



## BRIEF COMMUNICATIONS

# Churning in Medicaid Managed Care and Its Effect on Accountability

Gerry Fairbrother, PhD

Aparna Jain, MPH

Heidi L. Park, PhD

Mehran S. Massoudi, PhD, MPH

Arfana Haidery, MPH

Bradford H. Gray, PhD

*Abstract:* There is concern that churning in Medicaid excludes children from the accountability system for managed care because they may not meet the one-year continuous enrollment requirement. This study explores the effect of churning in measuring childhood immunization coverage rates under the current accountability system. Data were collected from administrative databases at the Centers for Medicaid and Medicare Services and 12 states with high Medicaid managed care penetration. On average in the 12 states only 39% of the children enrolled in one specific managed care plan met the continuous enrollment requirement. However, Centers for Medicaid and Medicare Services data showed that 78% of children were enrolled in Medicaid (but not the same plan) continuously for 12 months. Both plan-specific rates and overall Medicaid rates varied greatly across the states. Policies that result in churning mean that many vulnerable children fall outside of the accountability structure intended to assure that they receive necessary services.

*Key words:* Accountability, Health Plan Employer Data and Information Set, Medicaid managed care, churning, immunizations.

Managed care has brought with it an emphasis on accountability, as well as on cost containment. As managed care penetration increases in the Medicaid population,<sup>1</sup> so do forms of accountability that are not possible in the unmanaged fee-for-service world. When a particular managed care organization (MCO) is contractually responsible for serving enrollees, the services that the organization is expected to provide can be specified, and the delivery of those services can be monitored. Immunization services for young children are an excellent case in point.

A standard for holding health plans accountable for immunization services for young children was developed by the National Committee for Quality Assurance (NCQA) in a process involving purchasers, researchers, and managed care plan

---

*DR. FAIRBROTHER is a Senior Scientist, MS. JAIN was a Research Assistant, DR. PARK is a Research Associate, MS. HAIDERY is a Policy Analyst and DR. GRAY is Director of the New York Academy of Medicine. DR. MASSOUDI is Senior Staff Epidemiologist in the Health Services Research and Evaluation Branch of the Centers for Disease Control and Prevention.*

Journal of Health Care for the Poor and Underserved 15 (2004): 30–41.

representatives.<sup>2,3</sup> The standard, as is now specified in the Health Plan Employer Data and Information Set (HEDIS), is that by the second birthday, children must have received specified doses of five different antigens.<sup>4</sup> The authors of this standard recognized that health plans could reasonably be expected to assure proper immunizations only for children who had been enrolled for some length of time,<sup>5</sup> in that it takes a minimum of eight months to administer all necessary immunizations to a child who had no previous inoculations.<sup>6</sup> (Less time would be required for a partially vaccinated child.) The National Committee for Quality Assurance adopted a standard of one year of continuous enrollment, with no more than a single one-month break in enrollment.<sup>7</sup> On the basis of similar reasoning, the same continuous enrollment standard was applied to other performance measures for children, including adolescent immunization and well-child visits, and for adults, including influenza vaccines and breast and cervical cancer screening for women.

With increased use of HEDIS methodology in the Medicaid environment,<sup>8</sup> concern has grown that many children in Medicaid do not meet the continuous enrollment requirement. There are at least two reasons for this. First, children may not be in Medicaid itself for the specified period because of, for example, short enrollment periods and children going on and off Medicaid.<sup>9,10</sup> Second, children may remain in Medicaid, but not in a given managed care plan for the specified period, due to plan-switching or changing from Medicaid managed care to Medicaid fee-for-service.

Whatever its causes, short tenures in Medicaid managed care can bring a number of deleterious consequences, both for the health care of children enrolled in the program and for accountability. First, with respect to health care, gaining and then losing insurance coverage may translate into moving between different providers and thus into discontinuity of care. This would make it more difficult for children to form a relationship with a medical provider and to establish a medical home, both of which are features of children's health care strongly endorsed by the American Academy of Pediatrics.<sup>11</sup> Second, with respect to accountability, a given managed care plan may not have enough time to ensure that its clients are appropriately immunized. Third, short tenures exclude children from the existing accountability system.

In response to concern over this (and other) problems, the Centers for Disease Control and Prevention and NCQA convened a National Panel on Immunization Measurement Standards to examine immunization coverage standards and make recommendations for change. The committee recommended that the enrollment period be shortened to six months.<sup>12</sup> The recommendation was made, however, in the absence of data showing enrollment histories and information on immunization coverage rates for children meeting the current HEDIS requirement compared with coverage rates for children in for shorter periods. It received unfavorable responses from states and MCOs when put out for public comment because the logic behind a continuous enrollment requirement is clear and because scant data were available on the effect of the proposed change. Absent information, there was little motivation to alter the current system.

Despite the fact that a proposal to change the continuous enrollment requirement has been advanced, there are no clear data showing the impact of different lengths of continuous enrollment on the proportion of children eligible for performance measurement through HEDIS, and the residual proportion of children who fall through the cracks. The purpose of this study, therefore, is to determine the effect of different levels of continuous enrollment on the number of children in Medicaid MCOs' accountability pool for measuring immunization coverage rates in selected states with the largest managed care penetration. We look at the requirement for immunization coverage rates as an example to demonstrate the effects because the specific recommendation to shorten the continuous enrollment requirement was made in the context of this performance indicator.

## Methods

We used data from administrative databases at Centers for Medicaid and Medicare Services (CMS) and selected states. Administrative data from CMS was used to show continuous enrollment in Medicaid, while data from the states was used to show continuous enrollment in a particular Medicaid MCO. In both cases, we examined the enrollment periods for two-year-old children because the HEDIS performance measure for immunization targets two-year-olds.

**Children continuously enrolled in a particular Medicaid managed care organization (from states).** We selected our states from those in the continental U.S. that together contain 90% of all Medicaid managed care enrollees nationwide (according to CMS for the year 2000) in order to have a large proportion of enrollees who fall under the current accountability structure. Of these 18 states, 3 declined to participate and 3 were not approached for administrative reasons. The 12 states in our final study sample represent 43% of the total number of Medicaid managed care enrollees in the U.S. Most states (9 out of 12) have Medicaid managed care penetration higher than the national average of 58%. The 12 states provide geographic variation representing the 4 census regions, the Northeast (4), the Midwest (4), the West (3) and the South (1), and have median annual incomes (for a family of 4) that are either below (4) or above (8) the national average of \$62,228.<sup>13,14</sup> Due to our selection criteria, study states are moderate and large in size and are mostly urban. However, these states provide a range of population sizes between 3.4 to 18 million, and have rural regions, with 5 states having one-third of their population living in rural, or non-metropolitan statistical areas.<sup>15,16</sup>

These 12 states provided data on continuous enrollment of two-year-old children in a particular Medicaid MCO for the last year for which they had data, which in most cases was either 1999 or 2000. States provided data on the number of two-year-old children in each plan in the reporting year and, of those children, the number who were continuously enrolled for 4 time periods: 6-months continuously, 12-months continuously, 6-months continuously with no more than 1-month break, or 12-months continuously with no more than 1-month break. The last time period meets the HEDIS criterion; others were included for comparison purposes.

**Children continuously enrolled in Medicaid (from CMS).** In order to provide a national estimate of the number of children continuously enrolled in Medicaid,

we used administrative data from CMS, or the Medicaid Statistical Information System (MSIS), which included information on continuous enrollment for all children in Medicaid who turned 2 in 1997, the most recent year for which data were available. Only 28 states were reporting to the MSIS at the time of this study, of which 6 were also included in our 12 study states. These data show continuous enrollment in Medicaid, but do not represent continuous enrollment within the same MCO.

**Analysis.** For each of the 12 study states, the number and proportion of two-year-old children continuously enrolled in specific Medicaid MCOs was calculated for 4 indicated time periods. A weighted average was computed for an overall percent. Similarly, the number and proportion of two-year-old children continuously enrolled in Medicaid for 2 specified time periods were calculated from data provided by CMS. A weighted average of the 28 states was computed for an overall proportion. Finally, for the 6 study states for which data on both Medicaid enrollment (from CMS) and Medicaid MCO-specific enrollment (from state Medicaid data) were available, the proportion of two-year-old children continuously enrolled for 12 months with and without a 1-month break was calculated for Medicaid as a whole and for Medicaid MCOs. The differences in proportions were tested for significance.

## Results

**Children continuously enrolled in a particular Medicaid managed care organization.** On average across states, only 39% of the children who turned 2 in the reporting year met the HEDIS continuous enrollment requirement, as shown in Table 1. The percentage varied from a low of 18% (state I) to a high of 72% (state C), but most states (9 out of 12) reported that fewer than 50% of two-year-olds met the HEDIS continuous enrollment requirement and thus, would be eligible for the HEDIS performance reporting measurement. On average across the states, a somewhat higher percentage of two-year-olds (60%) had been continuously enrolled for 6 months with no more than a single 1-month break. Thus, approximately 21% more children are enrolled 6 months continuously versus 12 months continuously (with no more than a single 1-month break in service). Again, the percentage varied across the states, in this case from a low of 31% (state I) to a high of 88% (state C). The percentage of two-year-olds continuously enrolled for 6 and 12 months with at most a 1-month break was higher than the percentage of two-year-olds continuously enrolled for 6 and 12 months without this break. Thus, the latitude of allowing a 1-month break in enrollment makes some difference in drop-off, and results in more children being included in the accountability measure.

**Children continuously enrolled in Medicaid.** On average, the proportion of two-year-olds continuously enrolled in Medicaid for 12 months with and without a 1-month break for the 28 states included in the MSIS database is shown in Table 2. A full 73% of the two-year-olds enrolled in Medicaid for 1997 had been continuously enrolled for 12 months, while 78% had been enrolled for 12 months with at most a single 1-month break. The range for Medicaid continuous enrollment varied across states from a low of 32% to a high of 87%. However, for more than half of the states (15) at least 75% of the children in Medicaid met the HEDIS

continuous enrollment requirement. Of the 28 states currently reporting to CMS's information system, 6 of the 12 states for which we have state-level data are included, as indicated in Table 2.

**Comparison of proportion of children continuously enrolled in Medicaid with those continuously enrolled in a specific Medicaid MCO.** As Figure 1 shows, for the 6 states for which we had comparative data, there is a difference between the percentage of children continuously enrolled in Medicaid (from CMS data) and the percentage of children continuously enrolled in a specific plan (from state data) for 12 months with and without the 1-month break. The disparity between continuous enrollment in Medicaid and continuous enrollment in a specific Medicaid MCO is substantial. On average (weighted) in these 6 states, 38% of the children were enrolled in a specific plan for 12 months, compared with 75% of the children enrolled in Medicaid for 12 months. Further, 44% were continuously enrolled in a specific Medicaid MCO for 12 months with no more than one 1-month break, in contrast to 80% continuously enrolled in Medicaid for that same time.

## Discussion

This study found that the level of churning was such that on average only 39% of two-year-old children enrolled in a given managed care plan met the HEDIS continuous enrollment requirement (continuously enrolled for 12 months with no more than a single 1-month break) and were therefore eligible for inclusion in the HEDIS sample. This means that Medicaid MCOs are reporting performance on, and being held accountable for, on average, only 39% of their two-year-olds. State variation is great, ranging from a low of 18% to a high of 72% of two-year-olds continuously enrolled for 12 months. Enrollment tenures in managed care plans appear to be considerably shorter than enrollment tenures in Medicaid itself, in light of the finding that 78% of two-year-olds were continuously enrolled in Medicaid, although not in the same MCO. This finding, combined with the fact that considerable variability exists among the states, indicates that state managed care plan policies seem to affect the number of children continuously enrolled. Shortening the continuous enrollment requirement to 6 months and allowing for a 1-month break increased the number of two-year-olds meeting the continuous enrollment requirement from 39% to 60%.

We know of no other study examining the impact of churning within the context of the continuous enrollment requirement for children in Medicaid managed care plans. Studies of the application of the HEDIS tool for a Medicaid population have focused on applicability of the performance measures themselves (i.e., what is being measured)<sup>17,18</sup> and variations among states<sup>8</sup> but have placed less emphasis on the effect of churning and the continuous enrollment requirement. Studies of disenrollment have focused on program (not plan) disenrollment,<sup>19-21</sup> but have not examined the impact of the disenrollment on accountability. Findings from the present study on the effects of continuous enrollment have a number of policy implications for accountability for Medicaid children in managed care. These policy options run in two directions: one direction would involve trying to improve the level of continuous enrollment in Medicaid managed care, while the other would

**Table 1.**  
**THE IMPACT OF CONTINUOUS ENROLLMENT REQUIREMENT ON THE NUMBER OF CHILDREN FOR WHOM PERFORMANCE IS MEASURED: PERCENTAGE OF TWO-YEAR-OLDS CONTINUOUSLY ENROLLED FOR VARIOUS TIME PERIODS**

States	Latest year for which data was available <sup>a</sup>	Total number of plans	Total number of two-year-olds enrolled in MMC <sup>b</sup> in the specified year <sup>c</sup>	% OF CHILDREN WHO TURNED TWO IN THE SPECIFIED YEAR AND WERE CONTINUOUSLY ENROLLED IN A PLAN FOR:			
				6 months, no break	12 months, no break	6 months, no more than a 1-month break	12 months, no more than a 1-month break <sup>d</sup>
A	2000	17	20,087	56	26	68	35
B	2000	19	43,822	45	30	51	34
C	2000	7	28,335	83	65	88	72
D	2000	9	32,755	50	31	52	33
E <sup>e</sup>	1999	29	25,497	79	56		
F <sup>f</sup>	2000	1	23,588	46	37	55	47
G	2000	13	22,118	58	26	61	32
H	1999	9	31,115	40	16	71	21
I	1999	15	17,059	25	13	31	18
J	2000	8	15,773	66	55	71	61
K	2000	11	22,595	47	32	55	39
L	2001	13	18,830	54	33	60	40

Table 1. Continued

States	Latest year for which data was available <sup>a</sup>	Total number of plans	Total number of two-year-olds enrolled in MMC <sup>b</sup> in the specified year <sup>c</sup>	% OF CHILDREN WHO TURNED TWO IN THE SPECIFIED YEAR AND WERE CONTINUOUSLY ENROLLED IN A PLAN FOR:			
				6 months, no break	12 months, no break	6 months, no more than a 1-month break	12 months, no more than a 1-month break <sup>d</sup>
Weighted average (percentage, all states)				54	35	55	36
Weighted average (percentage, without state E)				52	33	60	39

<sup>a</sup> Year is calendar year for B, C, D, E, F, H, I, J, K, L, M; year is state-fiscal year for A; year is federal-fiscal year for G.

<sup>b</sup> MMC=Medicaid managed care organization

<sup>c</sup> Specified year from column 2

<sup>d</sup> HEDIS criterion for continuous enrollment

<sup>e</sup> State E did not provide data on 6- and 12-month continuous enrollment- with no more than a 1-month break.

<sup>f</sup> Only includes enrollees in the state-administered plan. This accounts for 75% of all Medicaid managed care enrollees.

**Table 2.****CONTINUOUS ENROLLMENT FOR THE NUMBER OF CHILDREN IN MEDICAID FOR 28 STATES**

States	Total number of two-year-olds enrolled in Medicaid in 1997	% OF CHILDREN WHO TURNED TWO IN THE SPECIFIED YEAR AND WERE CONTINUOUSLY ENROLLED IN MEDICAID FOR:	
		12 months, no break	12 months, no more than 1-month break <sup>a</sup>
1	1,896	15	32
2	21,491	67	75
3	9,741	50	59
4	187,012	74	79
5	10,402	64	70
6	2,990	74	80
7 <sup>b</sup>	55,683	65	72
8	39,708	72	78
9	8,232	65	72
10	4,011	61	67
11	7,576	69	74
12	18,264	72	77
13	4,055	73	78
14 <sup>b</sup>	40,393	76	82
15 <sup>b</sup>	20,560	84	87
16	24,737	79	83
17	13,817	62	71
18	2,549	61	68
19	1,632	38	57
20	3,132	72	77
21	4,052	51	57
22 <sup>b</sup>	45,545	84	87
23	4,092	82	85
24	32,236	78	81
25	6,047	57	63
26	2,609	46	58
27 <sup>b</sup>	30,157	72	77
28 <sup>b</sup>	16,302	73	78
Weighted average (percentage)		73	78

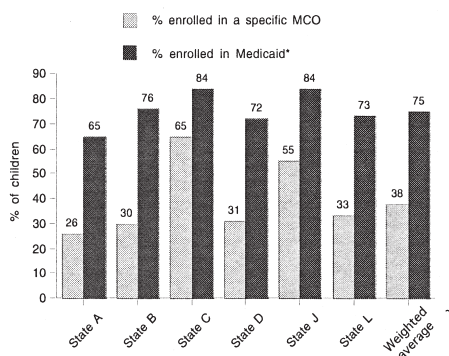
Note: Medicaid includes fee-for-service and Medicaid managed care plans but not necessarily enrollment in the same plan.

<sup>a</sup> HEDIS criterion for continuous enrollment

<sup>b</sup> These states were included in the 12-state study sample.

### Comparison of the number of children continuously enrolled in Medicaid and Medicaid managed care: Comparison data for six states

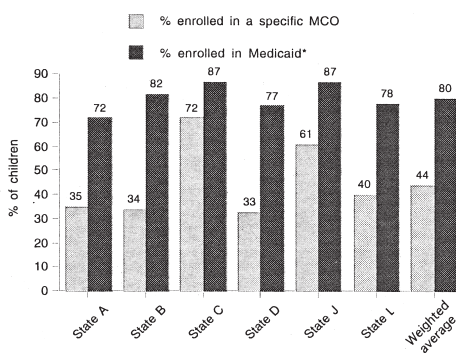
Figure 1a.  
% of children continuously enrolled for 12 months with no break



Note: The difference in proportions of two-year-olds continuously enrolled for 12 months with no break in Medicaid and managed care.

\* p<0.001. Difference in proportions significant in all states.

Figure 1b.  
% of children continuously enrolled for 12 months with no more than 1 month break<sup>a</sup>



Note: The difference in proportions of two-year-olds continuously enrolled for 12 months with a 1-month-break in Medicaid and managed care.

<sup>a</sup> HEDIS criterion for continuous enrollment  
\* p<0.001. Difference in proportions significant in all states.

involve changing measures of accountability, as was proposed by the CDC-NCQA committee.

With respect to reducing the level of churning, the results of this study point to a need to determine why so many children fail to remain enrolled in a given plan for 6 and 12 months, even when they appear to be enrolled in Medicaid for that length of time. The fact that states have extended their enrollment periods, in recent years, to 12 months<sup>22</sup> means once enrolled, children in most states remain in Medicaid for 12 months. This enrollment period is important because a high proportion of children fail to re-enroll on time after a given enrollment period<sup>10</sup> and many of these children who fail to re-enroll appear still to be eligible for Medicaid coverage.<sup>23,24</sup> In our data set, two states (states H and I) had a 6-month enrollment period, while the other 9 states had 12-month enrollment for two-year-old children, and 1 state had a more complicated arrangement.<sup>25</sup> States H and I also had the lowest proportion of children continuously enrolled. Thus, it appears that the states' policies for length of time a child remains enrolled in Medicaid may be important.

However, given the large variation in proportion of children continuously enrolled even with 12-month enrollment policies for Medicaid, it is clear that other factors beyond enrollment in Medicaid itself are at play. It was beyond the scope of this study to examine these factors in depth in our study states; however, it is possible to point to factors that are likely to be important. One set of factors consists of those

state-level policies dealing with enrollment in a managed care plan. In many states, children are enrolled in Medicaid first and then are given a specified period of time to select a managed care plan.<sup>26</sup> If a managed care plan is not selected by the end of the specified time period, children are automatically assigned to a plan, and given another specified period of time to change plans.<sup>26</sup> Thus, it is likely that at the end of a 12-month period, a given child will have been enrolled in Medicaid for 12 months, but in a Medicaid managed care plan for a shorter duration. It is also possible that dissatisfaction with health plans, even if that plan was explicitly chosen, sometimes is a factor. However, studies find that plan switching due to dissatisfaction with plans among enrollees who were not automatically assigned, is not the major cause of plan-switching.<sup>27</sup>

A second set of factors that may affect short tenures is beyond the control of states as they concern characteristics of the managed care market such as number of managed care plans to choose from and whether plans have merged, gone out of business, or left the Medicaid market. In our data, number of plans in a given state does not appear to be related to the proportion of children continuously enrolled. However, plan volatility, which was mentioned by several of our study states anecdotally, may be important. If a given managed care plan leaves a given area, the children in that plan are re-assigned and the continuous enrollment period restarts. Although we know that all these factors exist, we must understand better what is behind the different levels of continuity in health plans by exploring this phenomenon more systematically before making recommendations for changes in policies or practices.

Changing the continuous enrollment requirement to a shorter time period (such as to 6 months rather than 12, as was proposed<sup>12</sup>) would clearly result in the inclusion of a larger proportion of children in the accountability structure. It will not, however, correct the fundamental problem of short tenures in managed care plans and the potential effect on quality of care. Furthermore, this alteration may have other drawbacks, as state officials have pointed out. HEDIS standards were developed with some care and with the participation of key stakeholders,<sup>12</sup> and shorter periods make it difficult for health plans to assure that children receive services. Further, if the standard were to be changed for Medicaid plans alone, then comparisons could never be made between Medicaid and commercial populations.

This study had several limitations. One is that Medicaid enrollment data from CMS and MCO enrollment data from states were available for only 6 of the 12 study states. The remaining states were not reporting to CMS, and therefore it was not possible to make comparisons between Medicaid enrollees and Medicaid MCO enrollees for all 12 states; nevertheless, the results were compelling for the 6 states on which the analysis was carried out. A second limitation is that data from CMS and states were from different years (1997 vs. 1999/2000), due to the fact that 1997 was the most recent year for which data were available from CMS. Although welfare reform took place in this time period, along with an increased penetration of managed care, and possibly other secular trends, the differences reported here were so large that they would outweigh the effects of the secular trends. A final limitation is that we do not know the impact of different enrollment periods on immunization

rates; that is, do children who are enrolled for 12 months have immunization rates different from those of children who have been enrolled for 6? Such data have been developed for children in a commercial plan,<sup>12</sup> but comparable information has not been developed for Medicaid plans.

## Conclusion

This paper presents new information on short tenures in Medicaid managed care and raises questions about the problem of churning in the context of the accountability process. It is clear that short tenures have major implications for measuring performance, both for Medicaid managed care plans' ability to assure that services are delivered as well as for states' ability to hold managed care plans accountable for service delivery. It has shown that large numbers of Medicaid children are slipping through the accountability cracks, which, in turn, can give rise to two-tiered quality. Thus, it is important to learn more about the causes of short enrollment periods in Medicaid managed care and to develop recommendations for improvement. Finally, the results of this study suggest that the proportion of the total number of children in the managed care plan on whom performance is being reported may be an important issue in its own right. It might be advisable to ask managed care plans to report this proportion and the proportion of children who meet the performance standard as well as to monitor average length of time in a managed care plan.

## Acknowledgments

The authors thank officials at the states surveyed and at CMS who supplied data and helped interpret it. We also thank Patrick Roohan and Michael Curran for their helpful comments on the draft, and Linda Murphy from CMS and Nancy Fenlon from CDC for assistance with the project. This project was supported by the Centers for Disease Control and Prevention (01IPA17472).

## Notes

1. Centers for Medicare and Medicaid Services. 2001 Medicaid Managed Care Enrollment Report: Penetration rates from 1996–2001: National Summary Table (Retrieved March 2003) [Online]. Available: [www.cms.gov/medicaid/managedcare/trends01.pdf](http://www.cms.gov/medicaid/managedcare/trends01.pdf).
2. National Committee for Quality Assurance (NCQA). NCQA overview: Measuring the quality of America's health care. Washington, DC: National Committee for Quality Assurance, 2002.
3. Iglehart JK. The National Committee For Quality Assurance. *N Engl J Med* 1996 Sep 26;335(13):995–9.
4. National Committee for Quality Assurance. Health plan employer data & information set. Washington, DC: National Committee for Quality Assurance, 2002.
5. Agency for Healthcare Research and Quality. Child Health Toolbox: Measuring Performance in Child Health Programs. Established Child Health Measures. HEDIS®: Health Plan Employer Data and Information Set (Retrieved March 2003) [Online]. Available: [www.ahrq.gov/chtoolbox/measure4.htm](http://www.ahrq.gov/chtoolbox/measure4.htm).
6. Atkinson W, Furphy, L, Humiston, SG, et al, eds. *Epidemiology and Prevention of Vaccine-Preventable Diseases: The Pink Book*. Atlanta, GA: Centers For Disease Control And Prevention, 1997.

7. National Committee for Quality Assurance. Health plan employer data & information set. Washington, DC: National Committee for Quality Assurance, 1996.
8. Landon BE, Tobias C, Epstein AM. Quality management by state Medicaid agencies converting to managed care. *JAMA* 1998 Jan 21;279(3):211–6.
9. Bachrach D, Tassi A. Coverage gaps: The problem of enrollee churning In Medicaid Managed Care and Child Health Plus. New York, NY: Kalkines, Arky, Zall & Bernstein, 2000.
10. Dick AW, Allison A, Haber SG, et al. Consequences of states' policies for SCHIP disenrollment. *Health Care Financ Rev* 2002 Spring;23(3):65–88.
11. Medical Home Initiatives for Children with Special Needs Project Advisory Committee. American Academy of Pediatrics. The medical home. *Pediatrics*. 2002 Jul;110(1 Pt 1):184–6.
12. Lieu TA, Massoudi MR, Miroshnik IL, et al. Immunization status among children newly enrolled in a health plan: A new frontier for quality measurement? *Am J Manag Care* 2003 Feb;9(2):121–7.
13. Median income for 4-person families, by state. U.S. Census Bureau, 2002.
14. Census regions and divisions of the United States. U.S. Department of Commerce Economics and Statistics Administration, U.S. Census Bureau, 2002.
15. Annual population estimates by state. U.S. Census Bureau, 2002.
16. Urban and rural population: 1900 to 1990. U.S. Census Bureau, 1995.
17. McManus M, et al. How far have state Medicaid agencies advanced in performance measurement for children? *Arch Pediatr Adolesc Med* 2000 Jul;154(7):665–71.
18. Bradley EH, Horwitz SM, Grogan CM, et al. Monitoring clinical quality in Medicaid managed care. *Conn Med* 1998 Apr;62(4):215–20.
19. Carrasquillo O, Himmelstein DU, Wollhandler S, et al. Can Medicaid managed care provide continuity of care to new Medicaid enrollees? An analysis of tenure on Medicaid. *Am J Public Health* 1998 Mar;88(3):464–6.
20. Czajka JL. Analysis of children's health insurance patterns: Findings from the Survey of Income and Program Participation. Washington, DC: Mathematica Policy Research Inc., 1999.
21. Ellwood M. The Medicaid eligibility maze: Coverage expands, but enrollment problems persist. Washington, DC: The Kaiser Commission on Medicaid and the Uninsured. The Henry J. Kaiser Foundation, 1999.
22. Cohen Ross D, Cox L. Enrolling children and families in health coverage: The promise of doing more. Washington, DC: The Henry J. Kaiser Family Foundation, 2002.
23. Bachrach D, Belfort R, Lipson. Closing coverage gaps: Improving retention rates in New York's Medicaid and Child Health Plus programs. New York: Kalkines, Arky, Zall & Bernstein LLP, 2000.
24. Birnbaum M, Holahan D. Renewing coverage in New York's Child Health Plus B program: Retention rates and enrollee experiences. New York: United Hospital Fund, 2003.
25. Cohen Ross D, Cox L. Making it simple: Medicaid for children and CHIP income eligibility guidelines and enrollment procedures. Washington, DC: Center on Budget and Policy Priorities, 2000.
26. Curtis D. Medicaid Managed Care enrollment and disenrollment: The experience of four states. Portland, ME: National Academy for State Health Policy, 1999.
27. Riley T, Pernice C, Perry M, et al. Why eligible children lose or leave SCHIP: Findings from a comprehensive study of retention and disenrollment. Portland, ME: National Academy for State Health Policy, 2002.