

- ment of tuberculosis treatment failures. *Ann Intern Med.* 1982;96:297-302.
14. Farmer P, Robin S, Ramilus SL, Kim JY. Tuberculosis, poverty, and "compliance": lessons from rural Haiti. *Semin Respir Infect.* 1991;6:254-260.
 15. National Tuberculosis Institute, Bangalore. Tuberculosis in a rural population of South India: a five-year epidemiological study. *Bull World Health Organ.* 1974;51:473-488.
 16. Dutt AK, Moers D, Stead WW. Short-course chemotherapy for tuberculosis with twice-weekly isoniazid and rifampin: community physicians' seven year experience with mainly outpatients. *Am J Med.* 1984;77:233-242.
 17. Centers for Disease Control and Prevention.

- National action plan to combat multidrug-resistant tuberculosis. *MMWR Morb Mortal Wkly Rep.* 1992;41(RR-11): 1-30.
18. Goble M, Iseman MD, Madsen LA, Waite D, Ackerson L, Horsburgh CR. Treatment of 171 patients with pulmonary tuberculosis resistant to isoniazid and rifampin. *N Engl J Med.* 1993;328:527-532.
 19. Telzak EE, Sepkowitz K, Alpert P, et al. Multidrug-resistant tuberculosis in patients without HIV infection. *N Engl J Med.* 1995;333:907-911.
 20. Burwen D, Bloch A, Griffin I, Ciesielski C, Stern H, Onorato I. National trends in IDS cases with tuberculosis (TB) and TB cases with AIDS. In: Program and abstracts of the

- International Conference on AIDS, June 1993. Abstract PO-B07-1166.
21. Small PM, Schecter GF, Goodman PC, Sande MA, Chaisson RE, Hopewell PC. Treatment of tuberculosis in patients with advanced human immunodeficiency virus infection. *N Engl J Med.* 1991;324:289-294.
 22. Fischl MA, Daikos GL, Uttamchandani RB, et al. Clinical presentation and outcome of patients with HIV infection and tuberculosis caused by multiple-drug-resistant bacilli. *Ann Intern Med.* 1992;117:184-190.
 23. Salomon N, Perlman DC, Freidmann P, Buchstein S, Kreiswirth BN, Mildvan D. Predictors and outcome of multidrug-resistant tuberculosis. *Clin Infect Dis.* 1995;21:1245-1252.

The Demographic Characteristics of Medicaid-Eligible Uninsured Children

Sheila Avruch, MBA, Steven Machlin, MS, Paula Bonin, and Frank Ullman, MPP

ABSTRACT

Objectives. This study estimated the number of uninsured children in 1993 who were eligible for Medicaid.

Methods. Data from the March 1990 and 1994 Current Population Surveys were analyzed.

Results. At least 2.3 million Medicaid-eligible children were uninsured in 1993. These children were more likely to have a working parent than children on Medicaid. Higher proportions of uninsured children less than 6 years of age, children who lived in female-headed single-parent families, and African-American and Hispanic children were eligible for Medicaid.

Conclusions. Many eligible children do not enroll in Medicaid, and they differ in specific ways from enrolled children. (*Am J Public Health.* 1998;88:445-447)

Introduction

Children without health insurance or with gaps in coverage are less likely to have a regular source of health care¹ or routine doctor visits.² Uninsured children are less likely to receive care for injuries³ and to see a physician if they are chronically ill; also, they are less likely to obtain dental care⁴ and appropriate immunizations.⁵⁻⁷

In 1993, 9.3 million children in the United States (13.5% of all US children) lacked health insurance coverage.⁸ Beginning in 1986, states had the option of expanding children's eligibility for Medicaid. By 1993, states were required to cover children less than 6 years of age with family incomes at or below 133% of the federal poverty level, as well as poor children 6 years of age and older born after September 30, 1983. As a result, the number of children less than 18 years old on Medicaid increased substantially between 1989 and 1993, from 8.9 million (13.6% of US children) to 13.7 million (19.9%).

In this analysis, we estimate the number and examine the characteristics of children who were eligible for Medicaid in 1993 but were uninsured. We also estimate what segment of uninsured children with specific characteristics (e.g., living in a single-parent family) is eligible for Medicaid. Understanding characteristics of uninsured children who do not access Medicaid may be helpful in identifying programs or

policies that promote insurance coverage for children.

Methods

To determine the number and demographic characteristics of children on Medicaid, "Medicaid-eligible" but uninsured children, and all uninsured children, we analyzed data from the Bureau of the Census' March 1990 and March 1994 Current Population Surveys, which contain questions about health insurance coverage during the previous year. When no source of health insurance is reported, the person is assumed

Sheila Avruch and Paula Bonin are with the US General Accounting Office, Washington, DC. At the time this study was conducted, Steven Machlin was with the US General Accounting Office. He is now with the Agency for Health Care Policy and Research, Rockville, Md. Frank Ullman is with the Urban Institute, Washington, DC.

Requests for reprints should be sent to Sheila Avruch, MBA, General Accounting Office, HEHS/HF&S, 441 G St, NW, Washington, DC 20548.

This paper was accepted June 13, 1997.

Note. This paper is an expansion on part of an analysis published by the US General Accounting Office (GAO), *Health Insurance for Children: Many Remain Uninsured Despite Medicaid Expansion* (1995). Although some of this research was done under the auspices of GAO, the views and opinions expressed herein are those of the authors and do not reflect the position of GAO.

TABLE 1—Health Insurance Status of Medicaid-Eligible Children, 1989 and 1993

Health Insurance of Child	1989 (n = 11 952 184), % (95% CI)	1993 (n = 13 786 372), % (95% CI)	Percentage Point Difference	Difference, %
Private coverage ^a	27.4 (23.5, 31.4)	21.0 (17.4, 24.6)	-6.4	-23
Employment based	21.6 (17.4, 24.6)	17.3 (14.0, 20.7)	-4.3	-20
Private/individually purchased	5.8 (3.8, 7.9)	3.7 (2.0, 5.4)	-2.2	-37
Medicaid ^b	48.1 (43.7, 52.6)	60.8 (56.5, 65.2)	12.7	+26
Medicaid-AFDC	32.9 (28.7, 37.1)	35.5 (31.3, 39.8)	2.6	+8
Medicaid-non-AFDC	15.2 (12.0, 18.4)	25.3 (21.5, 29.2)	10.1	+66
CHAMPUS	1.5 (0.4, 2.6)	1.2 (0.2, 2.2)	-0.3	-20
Uninsured	22.9 (19.2, 26.7)	16.9 (13.6, 20.2)	-6.0	-26
Total	100.0 . . .	100.0 . . .		

Note. CI = confidence interval; AFDC = Aid to Families with Dependent Children; CHAMPUS = Civilian Health and Medical Program of the Uniformed Services.

^aIncludes both employment-based coverage and individually purchased coverage.

^bIncludes both children who received Medicaid and AFDC and those who received Medicaid but did not receive AFDC.

to be uninsured for the entire year, although some analysts have suggested that the Current Population Survey appears to represent more of a point in time estimate and thus overestimates lack of coverage for the year.

We linked information on children and their parents by pairing children 0 to 17 years of age with their adult parent 18 to 64 years of age and then pairing that parent with a spouse, if any. We based our parental work status variable on whichever parent was working closest to full time. We assigned children with multiple sources of insurance to a single, primary source based on the following hierarchy: employment-based insurance, Medicaid, Civilian Health and Medical Program of the Uniformed Services, private/individually purchased, or uninsured. Children who did not link to an adult 18 to 64 years of age (about 1.6% in 1993) were excluded from the analysis.

We defined Medicaid-eligible children as those eligible for Medicaid in 1993 after mandated federal expansions. These expansions include (1) children 0 to 5 years old with family incomes at or below 133% of the federal poverty level and (2) children 6 to 10 years old with family incomes at or below 100% of the federal poverty level. Although not perfect, our criteria established a reasonable "core" group of Medicaid-eligible children for our analysis.

Results

Insurance Status of Medicaid-Eligible Children

We estimate that at least 13.8 million children under 11 years old were Medicaid eligible in 1993, about 20% of all US children. These children were on Medicaid

(61%), were privately insured (22%), or were uninsured (17%). As Table 1 shows, Medicaid coverage for this group rose from 48% in 1989 to 61% in 1993. Despite this, 2.3 million Medicaid-eligible children were uninsured in 1993. These children represented one quarter of the 9.3 million uninsured children in the United States and about 45% of uninsured children in their age range.

Medicaid-Eligible Uninsured Children vs Children on Medicaid

Medicaid-eligible uninsured children differed from children on Medicaid (see Table 2). In 1993, Medicaid-eligible uninsured children were twice as likely as those on Medicaid (43% vs 20%) to have a parent working full time (the work status most likely to involve employment-based health insurance as a benefit). The majority of Medicaid-eligible uninsured children lived in two-parent families, while most children on Medicaid lived in female-headed single-parent families. Children on Medicaid and Medicaid-eligible uninsured children were disproportionately African American or Hispanic. However, a higher proportion of Medicaid-eligible children were Hispanic, and a lower proportion were African American, than were children on Medicaid.

Medicaid-Eligible Uninsured Children as a Proportion of All Uninsured Children

By our definition, the Medicaid-eligible group was among the poorer segment of uninsured children and included no teens. It represented a larger percentage of uninsured children less than 6 years of age (53%) than of uninsured children 6 to 10 years of age (36%). In comparison with the

parents of other uninsured children, a greater proportion of the parents of Medicaid-eligible uninsured children were working less than full time. A greater proportion of uninsured Hispanics (35%) and African Americans (33%) than of White non-Hispanics (18%) and others (18%) were eligible for Medicaid. A higher percentage of uninsured children of single female parents (34%) than of uninsured children in two-parent families (22%) were Medicaid eligible.

Discussion

Many families with uninsured children are not enrolling their children in Medicaid. Low-income families may not know that their children could be eligible for Medicaid,⁹ may avoid Medicaid, or may find enrolling difficult.¹⁰ Contact through day-care centers and schools may be one way to better reach such families.¹¹ The Clinton administration's 1999 budget proposed expanding use of a \$500 million Medicaid outreach fund and, in order to enroll more children, expanding the type of organization that can determine children's presumptive eligibility.

The recently passed welfare reform law sought to protect children by continuing to mandate Medicaid eligibility for them. But children may lose coverage if states do not implement procedures to recertify them as their families' assistance status changes. As parents begin working, they may not gain access to affordable private health insurance for themselves or their children. Therefore, Medicaid will probably continue to be important for low-income children in working families.

Through Medicaid waivers, some states (e.g., Hawaii and Tennessee) have

TABLE 2—Children on Medicaid, Medicaid-Eligible Uninsured Children, Uninsured Children, and Medicaid-Eligible Uninsured Children as a Percentage of All Uninsured Children, by Selected Characteristics, 1993

	Medicaid (n = 13 656 027), % (95% CI)	Medicaid-Eligible Uninsured (n = 2 329 465), % (95% CI)	Uninsured (n = 9 266 892), % (95% CI)	Medicaid-Eligible Uninsured as Percentage of Uninsured (95% CI)
Region				
Northeast	18.4 (16.4, 20.4)	12.6 (8.4, 16.7)	14.1 (11.0, 17.2)	22 (15, 29)
Midwest	22.7 (20.5, 24.8)	12.6 (8.5, 16.8)	16.1 (12.8, 19.3)	20 (14, 26)
South	35.1 (32.7, 37.6)	43.4 (37.2, 49.7)	42.8 (38.4, 47.1)	26 (22, 30)
West	23.8 (21.6, 26.0)	31.4 (25.6, 37.2)	27.1 (23.1, 31.0)	29 (24, 35)
Work status				
Full time/full year	20.1 (18.1, 22.2)	42.5 (36.3, 48.7)	61.4 (57.1, 65.7)	17 (14, 20)
Less than full time/full year	33.0 (30.6, 35.4)	37.0 (30.9, 43.0)	27.1 (23.2, 31.1)	34 (29, 40)
Not working	46.9(44.3, 49.5)	20.5 (15.5, 25.6)	11.5 (8.7, 14.3)	45 (36, 54)
Family type				
Two parent	35.5 (33.1, 38.0)	57.6 (51.4, 63.8)	67.1 (62.9, 71.3)	22 (18, 25)
Male-headed single parent	4.3 (3.2, 5.3)	5.6 (2.7, 8.4)	6.0 (3.9, 8.1)	23 (13, 34)
Female-headed single parent	60.2 (57.6, 62.7)	36.8 (30.8, 42.8)	26.9 (23.0, 30.8)	34 (29, 40)
Race/ethnicity				
White, non-Hispanic	40.2 (37.6, 42.7)	37.8 (31.8, 43.9)	51.7 (47.2, 56.1)	18 (15, 22)
African American, non-Hispanic	32.4 (30.0, 34.8)	22.9 (17.7, 28.2)	17.7 (14.3, 21.0)	33 (26, 40)
Hispanic	23.6 (21.4, 25.8)	35.8 (29.8, 41.8)	25.8 (22.0, 29.7)	35 (29, 41)
Other	3.9(2.9, 4.8)	3.5 (1.2, 5.8)	4.8 (2.9, 6.7)	18 (7, 29)
Age, y				
0–5	47.2 (44.6, 49.8)	62.2 (56.1, 68.2)	29.4 (27.4, 31.4)	53 (47, 59)
6–10	26.8 (24.5, 29.1)	37.8 (31.8, 43.9)	26.2 (24.2, 28.2)	36 (30, 42)
11–17	26.0 (23.7, 28.3)	0 (0, 0)	44.3 (42.3, 46.3)	0 (0, 0)

Note. CI = confidence interval.

expanded subsidized health insurance to uninsured children or families not otherwise eligible for Medicaid while requiring families to pay part of the premium cost. Such approaches may provide a bridge to expanding health insurance coverage in the future. □

References

- Kogan M, Alexander G, Teitelbaum M, et al. The effect of gaps in health insurance on continuity of a regular source of care among preschool-aged children in the United States. *JAMA*. 1995;274:1429–1435.
- Bloom B. Health insurance and medical care: health of our nation's children, United States, 1988. *Adv Data Vital Health Stat*. October 1, 1990; no. 188. DHHS publication PHS-90-1250.
- Overpeck MD, Kotch JB. The effect of US children's access to care on medical attention for injuries. *Am J Public Health*. 1995;85:402–404.
- Monheit AC, Cunningham PJ. Children without health insurance. In: *The Future of Children: U.S. Health Care for Children*. Los Angeles, Calif: David and Lucile Packard Foundation; 1992;2:154–170.
- Wood DL, Hayward RA, Corey CR, Freeman HE, Shapiro MF. Access to medical care for children and adolescents in the US. *Pediatrics*. 1990;86:666–673.
- Oberg CN. Medically uninsured children in the United States: a challenge to public policy. *Pediatrics*. 1990;85:824–833.
- Himmelstein DU, Woolhandler S. Care denied: US residents who are unable to obtain needed medical services. *Am J Public Health*. 1995;85:341–344.
- Health Insurance for Children: Many Remain Uninsured despite Medicaid Expansion*. Washington, DC: US General Accounting Office; 1995.
- Shuptrine SC, Grant VC, McKenzie GG. *A Study of the Relationship of Health Coverage to Welfare Dependency*. Columbia, SC: Southern Institute on Children and Families; 1994.
- Health Care Reform: Potential Difficulties in Determining Eligibility for Low-Income People*. Washington, DC: US General Accounting Office; 1994.
- Cohen-Ross D. Start healthy, stay healthy: early childhood programs can make Medicaid work for children. Presented at the National Child Health Leadership Conference, December 1994, New Orleans, La.