	26.6	112	5.4	1776	88.5
2-3	1871	93.7	1548	77.5	277	25.5	139	6.9	1636	84.5
4-9	5330	92.0	4434	76.5	886	27.8	368	6.3	5021	88.3
10+	4182	91.5	3396	73.9	657	26.0	425	9.1	3849	84.7
FQHC	116	87.9	99	73.9	31	39.7	10	7.5	117	88.6
RHC	65	85.5	66	85.7	17	39.5	5	6.3	67	89.3
Total	13213	91.7	11137	76.0	2171	26.9	1059	7.1	117	86.7

Exhibit D7: Iowa Obstetric Scores by Beneficiary Risk Factor

	Frequency of Prenatal Care		Timeliness of Prenatal Care		Cesarean Rate		Live Births Less than 2,500 Grams		Gestational Age of Infants ≥ 37 Weeks	
	N	Score	N	Score	N	Score	N	Score	N	Score
Weight Gain During Pregnancy Among Women with Normal Pre-Pregnancy Weight										
Less than Recommended	1156	90.2	933	71.5	115	17.3	202	15.4%	998	78.9
Recommended Range	1873	91.3	1548	75.2	205	18.9	145	7.0%	1745	87.0
More than Recommended	2513	92.5	2068	75.9	270	21.5	127	4.6%	2392	89.5
Tobacco Use										
Current Smoker	3246	90.7	2777	75.6	611	28.5	345	9.4	3052	86.1
Former Smoker	1706	93.7	1487	79.8	222	27.8	158	8.4	1590	87.5
Never Smoker	8227	91.7	6867	75.4	1330	26.2	550	6.0	7794	86.8
Diabetes										
Yes	888	94.0	751	77.8	226	38.1	59	6.1	775	81.9
No	12325	91.5	10386	75.9	1945	26.1	1000	7.2	11691	87.0
Hypertension										
Yes	953	94.7	784	76.2	143	35.8	183	17.6	749	74.0
No	12260	91.5	10353	76.0	2028	26.5	876	6.4	11717	87.7
Marital Status										
Married	4046	92.0	3562	80.2	832	26.3	264	5.9	3885	88.0
Not Married	9167	91.6	7575	74.2	1339	27.3	795	7.7	8581	86.1
Total	13213	91.7	11137	76.0	2171	26.9	1059	7.1	12466	86.7

PENNSYLVANIA

Exhibit D8: Pennsylvania Obstetric Scores by Beneficiary Race/Ethnicity

	Frequency of Prenatal Care		Timeliness of Prenatal Care		Cesarean Rate		Live Births Less than 2,500 Grams	
	N	Score	N	Score	N	Score	N	Score
African-American	46	28.4	36	22.2	16	27.1	16	9.9
Hispanic /Latino	50	28.4	52	29.5	19	31.1	6	3.4
Caucasian	1104	32.2	1134	33.1	350	27.8	264	7.7
Other	32	38.1	30	35.7	9	27.3	8	9.5
Total	1232	32.0	1252	32.5	394	27.9	294	7.6

Exhibit D9: Pennsylvania Obstetric Scores by Practice Size/Type

	Frequency of Prenatal Care		Timeliness of Prenatal Care		Cesarean Rate		Live Births Less than 2,500 Grams	
	N	Score	N	Score	N	Score	N	Score
Solo	126	41.6	121	39.9	30	26.8	19	6.3
2-3	230	30.2	231	30.3	83	28.3	57	7.5
4-9	519	36.1	502	34.9	146	27.5	115	8.0
10+	342	37.1	351	38.1	93	28.1	70	7.6
FQHC	14	4.3	37	11.4	32	26.2	21	6.5
RHC	1	1.0	10	9.8	10	38.5	12	11.8
Total	1232	32.0	1252	32.5	394	27.9	294	7.6

Exhibit D10: Pennsylvania Obstetric Scores by Practice Characteristic

	Frequency of Prenatal Care		Timeliness of Prenatal Care		Cesarean Rate		Live Births Less than 2,500 Grams	
	N	Score	N	Score	N	Score	N	Score
Site Affiliation								
Affiliated with a Group	949	30.7	955	30.9	314	27.3	240	7.8
Not Affiliated with a Group	283	37.3	297	39.2	80	30.2	54	7.1
Racial Composition of Patient Pan								
>50% Caucasian	1195	31.7	1223	32.5	383	27.7	289	7.7
>50% Non-Caucasian	37	42.5	29	33.3	11	33.3	5	5.7
Total	1232	32.0	1252	32.5	394	27.9	294	7.6

APPENDIX E: CHARACTERISTICS OF PRACTICES RESPONDING TO SURVEYS

Iowa

Most of the responding pediatric practices are exclusively pediatric; 30 percent are general family practice, or a combination of specialties (e.g., obstetric). Nearly all receive fee-for-service payments, with the exception of one clinic that receives direct payment from patients. Most children served by these practices are covered by commercial insurance (64 percent) or Medicaid (23 percent). All practices have patient panels that are majority-Caucasian, with African-American and Hispanic beneficiaries making up 8 percent and 7 percent of the patient panel, on average, respectively. Nearly all providers that work at the responding practices are Caucasian.

All responding obstetric practices are exclusively obstetric and gynecologic, with the exception of one general medicine/family practice. Across practices, fee-for-service payments are the most common (68 percent of payments received), followed by direct payments (25 percent) and capitated payments (5 percent). On average, half of patients served are covered by commercial insurance, and 27 percent by Medicaid. African-American and Hispanic individuals make up an average of 10 and 14 percent of the practices' patient panels, respectively; the majority of patients are Caucasian. Almost all providers at the responding obstetric practices are Caucasian.

Pennsylvania

Approximately 67 percent of the pediatric practices are exclusively pediatric, while the remaining are general practice/family medicine specialty. Practices receive a mix of payment including fee-for-service (72 percent), other forms (14.5 percent), direct payment from patients (11 percent), and capitated (3 percent). Across the 10 practices, 40 percent of patients are covered by private insurance, and 52 percent by Medicaid. The average racial/ethnic distribution of patients includes Caucasian (61 percent), Hispanic (13 percent), African-American (11 percent), and Asian (4 percent). Notably, half of the practices have a near-majority of non-White patients, including one for which Asian patients make up 45 percent of the patient panel. Across all practices, most providers are Caucasian; the largest proportion of non-Caucasian providers is at the aforementioned practice with the large Asian population.

All of the responding obstetric practices are exclusively obstetric practices. Across practices, fee-for-service payments are the most common type of payment (58 percent) followed by direct payments by patients (39 percent) and other forms (35 percent). On average, only 37 percent of patients served by the practices have commercial insurance, while 46 percent are enrolled in Medicaid. Across the practices, 55 percent of patients are Caucasian, 20 percent are African-American, and 14 percent are Hispanic. Asian, Native American, Native Hawaiian, and other racial/ethnic groups each make up less than 5 percent of the patient population. All but one of the practices have provider panels that are majority Caucasian; at the other practice, only 40 percent of providers are Caucasian, while 40 percent are African-American and 20 percent are Hispanic.

APPENDIX F: PRACTICE SURVEY RESULTS

Survey Results: Iowa

Exhibit F1: Care and Access Behaviors Reported by Pediatric and Obstetric Practices: Iowa

Behavior	Pediatric Practices	Obstetric Practices
Access		
Same-day appointments.*	93%	100%
Phone number for patients with urgent needs to call during off-hours.*	93%	100%
Internet appointment-scheduling.*	14%	9%
Guidelines for # of hours between check-in and seeing a provider.*	71%	45%
Guidelines for number of days a patient must wait for a non-urgent appointment.*	64%	45%
Offer/refer patients to transportation services, if needed for appointment.*	64%	36%
Patient and Family Engagement/Care Coordination		
Discuss with the parent/caregiver/ patient places for care when a child needs a referral.*	100%	100%
Help parents/caregivers/patients make a referral appointment.*	100%	100%
Ask for patient/family/caregiver input when planning treatment/care.*	100%	100%
Cultural Competency		
Offer translation and interpretation services for patients.*	71%	55%
Providers and/or administrative staff receive cultural competency training.	21%	27%
Conduct assessments of patient health literacy or general literacy.	14%	36%
If needed, take into account families' special beliefs about health care or use of alternative medicine.*	100%	72%
Track the race/ethnicity and/or language preference of patients using either paper or electronic records.	86%	64%
Information and Tracking Systems		
Medical records/information system that consists of paper only (no EMR).	7%	18%
Medical records/information system that partially (not fully) uses an EMR.	43%	27%
Medical records/information system that uses *only* an EMR.	50%	55%
Guideline-based reminders (paper or electronic) for services a patient should receive when being seen.	86%	82%
System outside paper medical chart to provide alerts about clinically important abnormal test results to doctors when received.	93%	72%
System outside paper medical chart to track critical referrals until practice gets consultation report.	65%	63%
Chronic Disease Management		
Registry of patients with a particular chronic condition, with associated clinical data for each patient.	50%	19%
Use flow sheets during visits with patients with a chronic condition.	71%	N/A
Use checklists of tests or interventions needed for prevention or monitoring of chronic conditions.	57%	
Use questionnaire or assessment tool to assess patient symptoms, interest in changing risk factors, or self-care.	64%	
Designated primary care teams that collaborate in the care of a defined group of patients.	21%	
Use evidence-based standards of care (e.g., clinical practice guidelines).	71%	
Do pre-visit planning (e.g., by a nurse or physician).	57%	
Do after-visit follow-up.	64%	
Follow up on missed appointments.	93%	
Provide health education materials.	100%	
Performance Monitoring and Quality Improvement		
Formal process for measuring performance of individual physicians or for the practice site.	64%	18%
Provide data to individual physicians on their quality of (or care across practice) for patients with specific chronic conditions.	50%	18%
Formal quality improvement activities or quality improvement methodology (e.g.,	29%	18%

Behavior	Pediatric Practices	Obstetric Practices
PDSA or Lean).		
Collect at least one type of quality measure (e.g., Meaningful Use, HEDIS, CAHPS).	86%	64%
Simulations or drills to prepare for obstetric emergencies, such as shoulder dystocias.	N/A	27%
Standardized protocols or checklists, (e.g., those for the oxytocin bundle).		45%
Rapid Response Team to intervene with deteriorating patients during delivery.		36%

*The response "always" and the response "sometimes" were treated equally in calculating the rate for this measure.

Exhibit F2: Reported Challenges to Delivering Pediatric Behavioral Health Care Services: Iowa

Barriers to Behavioral Health Care	Percent of Practices Indicating Barrier
Perceived lack of available behavioral health providers to refer patients to.	62%
Lack of para-professional staff (e.g., care managers, social workers) on-site to provide support for children and their families.	36%
Lack of coordinated communication with behavioral health providers for follow-up after a referred visit.	36%
Constraints related to payment or billing that prevent proper screening, assessment, or referral to behavioral health services.	27%

Exhibit F3: Identified Areas for Practice Improvement and Barriers to Change among Pediatric and Obstetric Practices: Iowa

Identified Area for Improvement	Barriers to Change
Pediatric	
Technological	
▪ Implementation of electronic medical records (EMRs) to facilitate clinical guideline integration within the EMR and use of electronic prescriptions.	▪ Time. ▪ EMR limitations specific to vendor and general operability.
▪ Development of patient portals.	▪ Creating client-friendly software.
Workflow	
▪ Upgrade telephone system. ▪ Improve front-desk efficiency.	▪ Slow computer systems. ▪ Lack of integration of administrative data with the EMR.
▪ Too much paperwork.	▪ Governmental regulations and interference.
Patient Engagement and Care	
▪ High rates of missed appointments and lack of follow-up, particularly for well-child visits. ▪ Enhanced care management for patients with chronic conditions.	▪ Lack of patient/family/caregiver compliance. ▪ Inability to track information on patients. ▪ Financial inefficiency for providers to spend time on patient education.
Workforce	
▪ More providers. ▪ Better coordination across internal and external providers. ▪ Increased collaboration across providers within and outside the clinical care system.	▪ State clinic salary for providers not able to compete with community health centers. ▪ Fragmented care across practice sites.
Services	
▪ Behavioral health screening and linkages to community-based services. ▪ Availability of interpreters and translators. ▪ Increased reimbursement for certain services, such as weight counseling.	▪ Lack of reimbursement. ▪ Insurance does not cover dietician-led nutritional counseling.
Obstetric	

Technological	
▪ Better use of the EMR to facilitate: ▪ Patient portal to increase patient access to appointment scheduling, lab results. ▪ Patient resources for health education. ▪ Clinical event management. ▪ Enhanced antepartum records.	▪ Time. ▪ Financial. ▪ Training patients to use the technology (e.g., for scheduling).
Workforce	
▪ More providers to facilitate: ▪ A more efficient experience for patients. ▪ Wider skill sets across providers, including ER experience.	▪ Recruiting providers to small town. ▪ Busy, outside lives of staff. ▪ Financial.
▪ Improving quality of staff communication with one other and with patients.	▪ Lack of customer-service orientation. ▪ Busy, outside lives of staff

Exhibit F4: Supports Received and Requested by Pediatric and Obstetric Practices: Iowa

Current Support Received	Type of Support Requested	Recommendations for Sources of Support
Pediatric		
▪ Financial incentives from state Medicaid agency or contracted health plans for: ▪ Implementation of new technology (43%); ▪ Improving patient access, care processes, or outcomes; or participation in QI programs (14%); or ▪ Funding or support through government or philanthropic programs for quality improvement (15%).	▪ Technological (69%). ▪ Financial (62%). ▪ Educational (31%). ▪ Practice coaching (23%). ▪ Other (8%) (e.g., insurance plan reimbursement of essential services).	▪ Medicaid (69%). ▪ Health plans (38%). ▪ Regulators (23%). ▪ Parent organizations (15%). ▪ Other purchasers (e.g., employers, Medicare) (15%). ▪ Quality Improvement Organizations (15%).
Obstetric		
▪ Financial incentives from state Medicaid agency or contracted health plans for: ▪ Implementation of new technology (27%); ▪ Improving patient access, care processes, or outcomes; or ▪ Participation in QI programs (9%). ▪ Funding or support through government or philanthropic programs for quality improvement (9%). ▪ Participation in maternal or perinatal quality collaboratives (18%).	▪ Financial (46%). ▪ Technological (18%). ▪ Educational (18%). ▪ Practice coaching (9%).	▪ Parent organizations (50%). ▪ Medicaid (38%). ▪ Other purchasers (e.g., employers, Medicare) (25%). ▪ Quality Improvement Organizations (25%). ▪ Other (25%) ▪ Practice owners. ▪ Software vendors.

Survey Results: Pennsylvania

Exhibit F5: Care and Access Behaviors Reported by Pediatric and Obstetric Practices: Pennsylvania

Behavior	Pediatric Practices	Obstetric Practices
Access		
Same-day appointments.*	100%	100%
Phone number for patients with urgent needs to call during off-hours.*	100%	100%
Internet appointment-scheduling.*	38%	0%
Guidelines for # of hours between check-in and seeing a provider.*	88%	75%
Guidelines (always or sometimes) for number of days a patient must wait for a non-urgent appointment.*	81%	75%
Offer/refer patients to transportation services, if needed for appointment.*	100%	88%
Patient and Family Engagement/Care Coordination		
Discuss with the parent/caregiver/ patient places for care when a child needs a referral.*	100%	100%
Help parents/caregivers/patients make a referral appointment.*	100%	100%
Ask for patient/family/caregiver input when planning treatment/care.*	100%	100%

Behavior	Pediatric Practices	Obstetric Practices
Cultural Competency		
Offer translation and interpretation services for patients.*	94%	88%
Providers and/or administrative staff receive cultural competency training.	56%	50%
Conduct assessments of patient health literacy or general literacy.	38%	50%
If needed, take into account families' special beliefs about health care or use of alternative medicine.*	87%	75%
Track race/ethnicity and/or language preference of patients using either paper or electronic records.	88%	75%
Information and Tracking Systems		
Medical records/information system that consists of paper only (no EMR).	25%	25%
Medical records/information system that partially (not fully) uses an EMR.	25%	13%
Medical records/information system that uses *only* an EMR.	50%	63%
Guideline-based reminders (paper or electronic) for services a patient should receive when being seen.	63%	88%
System outside paper medical chart to provide alerts about clinically important abnormal test results to doctors when received.	94%	100%
System outside paper medical chart to track critical referrals until practice gets consultation report.	81%	100%
Chronic Disease Management		
Registry of patients with a particular chronic condition, with associated clinical data for each patient.	75%	63%
Flow sheets during visits with patients with a chronic condition.	81%	N/A
Checklists of tests or interventions needed for prevention or monitoring of chronic conditions.	88%	
Questionnaire or assessment tool to assess patient symptoms, interest in changing risk factors, or self-care.	81%	
Designated primary care teams that collaborate in the care of a defined group of patients.	63%	
Evidence-based standards of care.	81%	
Pre-visit planning.	69%	
After-visit follow-up.	56%	
Follow up on missed appointments.	94%	
Provide health education materials.	100%	
Performance Monitoring and Quality Improvement		
Formal process for measuring performance of individual physicians or for the practice site.	50%	63%
Provide data to individual physicians on their quality of (or care across practice) for patients with specific chronic conditions.	63%	13%
Formal quality improvement activities or quality improvement methodology (e.g., PDSA or Lean).	44%	25%
Collect at least one type of quality measure (e.g., Meaningful Use, HEDIS, CAHPS).	100%	63%
Simulations or drills to prepare for obstetric emergencies.	N/A	50%
Standardized protocols or checklists, (e.g., those for the oxytocin bundle).		63%
Rapid Response Team to intervene with deteriorating patients during delivery.		63%

*The response "always" and the response "sometimes" were treated equally in calculating the rate for this measure.

Exhibit F6: Reported Challenges to Delivering Pediatric Behavioral Health Care Services: Pennsylvania

Barriers to Behavioral Health Care[xxxviii]	Practices Identifying Barrier
Perceived lack of available behavioral health providers to refer patients to	75%
Lack of para-professional staff (e.g., care managers, social workers) on-site to provide support for children and their families	38%
Lack of coordinated communication with behavioral health providers for follow-up after a referred visit	25%
Constraints related to payment or billing that prevent proper screening, assessment, or referral to behavioral health services	31%

Exhibit F7: Identified Areas for Practice Improvement and Barriers to Change among Pediatric and Obstetric Practices: Pennsylvania

Identified Area for Improvement	Barrier(s) to Change
Pediatric	
Technology	
▪ Installing an EHR.	▪ Too expensive for small, independent practices.
▪ Patient portal to facilitate communication, e.g. texting/emailing of appointment reminders.	▪ Resources to subscribe to portal that can link with current practice management system. ▪ Wait time for EHR upgrade to support portal. ▪ Method to track progress.
▪ Creation of registry functions with pre-visit planning and post-visit follow-up.	▪ Too expensive for small, independent practices. ▪ Lack of support from leadership to roll out dashboard and registry functions in HER
Quality Improvement	
▪ Dashboard function to assess individual provider quality of care, with comparison to peers and regular feedback.	▪ Lack of interest among nursing staff ("we've always done it this way, why change?").
▪ Improving chronic care management.	▪ Patient non-compliance.
▪ Reducing patient wait-time. ▪ Increasing patient face time. ▪ Increasing patient referral compliance.	▪ High patient volumes/office space issues. ▪ Low availability of specialists.
Workforce	

▪ Need more providers to:
  ▪ Follow up on referrals or for missed appointments.
  ▪ Provide better patient education.
▪ Providers not able to communicate effectively with families/caregivers, esp. those who miss appointments.
	▪ Roster filled with “sick calls” all day; not enough time to enhance care for non-urgent patients.
	▪ Not enough time to train staff.

Supportive Services	

▪ Need more providers to:
  ▪ Follow up on referrals or for missed appointments.
  ▪ Provide better patient education.
	▪ Roster filled with “sick calls”; not enough time to enhance care for non-urgent patients.
	▪ Not enough time to train staff.

▪ Translation and interpretation services. ▪ Transportation.	▪ Financial constraints ▪ Lack of clear instructions for patient and family on transportation services; no penalties for “no-shows” by state insurance carrier.

Obstetric	
Technological	
▪ Transition from paper record to EMR. ▪ Upgraded practice management system to align with future EMR interface.	▪ Number of obstetric charts that need to reach delivery before conversion into the EMR. ▪ Financial.
▪ Upgraded telephone system. ▪ Expanded use of social media.	▪ Financial.
Workforce	

[xxxviii] Approximately 56 percent of pediatric practices noted more than one of the barriers.

▪ Anesthesiologist on-site. ▪ Unpredictability in provider schedules.	▪ Financial. ▪ Provider time off or other unanticipated exceptions.
Supportive Services	
▪ Better equipment availability in hospital delivery department.	▪ Financial.
▪ Patient access to public transportation.	▪ Organizational partner to run transportation.
Patient Engagement	
▪ Patient communication.	▪ Patients lack responsibility or unable to provide correct information.
Regulatory/Delivery System	
▪ A stable drug formulary.	▪ Medicaid practice policies.
▪ Insurance-dictated medical necessity criteria.	▪ General insurance intrusion on provider care.

Exhibit F8: Supports Received and Requested by Pediatric and Obstetric Practices: Pennsylvania

Most Commonly Requested Types of Support	Types of Support Currently Received	Recommendations for Sources of Support
Pediatric		
▪ Practices receive financial incentives from the state Medicaid agency or contracted health plans for: ▪ Implementing new technology (38%); ▪ Improving patient outcomes (15%), care processes (23%), access (23%); ▪ Participating in QI programs (23%). ▪ Practices (17%) receive some funding or support through government or philanthropic programs for QI.	▪ Financial (50%). ▪ Technological (38%). ▪ Educational (25%). ▪ Practice coaching (13%). .	▪ Health plans (58%). ▪ Medicaid (42%). ▪ Parent organization (33%). ▪ Other purchasers (e.g., employers, Medicare) (25%). ▪ Regulators (25%). ▪ QI Organizations (17%). ▪ Other (17%) – better reimbursement base and more employee involvement.
Obstetric		
▪ Practices (14%) receive financial incentives from the state Medicaid agency or contracted health plans for implementing technology; improving patient outcomes, care processes, and access; or participating in QI programs. ▪ No practices receive QI support from other gov't/philanthropic programs. ▪ Practices (29%) participate in maternal or perinatal quality collaboratives.	▪ Financial (57%). ▪ Technological (43%). ▪ Educational (14%). ▪ Practice coaching (14%).	▪ Medicaid (57%). ▪ Health plans (57%). ▪ Medical societies (43%). ▪ Other purchasers (e.g., employers, Medicare) (14%). ▪ Regulators (14%). ▪ QI Organizations (14%). ▪ Software vendors (14%). ▪ Patients themselves (14%).

Endnotes

[1] At the time of the study, the most current data available to states were based on 2010 utilization.
[2] Center for Medicaid and CHIP Services, Centers for Medicare & Medicaid Services. "Initial Core Set of Children's Health Care Quality Measures: Technical Specifications and Resource Manual for Federal Fiscal Year 2012 Reporting." November 2012. Available at: http://medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Quality-of-Care/Downloads/InitialCoreSetResourceManual.pdf.
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[4] Ibid., calculated based on percent of total federal outlays.
[5] Congressional Budget Office and Joint Committee on Taxation. *Estimates for the Insurance Coverage Provisions of the Affordable Care Act Updated for the Recent Supreme Court Decision.* July 2012.
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[10] *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*, Institute of Medicine, 2002.
[11] Kaiser Commission on Medicaid and the Uninsured/Urban Institute estimates of MSIS, FY 2009
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[17] For more information, visit: http://mchb.hrsa.gov/programs/homevisiting/
[18] For more information, visit: http://innovation.cms.gov/initiatives/ state-innovations/.
[19] For more information, visit: http://www.cms.gov/apps/media/press/factsheet.asp?Counter=4219&intNumPerPage=10&checkDate=&checkKey=&srchType=1&numDays=3500&srchOpt=0&srchData=&keywordType=All&chkNewsType=6&intPage=&showAll=&pYear=&year=&desc=&cboOrder=date.
[20] CHIPRA Quality Demonstration Grant. Accessible at: http://www.dpw.state.pa.us/provider/healthcaremedicalassistance/chipraqualitydemonstrationgrant/chiprabackground/index.htm
[21] Available at: http://www.medicaid.gov/mltss/docs/CHIPRACoreSetTechManual-1.pdf
[22] Questions were created based on independent research as well as adapted from the *Primary Care Assessment Tool*, developed by Barbara Starfield and colleagues, and the *Physician Practice Connections® Tool – Research Version*, developed by the National Committee for Quality Assurance (NCQA). Accessible at: www.jhsph.edu/pcpc/pca_tools.html