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Outcomes of care for children in *hawk-i*: FFY 2003

Report to the Iowa Department of Human Services

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Outcomes of care for children enrolled in hawk-i: FFY 2003

Introduction

This report presents results from an analysis of outcomes of care for children enrolled in the Healthy and Well Kids in Iowa program (*hawk-i*) during federal fiscal year (FFY) 2003 (October 1, 2002, through September 30, 2003). These analyses are being conducted by the University of Iowa Public Policy Center for the Iowa Department of Human Services (IDHS) as part of the quality assurance activities of the *hawk-i* program. The *hawk-i* program is the separate portion of the Iowa State Child Health Insurance Program (SCHIP). This is the second evaluation of outcome measures for the *hawk-i* program. The outcome measures were adapted from the Healthplan Employer Data and Information Set (HEDIS)¹ 2004. The HEDIS measures were developed by the National Committee for Quality Assurance (NCQA) for use in evaluating health plan outcomes.

For the first *hawk-i* program outcome evaluation (SFY 2001—July 1, 2000-June 30, 2001), the *hawk-i* Clinical Advisory Committee included 10 different HEDIS measures relating to outcomes of care in four service areas: preventive visits for children and adolescents, dental visits, Measles, Mumps and Rubella (MMR) immunization, and behavioral and emotional health visits. Recently the Centers for Medicare and Medicaid Services (CMS) began requiring that state Medicaid programs use seven HEDIS measures to evaluate the performance of health programs and plans:

Comprehensive Diabetes Care (use of hemoglobin A1c), Use of Appropriate Medications for Children with Asthma, Adult's access to Ambulatory Health Services, Children's Access to Primary Care Practitioners, Prenatal and Postpartum Care, Well Child Visits at 15 months of age, and Well Child Visits at three, four, five, and six years of age.

This reports presents results for the four measures pertaining to children that are being required by CMS to evaluate the health plans and programs within state SCHIP programs (Access to Primary Care Practitioners, Appropriateness of Asthma Medications, and Well Child visits for 15 months of age and three, four, five, and six years of age). For states like Iowa, with a combination SCHIP program (part Medicaid expansion and part separate program), CMS is generally requesting that states try and present the outcomes for these two parts of the program separately. However, due to the difficulty of separating the information for the children in Medicaid expansion from the Medicaid program, CMS is allowing Iowa to report the rates for all Medicaid children as a proxy for those eligible under the SCHIP Medicaid expansion.

¹ National Committee on Quality Assurance. 2004. The Healthplan Employer Data and Information Set (HEDIS). Technical Specifications, Vol. 2. Washington, DC. Available at <http://www.ncqa.org/Programs/HEDIS/>.

Some of the approaches to calculating the HEDIS measures were modified in these analyses because the type of administrative data required in the HEDIS specifications were not always available. These modifications were discussed and approved by CMS and researchers at Mathematica, under contract with CMS.

This report focuses on the results for the four HEDIS measures during the period October 2002 through September 2003 for children in the *hawk-i* program. The HEDIS outcome measures were determined through an analysis of claims, encounter and eligibility data for children in *hawk-i* health plans. The numerators and denominators for the measures for both the *hawk-i* program and the state's Medicaid managed care program are located at the end of this report. The Medicaid managed care program outcomes serve as proxy measures for the Medicaid expansion (children from 6-19 years of age in families with incomes from 100-133% of the federal poverty level [FPL]) component of Iowa's SCHIP.

Outcome data should always be interpreted with caution. Limitations of this data may include differential rates of missing data across the plans, the systematic use of inappropriate codes, or the miscoding of diagnoses. Despite these limitations, important knowledge is gained by comparing outcome results between plans and across time as the measures are utilized longitudinally.

Background on the hawk-i program

The *hawk-i* program is part of Iowa's State Child Health Insurance Program (also known as SCHIP or Title XXI) and is designed to provide health insurance coverage for uninsured children in Iowa whose incomes fall between 134% and 200% of the poverty level. The Iowa legislature authorized the creation of a two-part "combination" SCHIP program (Figure 1-1). The first part is a Medicaid expansion (MCHIP) for children with family incomes up to 133% of the FPL. The second component is the *hawk-i* program, the separate state child health insurance program (S-SCHIP). The *hawk-i* program provides health insurance for children with family incomes ranging from 134% to 200% of the FPL (the upper eligibility limit was raised from 185% to 200% of the FPL on July 1, 2000). In this program, the State of Iowa contracts with private health plans to provide covered services to children enrolled in the program. In *hawk-i*, families with incomes from 134% to 150% of the FPL have no premiums or co-payments, while those with household incomes from 151% to 200% of the FPL pay a premium of \$10 per child per month up to a maximum of \$20 per family per month. For those above 150% of the FPL, there is also a \$25 fee for non-emergent care provided in an emergency room (non-emergent is defined following the "prudent layperson" standard). The first recipients were enrolled in *hawk-i* in January 1999. As of January 31, 2005, there were 18,854 children enrolled in *hawk-i*.

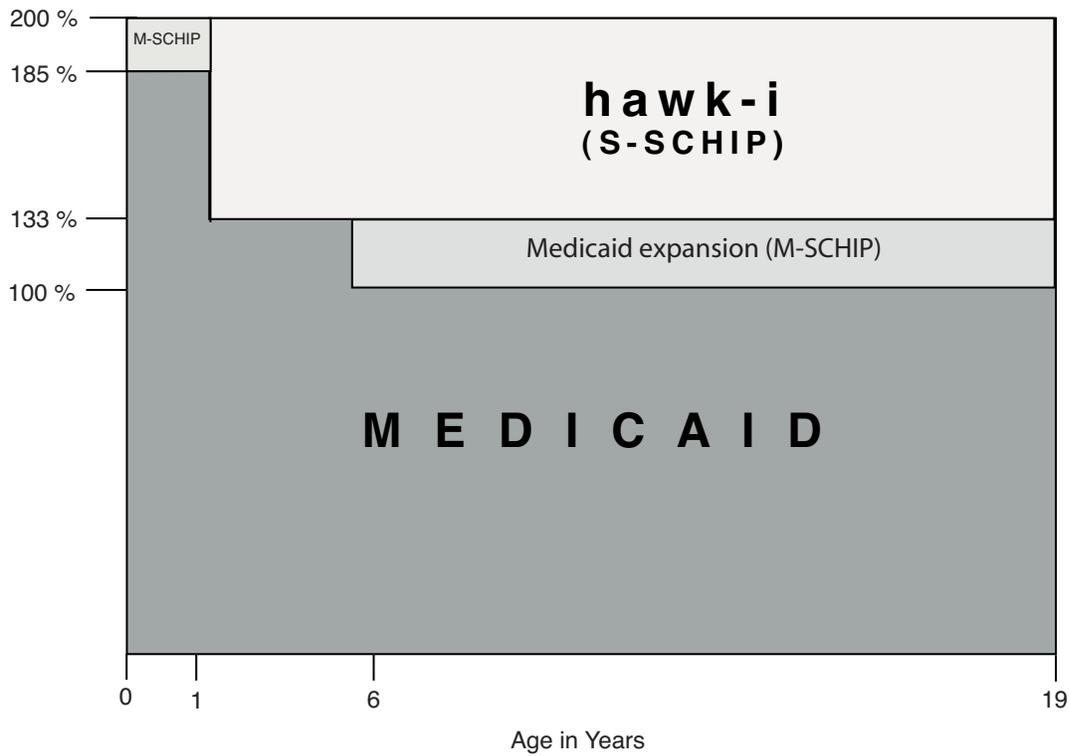


Figure 1. Iowa's State Child Health Insurance Programs

For the period of time included in this study, John Deere Health Plan and/or Iowa Health Solutions Health Plan were the managed care plans available to enrollees in 37 Iowa counties (Figure 1-2). These are the counties in which the health plans contracted to provide all covered services including dental care. Wellmark is an indemnity plan that operates in all counties that do not have a managed care plan.



Figure 2. Distribution of *hawk-i* health plans by county during the time period of these studies (up until January 30, 2005)

Outcome 1: Use of Appropriate Medications for Children with Asthma

This measure determines the proportion of children with persistent asthma (the denominator) who have filled at least one prescription for a long-term control medication (the numerator). It is calculated for 5-9 year olds and 10-17 year olds. Children included in the measure had to have turned the required age by September 30, 2003 and must have been eligible for at least 11 months in state fiscal year 2002 (October 2001-September 2002) and 11 months in state fiscal year 2003.

HEDIS Specifications

According to the HEDIS specifications, children should be considered to have persistent asthma and be counted in the denominator if they meet any one of the following four criteria:

- Have had at least one emergency visit defined by the procedure codes 99281-99285, 99288 or revenue codes 450-459, 981, coupled with a principal diagnosis of asthma (ICD-9-CM 493).
- Have at least one hospital discharge defined by procedure codes 99221-99223, 99231-99233, 99238, 99239, 99251-99255, 99261-99263, 99291, 99292 or revenue codes 100-169, 200-229, 987, coupled with a principal diagnosis of asthma (ICD-9-CM).
- Have had at least four outpatient/physician visits defined by procedure codes 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99271-99275 or revenue codes 456, 510, 515-517,

520, 521, 523, 526, 760-769, 770, 779, 982, 983, 988, coupled with any diagnosis of asthma (ICD-9-CM 493).

- Have had at least four asthma medicine-dispensing events (a list of medications can be obtained in PDF format on the NCQA website [www.ncqa.org]).

To meet the above requirements for inpatient and emergency visits, only encounters that had asthma as a primary diagnosis should be used; for outpatient/physician visits, on the other hand, the diagnosis may be listed as the first, second, third or fourth diagnosis on the encounter form.

Children are counted in the numerator if they have had at least one prescription for a long-term control medication. A list of these medications is also found on the NCQA website (see URL above).

Modifications to the HEDIS specifications

The Use of Appropriate Medications for Children with Asthma measure had to be modified in the following manner for these analyses. *hawk-i* encounter data only lists the first diagnosis per encounter; as a result, we could not count all outpatient/physician visits with asthma in the second, third, or fourth diagnosis position on the encounter. This greatly reduces the number of children who qualify as having persistent asthma. To address this issue we calculated the rate using two different denominators (see Appendix A):

- a) children with four outpatient/physician visits in addition to the other criteria, and
- b) children with two outpatient/physician visits in addition to the other criteria.

Results

Identification of children with persistent asthma

Of the 2,989 children who were eligible for at least 11 months during both SFY 2002 and SFY 2003, 148 met the criteria for persistent asthma when only two outpatient/physician visits were required. This led to a total of 5.0% of children ages five through seventeen with asthma, comparable to the percentage of children in MediPASS (the managed care portion of the state's Medicaid program) with persistent asthma. Only 53 children met the criteria for persistent asthma when four outpatient/physician visits were required, 1.8% of the total. The age and gender distributions are shown in Table 1. There were no significant differences in persistent asthma rates by age or gender.

Table 1. Percent of children with persistent asthma by age and criteria (SFY 2003)

Age category	Definition used to identify children with persistent asthma	
	4 outpatient visits	2 outpatient visits
5-9 years	2.6%	4.9%
Female	2.3%	4.8%
Male	3.0%	5.0%
10-17 years	1.3%	5.0%
Female	1.3%	4.5%
Male	1.2%	5.1%
Total	1.9%	5.0%
Female	1.7%	4.6%
Male	2.1%	5.3%

Using only two visits to meet the outpatient/physician visit criteria for identifying children with persistent asthma led to rates that more closely approximate those found in the Medicaid population. Using four visits to meet the outpatient/physician visit criteria for identifying children with persistent asthma is, however, a more conservative indicator of children with the most persistent form of this condition.

Rates of appropriate use of medications for children with persistent asthma

Table 2 indicates the proportion of children with persistent asthma who filled at least one prescription for a long-term control medication by age, gender and visit criteria. The results from these analyses were somewhat conflicting. The state target rate is 50%. Rates for appropriate use of long-term control medications were higher for children defined as having persistent asthma using the four-visit criteria, however, the rates were more consistent across age and gender groups when using the two-visit criteria. Within the four-visit criteria group, there were significant differences by age and gender.

Among younger children, girls were more likely to receive long-term control medications, while among older children, boys were more likely to be placed on these medications. Though this effect is evident, it should be interpreted carefully due to the small number of children within each group in the table (i.e., these rates may vary widely due to treatment of just one individual). For example, if one more boy age 5-9 years had been treated with a long-term control medication, the rate for this group would have been equal to the rate for girls 5-9 years old.

Table 2. Percent of children with persistent asthma who filled at least one prescription for a long-term control medication by age and criteria (SFY 2003)

Age category	Definition used to identify children with persistent asthma	
	Four outpatient/physician visits	Two outpatient/physician visits
5-9 years	42.9% (n=28)	37.0% (n=54)
Female	41.7% (n=12)	36.0% (n=25)
Male	41.2% (n=17)	37.9% (n=29)
10-17 years	50.0% (n=24)	34.0% (n=94)
Female	50.0% (n=12)	32.6% (n=43)
Male	50.0% (n=12)	35.3% (n=51)

The rates found for the *hawk-i* program were lower than some reported in other populations. In a report provided by Blue Cross/Blue Shield of Michigan, the percent of children age 5-9 years with persistent asthma who received long-term control medication in 2002 was 70%, while the percentage for children age 10-17 was 65%. Results from the NCQA report, “The State of Health Care Quality 2004” indicated that 72.5% of Medicaid recipients age 5-9 and 68.1% of Medicaid recipients age 10-17 with persistent asthma had received long-term control medications during calendar year 2003. As mentioned previously, these comparisons should be made carefully due to differences in the way children with persistent asthma could be identified from the data used here, as well as the differences that a few children can make given the small number of children with persistent asthma.

Outcome 2: Well-child Visits in the First 15 Months of Life

This measure is designed to determine the percentage of children who receive a well-child examination during the first 15 months of life.

HEDIS specifications

According to the HEDIS specifications, to be included in this outcome, children must turn 15 months of age during FFY 2003 and have been continuously enrolled in the *hawk-i* program for the period from 31 days of age through 15 months of age with no more than a 1-month gap. Whether children are 31 days of age is calculated by adding 31 days to the date of birth, and whether they are 15 months is calculated using the date of their first birthday and adding 90 days. Seven rates are computed for this measure. These rates encompass the number of children who had 0, 1, 2, 3, 4, 5, 6 or more well visits during the 14-month period.

Well-child visits are defined as those visits with at least one of the following procedure codes 99381, 99382, 99391, 99392, 99432 or one of the following diagnosis codes V20.2, V70.0, V70.3, V70.5, V70.6, V70.8, V70.9.

Modifications

This measure required major modifications in order to be used for children in the *hawk-i* program. Children under one year of age are usually not enrolled in the *hawk-i* program because they usually meet Medicaid guidelines. Though there are situations where children under age 1 may be enrolled in *hawk-i*, they are rare. Children in *hawk-i* cannot be followed during the period 31 days of age through 12 months of age. With this limitation, it is not feasible to count the number of visits that children have during this time period. Instead, after consultation with the *hawk-i* Clinical Advisory Committee, we changed the measure to determine the proportion of children who had had at least one well-child visit in the period around 15 months of age. The EPSDT periodicity schedule suggests a 15-month visit for evaluation and vaccination. To help ensure that we would capture the claims for a 15-month visit, we established a period 60 days prior to and 90 days after the date when the child turned 15 months of age. Any child with a well visit claim that occurred within this time frame was counted, as long as they were eligible for the period from 2 months prior to, the month of, and 3 months after the date they turned 15 months of age.

Results

Of the 58 children who qualified for the denominator, 36 (62.1%) had a well-child visit within the six-month time frame surrounding the date they turned 15 months of age. This proportion seems acceptable, although we have no national benchmarks with which to compare it. The percentage does, however, compare very favorably with the state target of 50%.

Outcome 3: Well-child Visits in the Third, Fourth, Fifth and Sixth Years of Life

This measure is designed to determine the percentage of children who receive a well child examination at ages three, four, five and six years.

HEDIS specifications

All children who turned three through six years of age by September 30, 2003 and were eligible for at least 11 months of FFY 2003 were considered in the denominator for this measure. Of these children, those with at least one well-child visit were counted in the numerator. Four rates are calculated, one for each year of age.

Well-child visits are defined as those visits with at least one of the following procedure codes 99382, 99383, 99392, 99393 or one of the following diagnosis codes V20.2, V70.0, V70.3, V70.5, V70.6, V70.8, V70.9.

Modifications

No modifications were required for this measure.

Results

The rates for well-child visits for children three, four, five and six years of age were 54%, 67%, 71% and 23%, respectively, for FFY 2003 (Figure 3). These rates were significantly improved over the rates found for the *hawk-i* program in FY 2001 for children three, four, and five years of age, however, the rate for children six years of age was 3% lower than that of FY 2001. For the most part, these results show marked improvements in the well-child rates. These rates approach the short-term state goal of 60%; however, further improvements will be needed to meet the long-term state target of 80%.

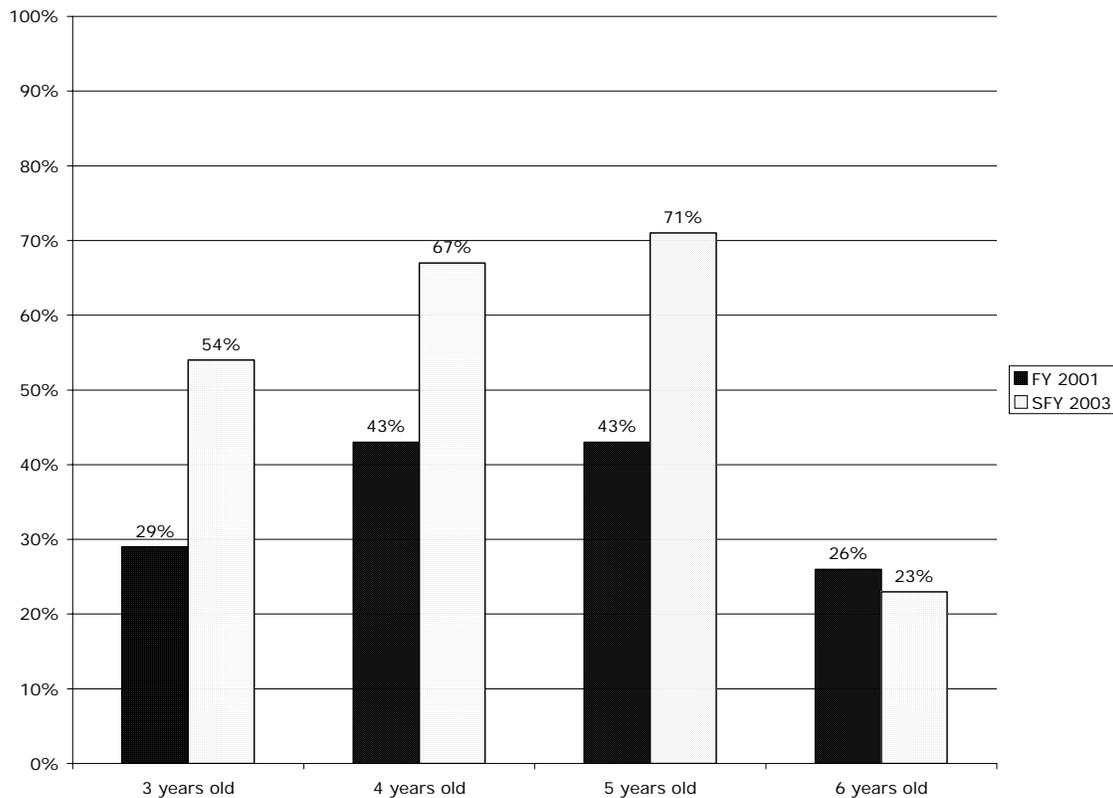


Figure 3. Percent of children with a well-child visit by year and age.

The rates from FY 2001 to FFY 2003 could have changed for several reasons. Rates may have improved because children have been in the program for a longer period of time and their families are more used to seeking services through the *hawk-i* program. Those who are continuously enrolled over a 2-3 year period may be more informed concerning the need for well-child visits, and they may have had more time to find a provider who participates in the *hawk-i* program. The quality of the encounter data that we analyzed for FFY 2003 has also improved as compared to the last two years. During the previous measurement years, we may not have been able to capture all of the well-child visits within the encounter data due to problems with the plans' reporting accuracy or our data-extraction ability .

Outcome 4: Children's Access to Primary Care Practitioners

This measure is used to determine whether children have access to the primary care practitioners within the plan.

HEDIS specifications

There are four age groups evaluated with this measure: children 12-24 months of age, children 25 months to 6 years of age, children 7-11 years of age, and adolescents 12-19 years of age. Children in the first two age groups must be eligible for at least 11 months during FFY 2003 to be counted in the denominator of the rate, while children and adolescents in the third and fourth age groups must be eligible for at least 11 months in FFY 2003 and 11 months in FFY 2002 to be counted in the denominator of the rate.

The numerator of this rate for age groups one and two is composed of children who have had a primary care visit with a primary care practitioner within the plan during FFY 2003. The numerator for age groups three and four is composed of children and adolescents who have had a primary care visit with a primary care practitioner within the plan during either FFY 2002 or 2003.

Primary care visits are defined as those with at least one of the following procedure codes 99201-99205, 99211-99215, 99241-99245, 99341-99350, 99401-99404, 99411, 99412, 99420, 99429, 99499, 99381-99385 or 99391-99395 or one of the following diagnosis codes V20.2, V70.0, V70.3, V70.5, V70.6, V70.8, V70.9.

Modifications

We are unable to determine from the administrative data whether the practitioner whose name appears on the claim is a primary care practitioner in the plan with which the child is enrolled. For

the purposes of this measure, we counted any visit that contained the above procedure and diagnosis codes. No other modifications to the measure were needed.

Results

Figure 4 presents the results for the access to primary care practitioner measure by age and gender. Overall, about 9 out of 10 children had a primary care visit at some point during the year, meeting the state target of 90%. At first glance, the significant difference appears to be between boys and girls of 1 year of age, however, the number of children in this age category was very small (23 children; 19 girls and 4 boys). With such small numbers, large variations are expected.

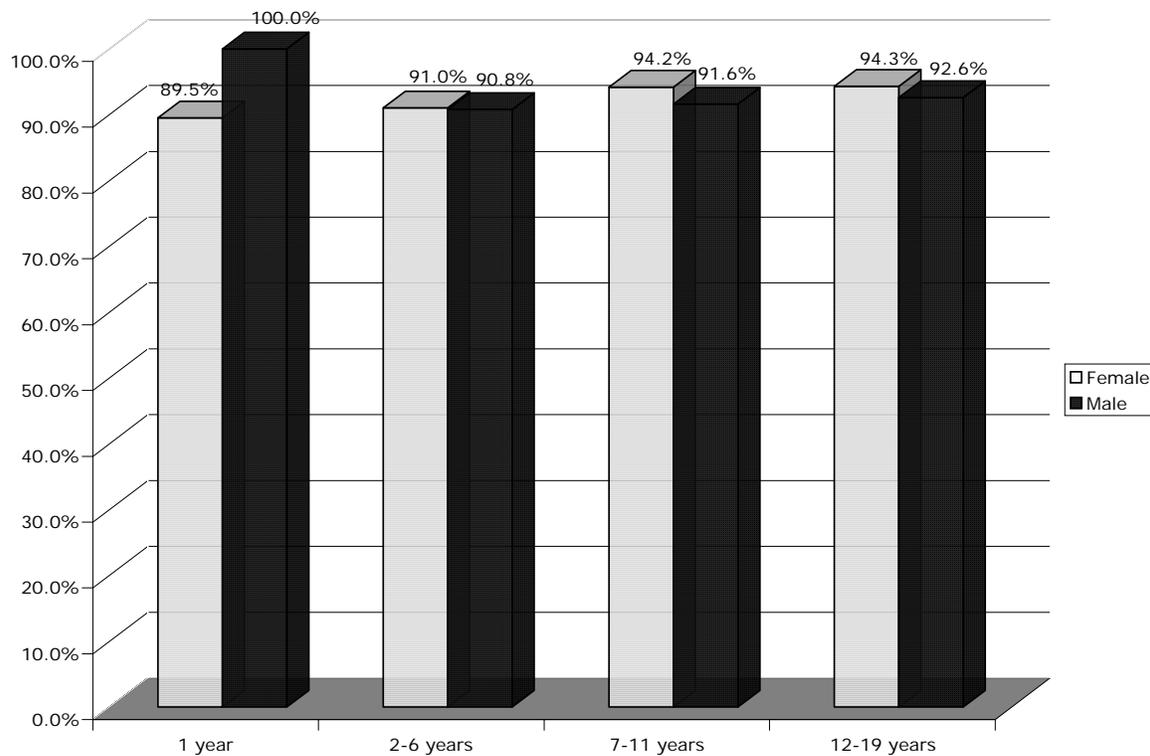


Figure 4. Percent of children and adolescents with visit to a primary care practitioner by age and gender, SFY 2003

Within the other three age categories—2-6 years, 7-11 years, and 12-19 years—there were no significant differences either by age or gender. The rates are all over 90%, exceeding the state goal of 90%, and they appear to be higher than the rates reported by APHSA. However, the APHSA rate would limit the visits to those with a primary care provider on the plan’s provider listing, which we

were unable to do. If this limitation were in place, it seems reasonable that our rates would be somewhat lower.

Appendix A

Outcome 1: Use of Appropriate Medications for Children with Asthma

hawk-i – See modifications page 8.

5-9 years of age: $28/65=42.9\%$

10-17 years of age : $24/48=50.0\%$

Medicaid managed care – No modifications were necessary.

5-9 years of age: $175/308=56.8\%$

10-17 years of age: $189/336=56.3\%$

Outcome 2: Well-child Visits in the First 15 Months of Life

hawk-i – See modifications page 11.

$36/58=62.1\%$

Medicaid managed care – No modifications were necessary, rate provided includes all children with 5 or more visits.

$1670/2303=72.5\%$

Outcome 3: Well-child Visits in the Third, Fourth, Fifth and Sixth Years of Life

hawk-i – No modifications were necessary.

Three years of age: $207/387=53.5\%$

Four years of age: $282/419=67.3\%$

Five years of age: $339/480=70.6\%$

Six years of age: $106/466=22.7\%$

Medicaid managed care – No modifications were necessary.

Three years of age: $2854/4005=71.3\%$

Four years of age: $2964/3872=76.5\%$

Five years of age: $2728/3666=74.4\%$

Six years of age: $1788/3490=51.2\%$

Outcome 4: Children's Access to Primary Care Practitioners

hawk-i – See modifications page 14

12-24 months: $21/23=91.3\%$

2-6 years of age: $1886/2074=90.9\%$

7-11 years of age: $1117/1204=92.8\%$

12-19 years of age: $1453/1555=93.4\%$

Medicaid managed care – No modifications were necessary.

12-24 months: $3994/4639=86.1\%$

2-6 years of age: $14444/19329=74.7\%$

7-11 years of age: $6218/7833=79.4\%$

12-19 years of age: $6492/8313=78.1\%$