

# Understanding Medicaid Utilization for Children in New York State

## *A Data Brief*

July 2016

**The Medicaid Institute at United Hospital Fund is working to improve the Medicaid program in New York by providing information and analysis and developing a shared vision for change.**

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**Funded by the New York State  
Department of Health**

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Despite their typically lower costs and utilization, children are an important focus for New York's Medicaid program. They make up 37 percent of enrollees in any given month, and they face a disproportionate burden of certain risks and diseases compared to their non-Medicaid counterparts.

To support emerging State efforts around value-based payment for child and adolescent populations, this brief highlights key findings on current Medicaid spending and utilization for children. The analysis compares children and adults, and then identifies multiple subpopulations of children with higher levels of need. Accompanying the brief is a chartbook that depicts in more detail the underlying data analysis. The brief and chartbook are part of a larger body of work at United Hospital Fund focused on improving child health.

Unless otherwise noted, source: Salient NYS Medicaid System. Includes payment cycles through payment cycle #2001; access dates March 29, 2016 and April 20, 2016.

## Introduction

Medicaid in New York is a vital safety net for many low-income children and adolescents. The program covered more than 2 million members under the age of 21 as of July 2014, a full 43.5 percent of the total estimated population of children and adolescents in New York State.<sup>1</sup> Children in the New York Medicaid program receive a full range of benefits, including early and periodic screening, diagnosis, and treatment (EPSDT), hospital visits, clinic services, and dental and vision services. These services are provided without copays, enabling broad access not only to treatment of acute illness, but also to prevention of future disease development.<sup>2</sup> The access to health care services afforded by Medicaid results in improved childhood health, which in turn has positive effects on longer-term educational attainment and socioeconomic status.<sup>3</sup>

While children make up a large portion of Medicaid program enrollment, they account for a relatively minor percentage of total Medicaid cost compared with their adult counterparts. As New York continues to transform the Medicaid program (expanding managed care, enhancing care management for special populations, reforming the delivery system around primary and preventive care, and moving toward value-based payment), the focus of reform has primarily been high-cost populations with chronic conditions. While some children do fall into that category, Medicaid members under age 21 generally do not have the conditions and hospital utilization rates that are the main target of current delivery system and payment reform efforts. Despite their typically lower costs and utilization, children are an important focus for Medicaid. They make up 37 percent of enrollees in any given month,<sup>4</sup> they face a disproportionate burden of certain risks and diseases compared to their non-Medicaid counterparts, and an extensive body of evidence demonstrates that risks to development not addressed in childhood can lead to heightened risk of chronic disease throughout adulthood.

To support emerging State efforts around value-based payment (VBP) for child and adolescent populations,<sup>5</sup> this brief highlights key findings on current Medicaid spending and utilization for children. The analysis compares children and adults, and then identifies multiple subpopulations of children with higher levels of need. Accompanying the brief is a chartbook that depicts in more detail the underlying data analysis. The brief and chartbook are part of a larger body of work at the United Hospital Fund that includes reports on measuring child health in the context of payment reform and

potential payment models that take into account the unique needs of children and adolescents.<sup>6</sup>

## Methodology

Except where otherwise noted, the source of data in this brief was the Salient NYS Medicaid System, which includes all fee-for-service claims and managed care encounters for the entire Medicaid population. Analysis was conducted on 2014 data, the last full year available. Only individuals continuously enrolled (CE) in Medicaid were included, and claims and encounters associated with childbirth were generally excluded, except where noted. Restricting the analysis to CE children allowed for a stable cohort that provides a broad view of the annual demographics, service utilization, and expenditures for children in the program for an entire year. Expenditure data presented here is limited by the fact that most children in New York are enrolled in managed care, and absent expenditures for services carved out of the managed care benefit (e.g., behavioral health services), many children's only expenditures are managed care capitation payments. More detailed figures and a full methodology is available at the end of the accompanying chartbook.

## Compared to adults, children are a low-cost, low-utilization population and have more contact with primary care

Children enrolled in Medicaid have health needs that can be quite different from their adult counterparts. This is demonstrated in the different expenditure and utilization patterns of these two populations. In particular, children have much lower expenditures. On average, children (under age 21) who were continuously enrolled (CE) in 2014 had spending of \$4,253; CE adults (age 21–64) averaged \$11,154 in spending that year (see Figure 1 and accompanying chartbook).

**Figure 1. Continuously Enrolled Children and Adults, Enrollment and Expenditures, 2014**

	CE Children	CE Adults
Enrollees	1,767,435	2,133,905
Total Expenditures	\$7.52 billion	\$23.8 billion

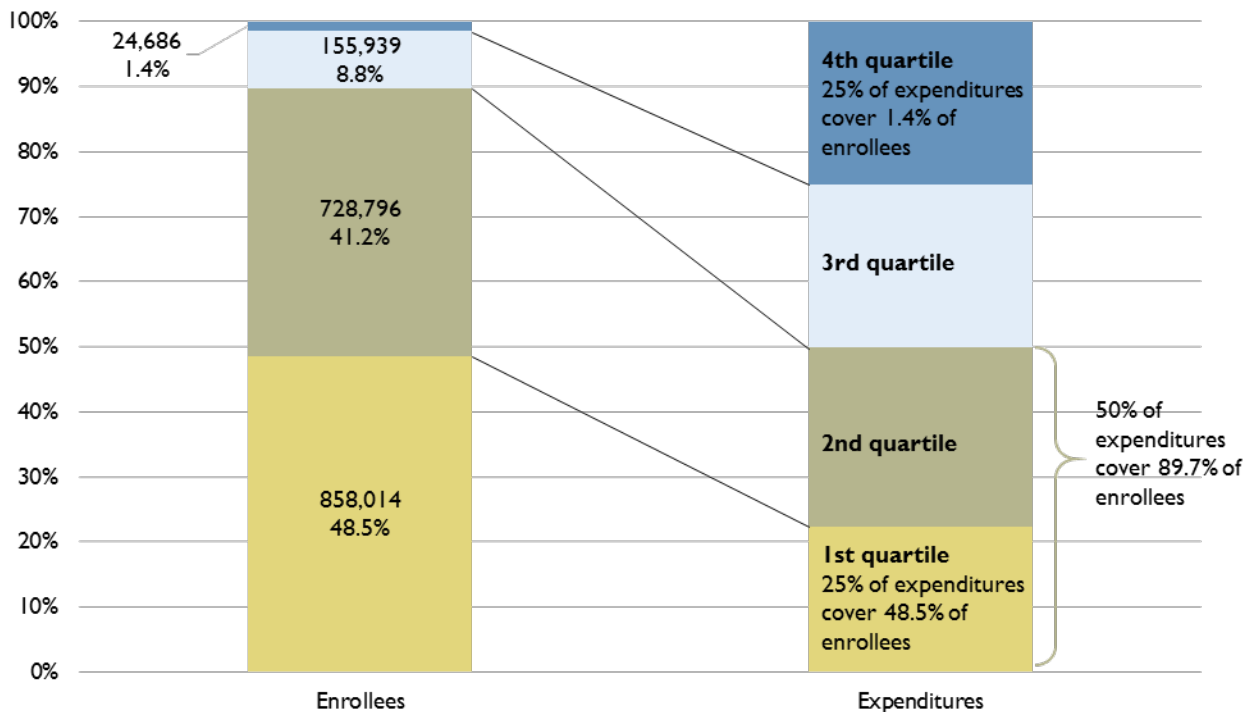
Utilization patterns also differ noticeably. Adults have significantly higher rates of inpatient admission and much longer inpatient stays. However, a higher percentage of children than adults had at least one

outpatient evaluation and management (E/M) or preventive care claim. In addition, diagnosis patterns of children and adults differ dramatically. Children had much lower rates of chronic conditions in 2014 and, as a result, fewer inpatient visits due to chronic conditions. Respiratory system diseases such as asthma, on the other hand, occurred much more frequently in children than adults, driving a much higher volume of health care service use.

## A small percentage of children account for a large portion of overall expenditures

A mere 10.2 percent of children account for half of total Medicaid expenditures for the entire CE group. **The remaining 90 percent of children averaged only \$2,400 in annual expenditures** in 2014 (see Figure 2). As the chartbook further shows, most of the 185,625 CE children who account for half of expenditures are children with complex conditions and physical and developmental disabilities (see additional section below). Most of the 1.58 million low-cost children have few if any expenditures beyond the average \$2,229 capitation payment to their managed care organization.

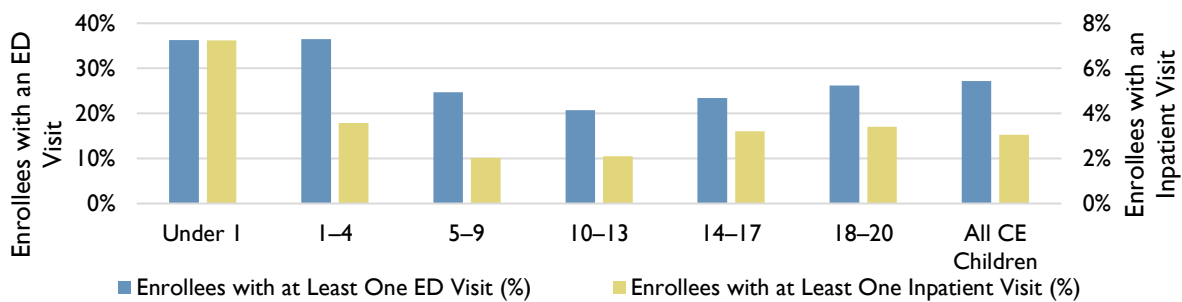
**Figure 2. Continuously Enrolled Children, by Quartiles of Expenditures, 2014**



## Children’s utilization varies by age and race

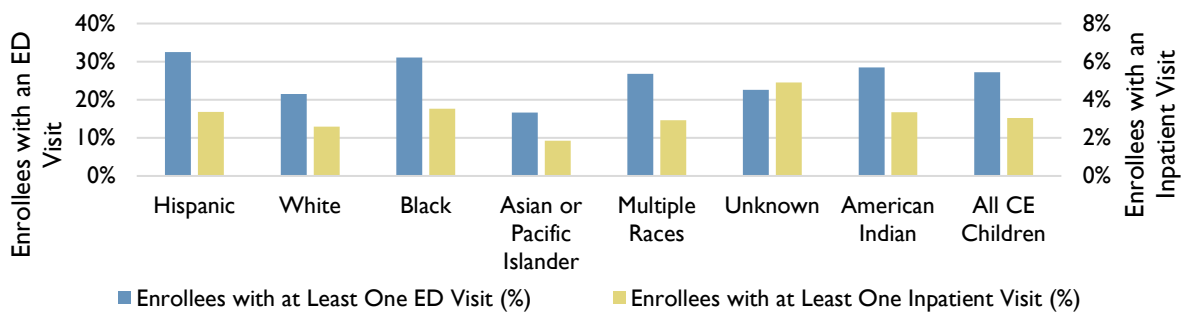
As shown in Figure 3, children under age 4 and adolescents age 18–20 have higher rates of inpatient and emergency department (ED) usage than children between those age groups. ED visit rates are high for children until age 4 and then fall, reaching their lowest for children age 10–13 before rising again in children 14–17 and 18–20. Inpatient visit rates show a similar pattern except that they begin falling after age 1 and reach their lowest point in children age 5–9.

**Figure 3. CE Children with at Least One Inpatient or ED Visit, by Age Group, 2014**



Outpatient E/M and preventive care visits, however, show a different pattern. Children under 4 have the highest visit rates, and those rates decrease steadily as children age. Raw numbers of visits, however, mask the differences in the type of such visits, as the youngest children have many more well-child visits in the first 18 months of life than older children do.

**Figure 4. CE Children with at Least One Inpatient or ED Visit, by Race, 2014**

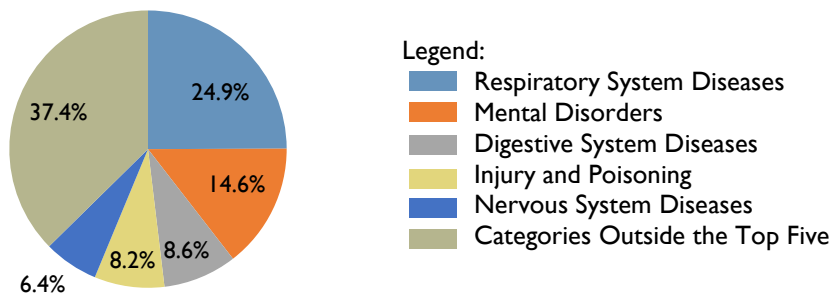


While age is a major driver of variation among children, race also affects utilization patterns. Overall, black and Hispanic children have much higher inpatient and ED utilization rates than white and Asian or Pacific Islander children (see Figure 4; note that this figure excludes the small number of American Indian children and the children with Unknown Race, which often indicates missing information. See the chartbook for more complete data). These disparities, however, do not necessarily translate to differences in expenditures, likely due to the fact that a large portion of these expenditures are included in managed care capitation payments.

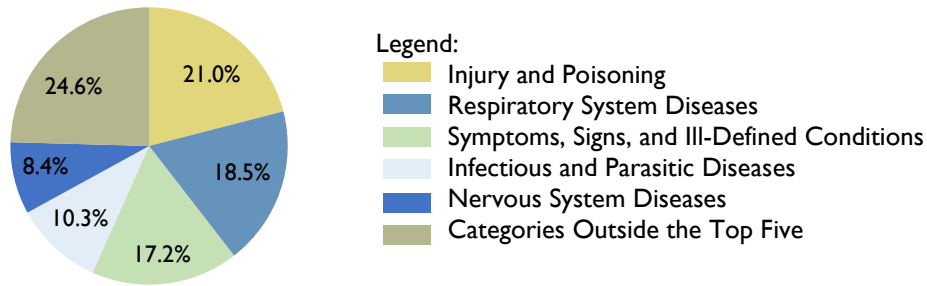
### Children’s utilization varies by diagnosis and geography

The diagnosis patterns of both inpatient and emergency department visits show how the drivers of utilization change as children age. Figures 5 and 6 show the most common diagnoses for inpatient and ED visits. The chartbook further expands on the age differences focusing on children ages 1–4 and 18–20. Children under age 4 have inpatient and ED utilization driven by respiratory system diseases, including asthma, which begin to drop off after that point. Gastroenteritis and developmental disabilities also disproportionately affect children in this younger age group. Teenagers and older adolescents have a much higher portion of inpatient utilization driven by behavioral health conditions.

**Figure 5. Top Diagnoses of Inpatient Visits, All CE Children 2014**



**Figure 6. Top Diagnoses of ED Visits, All CE Children 2014**



Looking specifically at these diagnoses driving inpatient and ED utilization is also possible through the lens of the Agency for Healthcare Research and Quality’s (AHRQ) Pediatric Quality Indicators (PDIs), which assess quality of care for ambulatory-sensitive conditions. Asthma, diabetes and gastroenteritis are three conditions included in the PDIs, for which effective outpatient care and early intervention can potentially prevent the need for hospitalization, according to AHRQ.<sup>7</sup> Separate literature suggests the same may be true of behavioral health conditions, especially with early screening and treatment.<sup>8</sup>

**Figure 7. Utilization of Select Subcohorts of CE Children**

	CE Children	CE Children with a Primary Diagnosis of...			
		Asthma	Diabetes	Gastroenteritis	Behavioral Health Condition
Number of Enrollees (% of Total CE Children)	1,767,435 (100.0%)	138,936 (7.9%)	10,850 (0.6%)	82,886 (4.7%)	219,477 (12.4%)
Enrollees with an Inpatient Visit (%)	3.1%	9.6%	13.2%	7.0%	7.8%
Enrollees with an ED Visit (%)	27.2%	49.0%	37.6%	52.8%	38.7%
Enrollees with an Outpatient E/M or Preventive Care Visit (%)	84.7%	97.1%	97.2%	97.6%	90.1%

Figure 7 shows that children with these conditions as a primary diagnosis on any claim (not necessarily the hospitalization claim) do utilize inpatient and ED services much more frequently than the whole population of CE children. As the chartbook additionally shows, there is substantial geographic variation in PDIs for hospitalizations directly associated with these diagnoses. Risk-adjusted hospital discharge rates for children with asthma-related

hospitalizations are much higher in New York City, and somewhat higher for gastroenteritis in the city and surrounding counties.

## SSI beneficiaries and children with developmental disabilities, behavioral health conditions, or complex chronic conditions have very high expenditures and utilization

As noted above, the vast majority of children have very low expenditures but there is a small group of children with more significant health care needs whose utilization and expenditures are noticeably higher. While some of the highest-expenditure children had acute conditions that required extensive service use in 2014 but would likely not persist in successive years, there are also some with longer-term conditions that are likely to require sustained service use year after year.<sup>9</sup> Three (often overlapping) groups in particular may be more likely to have consistently high expenditures: individuals eligible for Supplemental Security Income (SSI) due to a disability, individuals with a developmental disability (DD), and individuals with pediatric complex chronic conditions. When these conditions intersect, expenditures rise even higher (see the chartbook for details on the overlap among these groups). In total, individuals with at least one of these three characteristics accounted for 14.4 percent of the number of CE children but 44 percent of CE children’s expenditures, for an average of \$13,006 per person in 2014.

As Figure 8 shows, individuals with diagnoses commonly associated with these groups have increased utilization of both inpatient and ED services compared to the broader population of children. For pediatric complex chronic conditions, the average number of inpatient visits per enrollee is nearly seven times the rate for CE children as a whole. Children with a behavioral health condition have 1.65 times the average rate of ED visits per enrollee than the entirety of the CE population.

**Figure 8. Utilization of CE Children with Specific Primary Diagnoses**

	<b>Enrollees with an inpatient visit (%)</b>	<b>Average inpatient visits per enrollee</b>	<b>Enrollees with an ED visit (%)</b>	<b>Average ED visits per enrollee</b>
All CE Children	3.05%	0.072	27.21%	0.479
Behavioral Health Condition	7.79%	0.181	38.74%	0.789
Developmental Disability	6.75%	0.181	33.44%	0.657
Complex Chronic Condition	15.24%	0.485	36.81%	0.792



Within these groups are a range of conditions. Children with developmental disabilities, for example, include children on the autism spectrum, those with learning delays and intellectual disabilities, children with language disorders, and many other conditions. The specific diagnosis and its severity have a large impact on utilization and expenditures. Early intervention and access to appropriate specialists and home- and community-based services can have a large impact on the ongoing health of children with physical or developmental disabilities or complex chronic conditions.<sup>10</sup>

## **Leveraging quality and utilization data to improve the health of children on Medicaid**

Compared to other states, New York performs well on the Child Core Set of health care quality measures for children in Medicaid and the Children's Health Insurance Program (CHIP).<sup>11</sup> Figure 9 shows New York's performance on a selection of these measures in the domains of preventive and primary care, behavioral health, and management of acute and chronic conditions. The utilization data above and quality data here and in the chartbook suggest New York still struggles to improve care and outcomes for children with asthma. This is not due to a lack of attention to the condition, but rather the complex intersection of clinical care, environmental factors, and socioeconomic conditions that the State continues to actively address through DSRIP and other targeted asthma programs. Both the Child Core Set and the PDI data can be extremely helpful tools for the State and others interested in children's health to continue identifying areas to emphasize in improving the quality of care for children.

**Figure 9. New York State Performance on Select FFY 2014 Child Core Set of Health Care Quality Measures for Children in Medicaid and CHIP**

<b>Measure</b>	<b>Median of Reporting States</b>	<b>New York Performance</b>	<b>New York Quartile Ranking</b>
Six or More Well-Child Visits in the First 15 Months	62.1	68.5	Next to Top
One or More Well-Child Visits in Years 3–6	67.4	83.1	Top
One or More Well-Care Visits in Years 12–21	43.5	63.9	Top
Follow-up After Mental Illness Hospitalization Within 7 Days; Ages 6–20 Years	43.9	70.4	Top
Follow-up After Mental Illness Hospitalization Within 30 Days; Ages 6–20 Years	65.2	84.5	Top
ED Visits per 1,000 Enrollees; Ages 0–19 Years (lower is better)	45.7	40.5	Next to top
Asthma Medication Management; Ages 5–20 Years	31.2	28.6	Next to bottom

As New York Medicaid continues the large-scale transformation of its delivery and payment systems, the utilization data presented in this brief and chartbook offer additional areas of potential focus for improving the health of children. This analysis documents the major impact of specific diagnoses (e.g., asthma and behavioral health conditions) on utilization. It also highlights the ongoing need to focus on disparities, specifically racial disparities associated with respiratory system disease hospitalizations for Hispanic and black children, and geographic disparities in ambulatory-care sensitive conditions like asthma and gastroenteritis. Finally the data suggest that children’s needs and contact with the health care system change over time, and that early childhood concerns—for example, a focus on prevention and respiratory diseases—should be coupled with an emphasis on behavioral health for adolescents. We hope the data in this brief and the accompanying chartbook will be useful to all Medicaid stakeholders as they consider how to continue improving the program to enhance care for children.

## Notes

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<sup>1</sup> UHF analysis of New York State Department of Health, *Medicaid Program Enrollment by Month: Beginning 2009*, and United State Census Bureau American FactFinder, *ACS Demographic and Housing Estimates: 2010-2014 American Community Survey 5-Year Estimates – New York*. <https://health.data.ny.gov/Health/Medicaid-Program-Enrollment-by-Month-Beginning-200/m4hz-kzn3>; and [http://factfinder.census.gov/bkmk/table/1.0/en/ACS/14\\_5YR/DP05/0400000US36](http://factfinder.census.gov/bkmk/table/1.0/en/ACS/14_5YR/DP05/0400000US36)

<sup>2</sup> New York State Department of Health, *Medicaid in New York State*. [http://www.health.ny.gov/health\\_care/medicaid/](http://www.health.ny.gov/health_care/medicaid/)

<sup>3</sup> Cohodes SR et al. June 2015. *The Effect of Child Health Insurance Access on Schooling: Evidence from Public Insurance Expansions*, National Bureau of Economic Research Working Paper. [http://scholar.harvard.edu/files/cohodes/files/medicaid\\_edu\\_june2015.pdf](http://scholar.harvard.edu/files/cohodes/files/medicaid_edu_june2015.pdf)

<sup>4</sup> UHF analysis of September 2015 enrollment from New York State Department of Health, *Medicaid Program Enrollment by Month: Beginning 2009*. <https://health.data.ny.gov/Health/Medicaid-Program-Enrollment-by-Month-Beginning-200/m4hz-kzn3>

<sup>5</sup> New York State Department of Health. 2016. *A Path toward Value Based Payment: Annual Update, Draft March 2016*. Page 59.

<sup>6</sup> Brundage SC. June 2016. *You Get What You Pay for: Measuring Quality in Value-Based Payment for Children’s Health Care*. United Hospital Fund. Also: Bailit Health (forthcoming). *Value-Based Payment Models for Medicaid Child Health Services*. United Hospital Fund and Schuyler Center for Analysis and Advocacy.

<sup>7</sup> Agency for Healthcare Quality and Research. *Pediatric Quality Indicators Overview*. [http://www.qualityindicators.ahrq.gov/modules/pdi\\_resources.aspx](http://www.qualityindicators.ahrq.gov/modules/pdi_resources.aspx)

<sup>8</sup> See, e.g., Hacker KA et al. 2014. Screening for Behavioral Health Issues in Children Enrolled in Massachusetts Medicaid. *Pediatrics* 133:1, 46–54. <http://pediatrics.aappublications.org/content/133/1/46>; U.S. Government Accountability Office. December 2012. Children’s Mental Health: Concerns Remain about Appropriate Services for Children in Medicaid and Foster Care. *GAO-13-15 Report to Congressional Requesters*. <http://www.gao.gov/assets/660/650716.pdf>

<sup>9</sup> See, e.g., Johnson TL et al. August 2015. For Many Patients Who Use Large Amounts of Health Care Services, the Need is Intense Yet Temporary. *Health Affairs* 34:8, 1312–1319. <http://content.healthaffairs.org/content/34/8/1312.full>

<sup>10</sup> See, e.g., Berry JG et al. 2014. Children with Medical Complexity and Medicaid: Spending and Cost Savings. *Health Affairs* 33:12: 2199–2206. <http://content.healthaffairs.org/content/33/12/2199>; Brittan MS et al. 2015. Outpatient Follow-Up Visits and Readmission in Medically Complex Children Enrolled in Medicaid. *J Pediatrics* 166:4: 998–1005. <http://www.sciencedirect.com/science/article/pii/S0022347614011913>; Smith T et al. 2000. Randomized Trial of Intensive Early Intervention for Children with Pervasive Developmental Disorder. *Am J Mental Retardation* 105:4: 269–285. <http://www.aaidjournals.org/doi/abs/10.1352/0895-8017%282000%29105%3C0269%3ARTOIEI%3E2.0.CO%3B2>; Fenske EC et al. 1985. Age at Intervention and Treatment Outcome for Autistic Children in a Comprehensive Intervention Program. *Early Intervention* 5:1–2: 49–58. Available at: <http://www.sciencedirect.com/science/article/pii/S0270468485800057>

<sup>11</sup> Note: The Child Core Set has some limitations, and New York may want to consider adopting more sophisticated quality measures that match its long-term goals for child health and well-being. See, e.g., Brundage SC. June 2016. *You Get What You Pay for: Measuring Quality in Value-Based Payment for Children’s Health Care*. United Hospital Fund.