

Asthma Care for Children: Financing Issues

A CHCS Chartbook

October 2001



The Center for Health Care Strategies (CHCS) is a nonprofit, policy resource center that promotes better health care services for low-income and special needs populations. We achieve this objective through providing grants and “real world” training and technical assistance to our key audiences: purchasers of publicly-financed health care, managed care organizations, and consumer groups. The Center for Health Care Strategies organizes its activities around the following areas: Informed Purchasing, Managed Care Best Practices, and Consumer Action.

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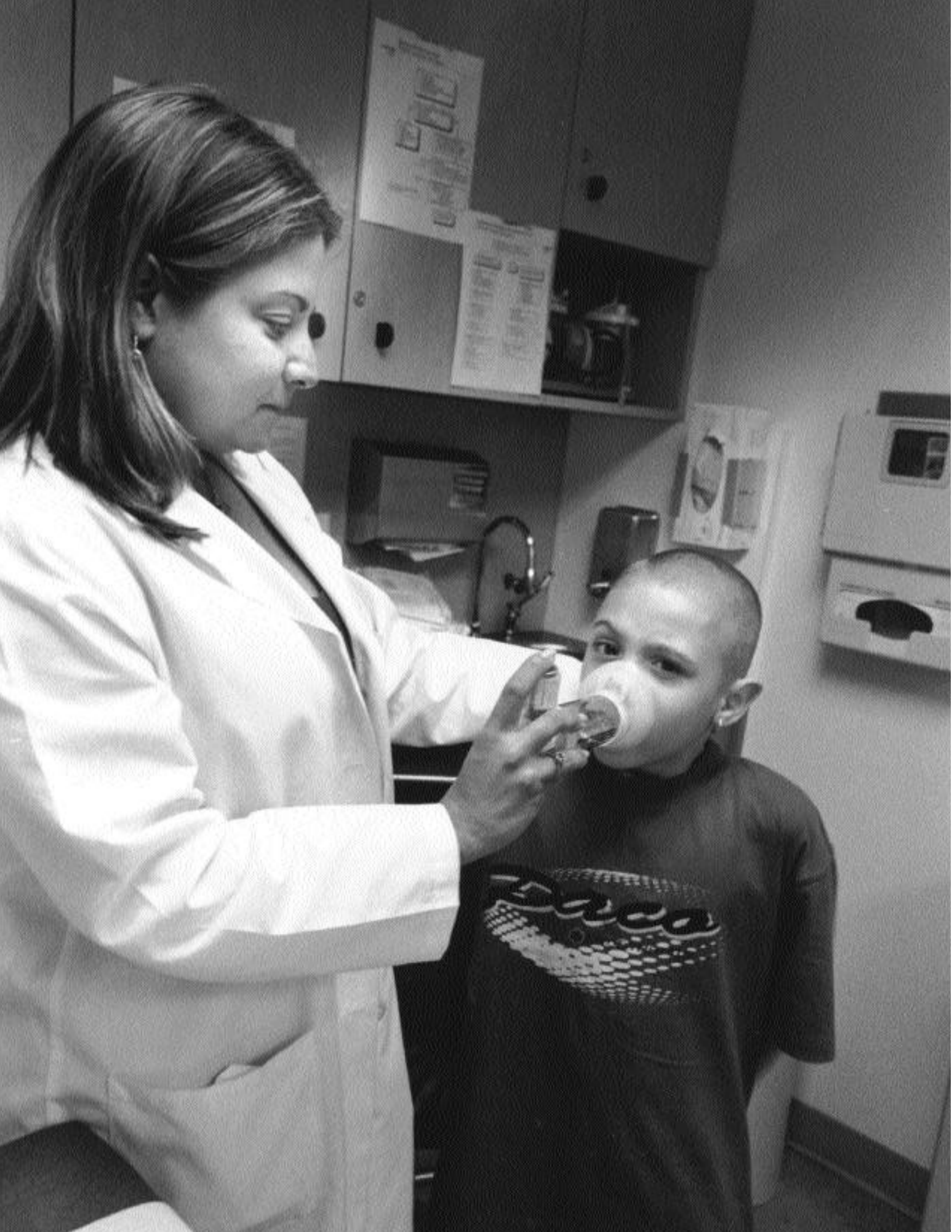
Mel Rosenthal

Asthma Care for Children: Financing Issues *A CHCS Chartbook*

October 2001

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Introduction

The precipitous rise of asthma in the United States, particularly among children, has vast health, quality of life, and economic implications for patients, their families, providers, health care insurers, and the public health system. Asthma is more prevalent in children than adults, and children often suffer unnecessarily due to gaps in insurance coverage. Asthma is the highest-ranked cause of pediatric hospitalizations and the number one reason for school days missed per year.¹ Although the causes and treatment of pediatric asthma have been heavily researched, little attention has been given to issues of coverage, finance, and delivery of services.

The Center for Health Care Strategies (CHCS) prepared *Asthma Care for Children: Financing Issues* to help states, health plans, and policymakers design more effective health care delivery systems for children with asthma. Although the available data from 1996 may present a somewhat incomplete picture, CHCS gathered evidence to attempt to answer three key questions:

Who are the children with asthma? What are the health and economic impacts of childhood asthma? Who pays for children's asthma care?

This chartbook identifies the population of children with asthma and tracks asthma-related costs in private and publicly financed health care systems. The economic impact of pediatric asthma on families and the health care system is illustrated through data comparing the prevalence, costs, and severity of pediatric asthma in the commercial and public sectors. The true story of a child with asthma living in the South Bronx of New York is interwoven throughout the book to connect the economic realities with an intimate look at the growing population of children with asthma.

Asthma Care for Children: Financing Issues is the second in a series of chartbooks published by CHCS to help states, health plans, and policymakers improve the design and delivery of health care services for people with chronic illnesses and disabilities. This chartbook was produced as part of *Exploring Barriers to the Financing and Treatment of Pediatric Asthma*, an 18-month initiative coordinated by CHCS. *Exploring Barriers* is investigating the current limits on financing and treatment for pediatric asthma. The initiative is funded by a grant from The Robert Wood Johnson Foundation.

Data Notes

The CHCS research team, led by Laura Summer, Center on an Aging Society at Georgetown University, gathered the data for this chartbook through an analysis of Medical Expenditure Panel Survey (MEPS) data. MEPS offers a nationally representative sub-sample of households that participated in the 1995 National Health Interview Survey. Beginning in 1996 the National Health Interview Survey was redesigned, therefore there are limitations in conducting trend analyses after 1995. The chartbook uses relevant state data to forecast national trends after 1996.

¹National Academy on an Aging Society. *Data Profile: Childhood Asthma*. No. 8. June 2000.



◀ Asthma: A Family Portrait

Sierra Padilla*, who is 22 years old, lives with her son and two daughters in a spare two-bedroom apartment in a high-rise public housing project in the South Bronx. Her children's ages are two months, three, and seven. The apartment has no cross ventilation. On warm days, the air is stagnant and suffocating. Her oldest, a sloe-eyed boy named Isaiah, has asthma. He is a sensitive child, who finds it difficult to relax. "If you hurt his feelings, he'll cry – an emotional cry – then he'll go into an attack right there," says Sierra. Ear infections seem to trigger attacks as well. Until Sierra re-qualified for Medicaid, the emergency room was her routine response. Isaiah now has his own asthma machine, which he hides in a closet. He knows to assemble it when he feels his small chest begin to get tight. Isaiah usually brings a pump to school. He shoves it down into the deep pockets of his baggy pants. Sierra sometimes allows him to forget the aerochamber. She feels badly that her son has to carry the equipment of illness; he feels ashamed.

*names have been changed

Demographics: Who Has Asthma?

Asthma is most prevalent in children living below the poverty line. The Pew Environmental Health Commission estimates that 15 percent of asthma cases among the poor are attributable to poverty.² While all children with asthma are three times more likely than children without asthma to miss more than two weeks of school per year, it is the children from low-income populations and certain racial and ethnic groups who are most likely to report fair or poor health due to the disease. Socioeconomic factors that contribute to higher severity of asthma among children in low-income populations include: higher exposure to indoor and outdoor "triggers" in the environment, limited access to quality medical care, language and literacy barriers, and lack of financial resources and social supports for patients and their families to learn proper self-management techniques.

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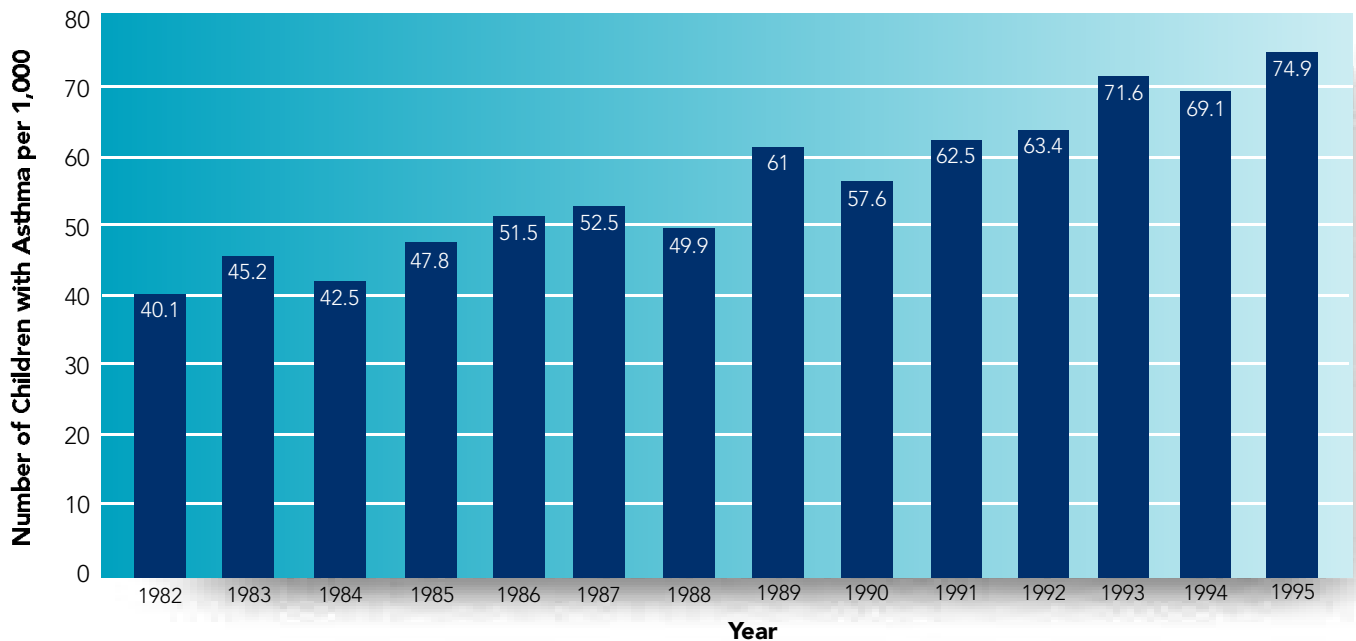
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²The Pew Environmental Health Commission. *Attack Asthma: Why America Needs a Public Health Defense System to Battle Environmental Threats*. The Johns Hopkins School of Public Health, Baltimore, Maryland. 2000.

Many more children have asthma now than in the past.

Prevalence rates for asthma have increased significantly in the last two decades, with the most substantial increases occurring among children.³ The prevalence rate for asthma in 1982 was 40 of every 1,000 children.⁴ By 1995, the rate had increased to 75 of every 1,000 children. If this trend continues, the prevalence of asthma among children age six to 16 will potentially rise to 14 percent by 2020.⁵

Figure 1-1: Number of Children with Asthma per 1,000 Children, 1982 to 1995



Note: 1995 is the most current year for which comparable trend data are available.

Source: National Center for Health Statistics, *National Health Interview Survey*. 1982-1995.

³ Mannino D.M., Horma D.M., Pertowski C.A., Ashizawa A., Nixon L.L., Johnson C.A., Ball L.B., Jack E., Kang D.S. "Surveillance for Asthma-United States, 1960-1995." *MMWR Surveillance Summaries*. 1998, 47(SS-1);1-28.

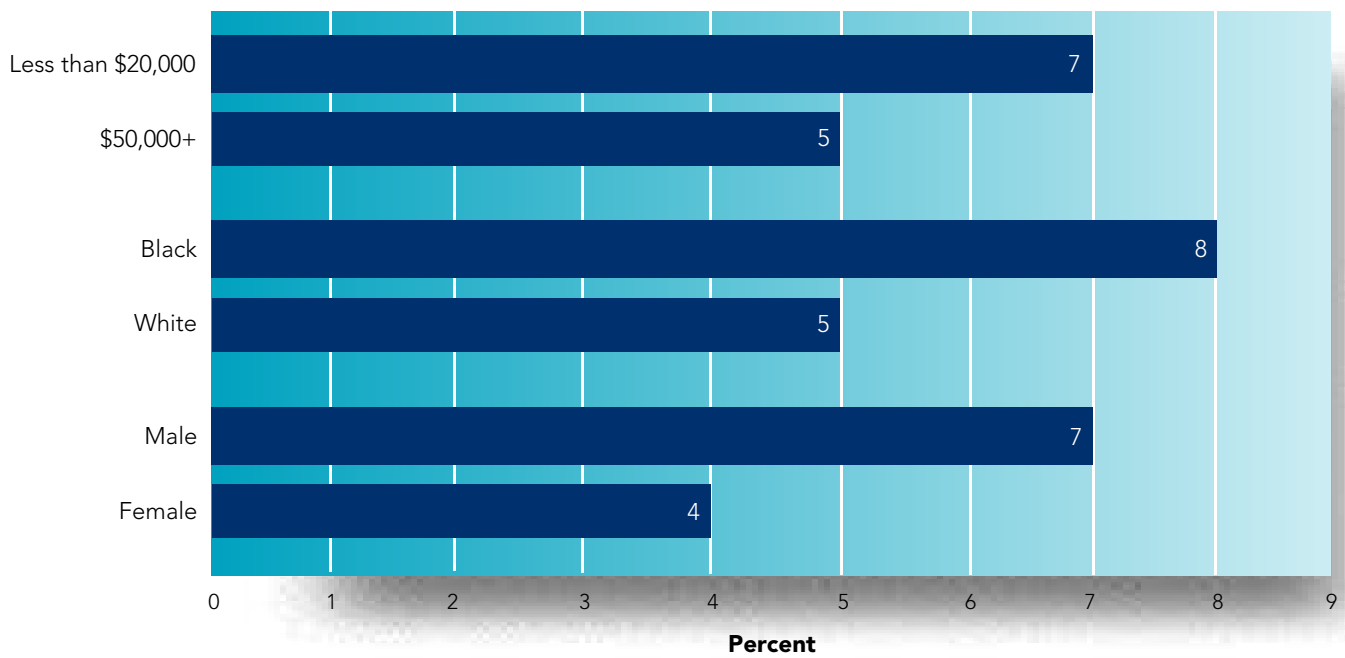
⁴ National Center for Health Statistics. "National Health Interview Survey, 1982-1996." *Trends in Asthma Morbidity and Mortality*. Table 6. American Lung Association, Epidemiology and Statistics Unit, February 2000.

⁵ The Pew Environmental Health Commission, op. cit.

Some children are more likely to have asthma than others.

More than four million children — about five percent of all children under age 18 — had asthma in 1996. By 1999, the estimated number of children with asthma increased to five million.⁶ The prevalence of asthma differs significantly among population groups. Differences in the prevalence of asthma among racial and income groups may be a reflection, in part, of discrimination or limited access to health care.^{7,8} Environmental factors also may contribute to the differences.

Figure 1-2: Proportion of Children with Asthma, by Income, Race, and Gender, 1996



Source: Center on an Aging Society analysis of data from the 1996 Medical Expenditure Panel Survey.

⁶ “Pediatric Asthma: Promoting Best Practices.” American Academy of Allergy, Asthma and Immunology. 1999.

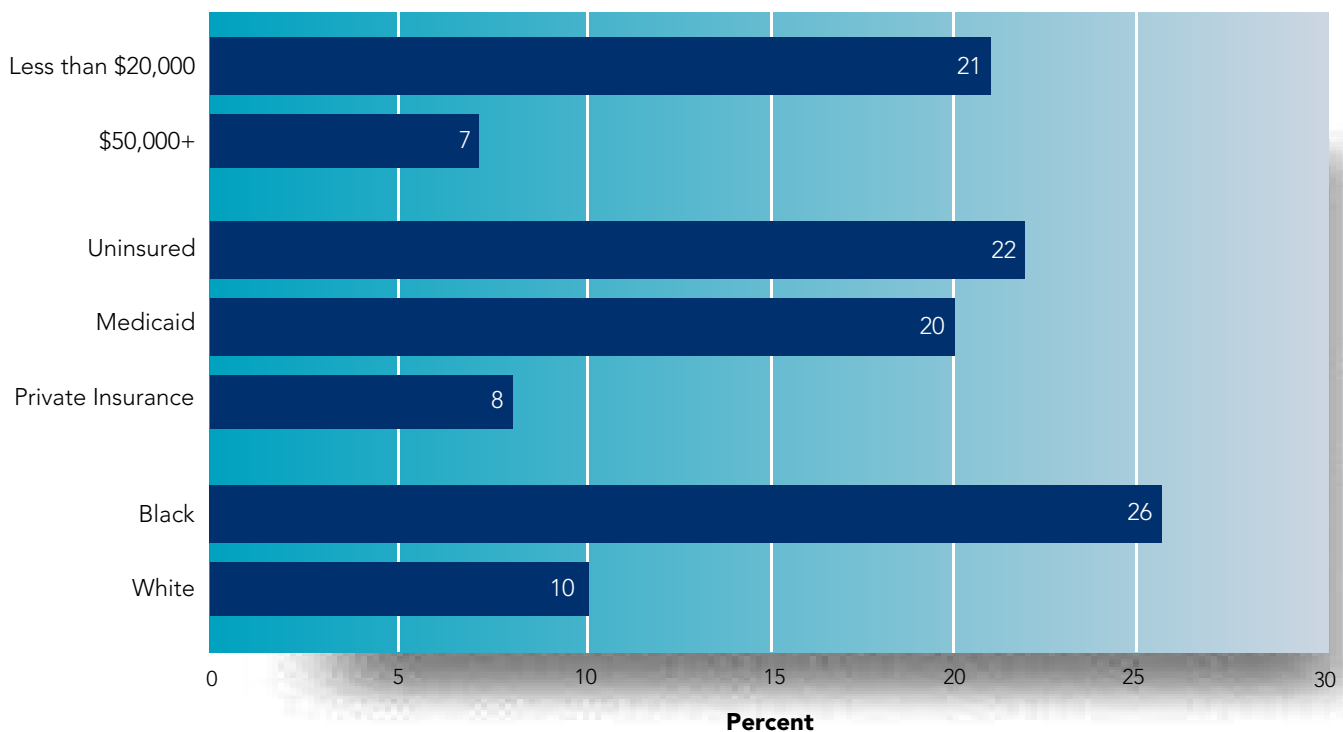
⁷ Weiss K.B., Gergen P.J., and Hodgson T.A. “An Economic Evaluation of Asthma in the United States.” *New England Journal of Medicine*. 1992, 326:862-866.

⁸ Weiss K.B., Sullivan S.D., and Lyttle C.S. “Trends in the Cost of Illness for Asthma in the United States, 1985-1994.” *Journal of Allergy and Clinical Immunology*. 2000, 106(3):493-99.

Black children and those living in poverty tend to suffer more severe cases of asthma.

Millions of children are living with asthma, but not all of them are affected in the same way. The condition tends to have a greater impact on black children and children in low-income families. For some children, asthma has only a minimal effect, but others must follow a strict regimen to control the condition. Some children must be treated on an emergent basis for asthma episodes that can be life threatening. Generally, black children with asthma have higher rates of emergency department visits and hospitalization than white children with asthma. And black children have higher death rates associated with asthma.⁹ Rates of asthma flare-ups and emergency care for asthma also are higher for families living in poverty than for children in higher income groups.¹⁰

Figure 1-3: Proportion of Children with Asthma Reporting Fair or Poor Health, 1996



Source: Center on an Aging Society analysis of data from the 1996 Medical Expenditure Panel Survey.

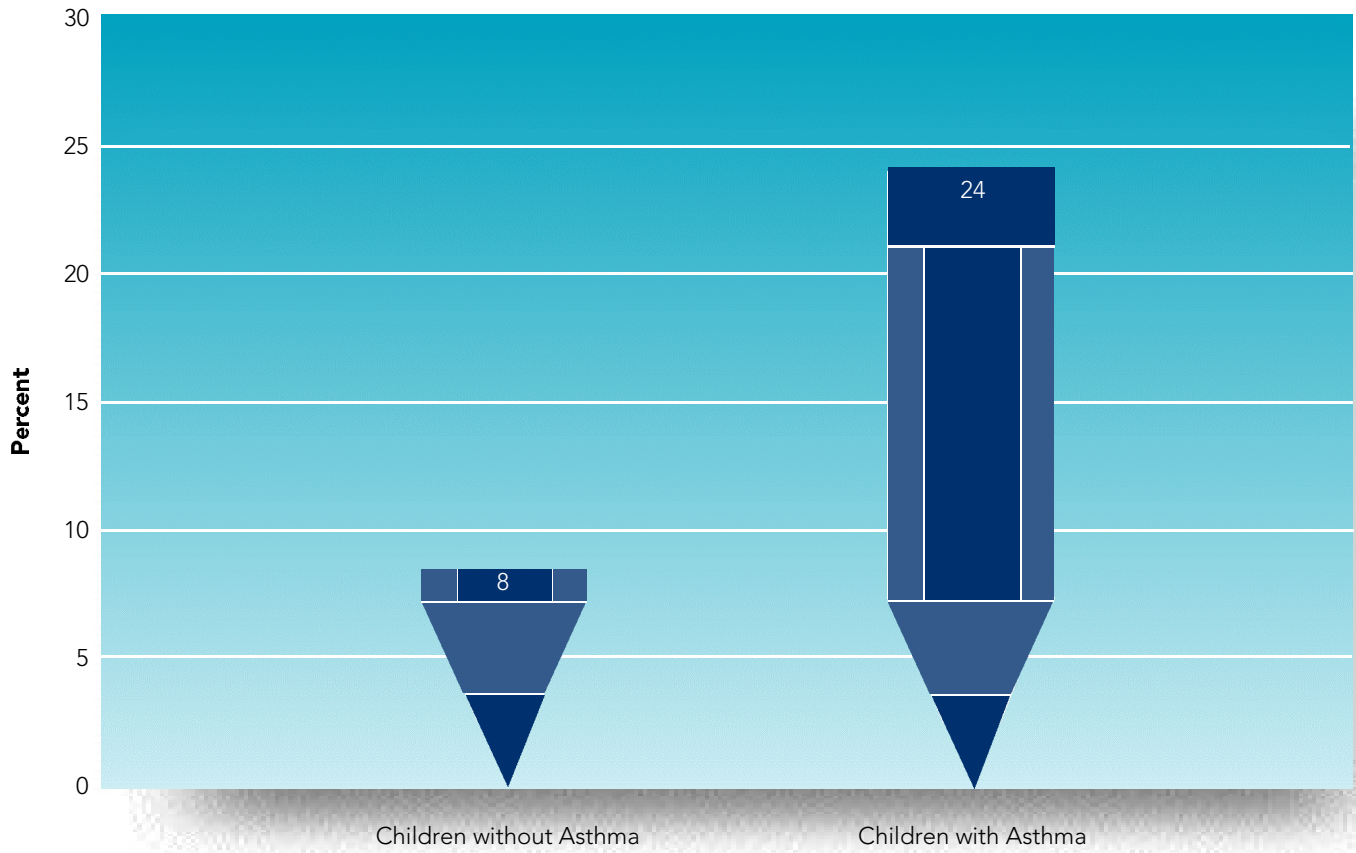
⁹ Mannino, et al., op. cit.

¹⁰ The Pew Environmental Health Commission, op. cit.

Asthma affects school attendance.

Asthma is the primary chronic condition causing school absences. Almost one quarter of children with asthma – 24 percent – reported missing more than two weeks of school in 1996. Estimates indicate that asthma accounts for a loss of more than 10 million school days annually.¹¹

Figure 1-4: Proportion of Children Missing Two or More Weeks of School, 1996



Source: Center on an Aging Society analysis of data from the 1996 Medical Expenditure Panel Survey.

¹¹ Weiss K. et al., op. cit.



◀ Asthma: A Family Portrait

Isaiah is especially vulnerable, beyond the endemic vulnerabilities associated with poverty. His parents split after a seven-year relationship. For the past year, his mother has had a new boyfriend. Two months ago, she had a baby girl. Sierra is now consumed with the baby, who was born with jaundice. Sometimes Sierra's sister, Jasmine, visits with her children. But two of Jasmine's kids suffer from asthma, and Jasmine seems to spend most of her time in the emergency room. "The kids take turns. I told her [my sister], you should leave panties there, and a toothbrush," Sierra says affectionately. Little else punctuates the yawning days she spends, locked in the airless apartment, with restless children. Only appointments do – to the clinic, to welfare, to recertify for WIC. Sierra has been on and off of public assistance and, with the exception of a stint at a movie theater, she has been unemployed. She is regularly broke. She dropped out of school in ninth grade, when she became pregnant with Isaiah. Sierra doesn't always have money for bus fare. She pushes the baby in the stroller and cajoles Tiffany, her three-year-old, along. Local excursions can take up to five hours.

Expenditures: What is the Economic Impact of Asthma?

In 1996, \$4.6 billion was spent caring for children with asthma in the United States. Children with asthma incur more than twice the health care costs of children without asthma. In particular, the expense of prescription drugs and office-based visits are disproportionately higher for children with asthma. Prescription drugs represent 40 percent and office-based visits 30 percent of their spending. However, the economic impact of asthma is not uniformly distributed among children. Children with asthma with the highest health care expenditures cost 28 times more than children with asthma with the lowest costs. Some experts estimate that 50 percent of the economic impact of asthma is associated with severe asthma exacerbations rather than the management of chronic stable asthma.¹²

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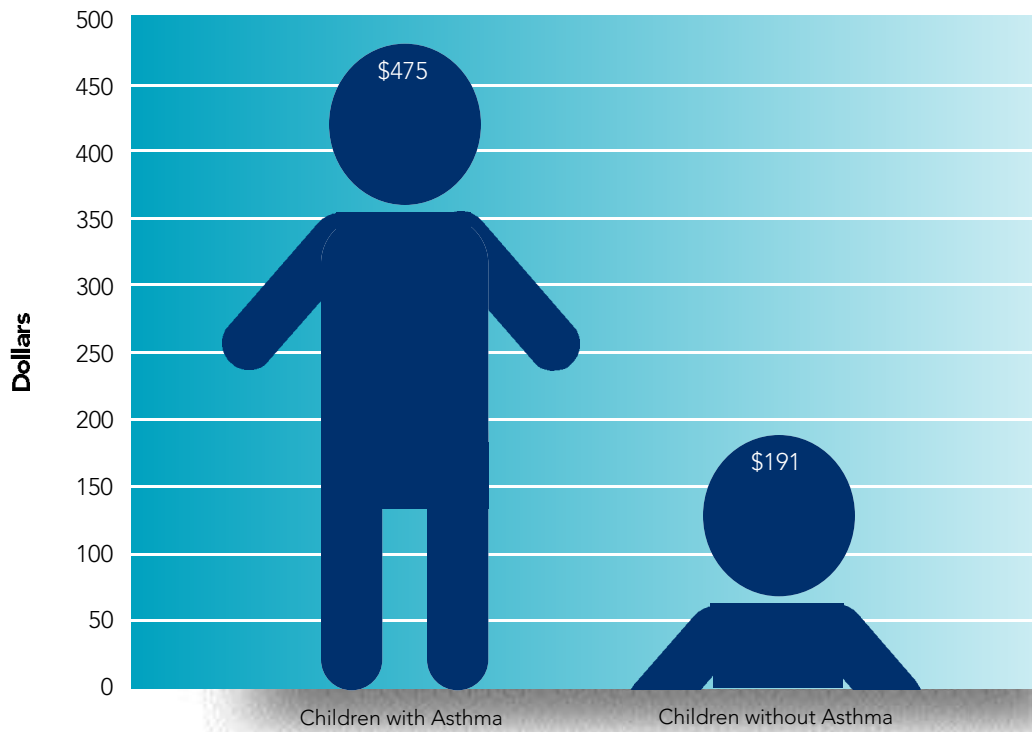
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2-6	Median Annual Expenditures for Particular Services, for Children with and without Asthma, 1996

¹² Camargo C., Department of Emergency Medicine, Massachusetts General Hospital, and research epidemiologist, Harvard Medical School, testimony before the U.S. Senate Committee on Health, Education, Labor, and Pensions, Subcommittee on Public Health, hearing on "Children's Health: Protecting Our Most Precious Resource." September 16, 1999.

Health care costs for children with asthma are more than twice as high as for children who do not have asthma.

Median annual health care expenditures for children with asthma were \$475 in 1996, considerably more than the median expenditures spent on health care for children who do not have asthma.

Figure 2-1: Median Annual Health Care Expenditures for Children with and without Asthma, 1996

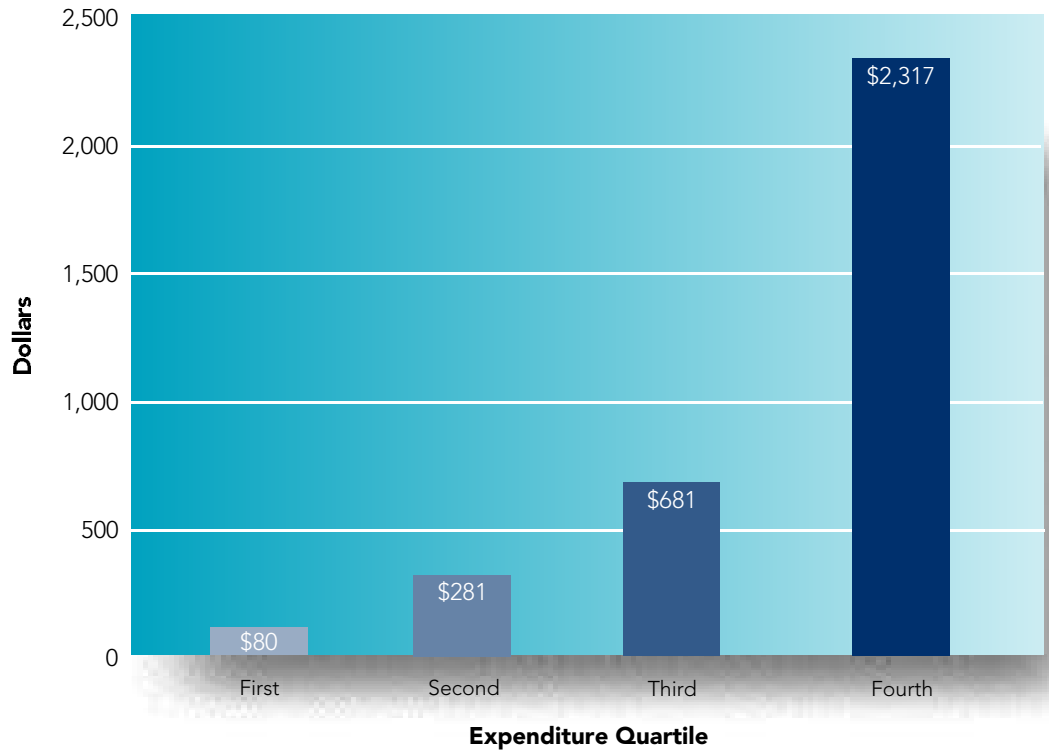


Source: Center on an Aging Society analysis of data from the 1996 Medical Expenditure Panel Survey.

A small proportion of children with asthma cost the most.

Even among children with asthma, health care use and expenditures are not evenly distributed. Most health care expenditures are concentrated within a small group of children who have asthma.

Figure 2-2: Median Annual Health Care Expenditures for Children with Asthma, 1996

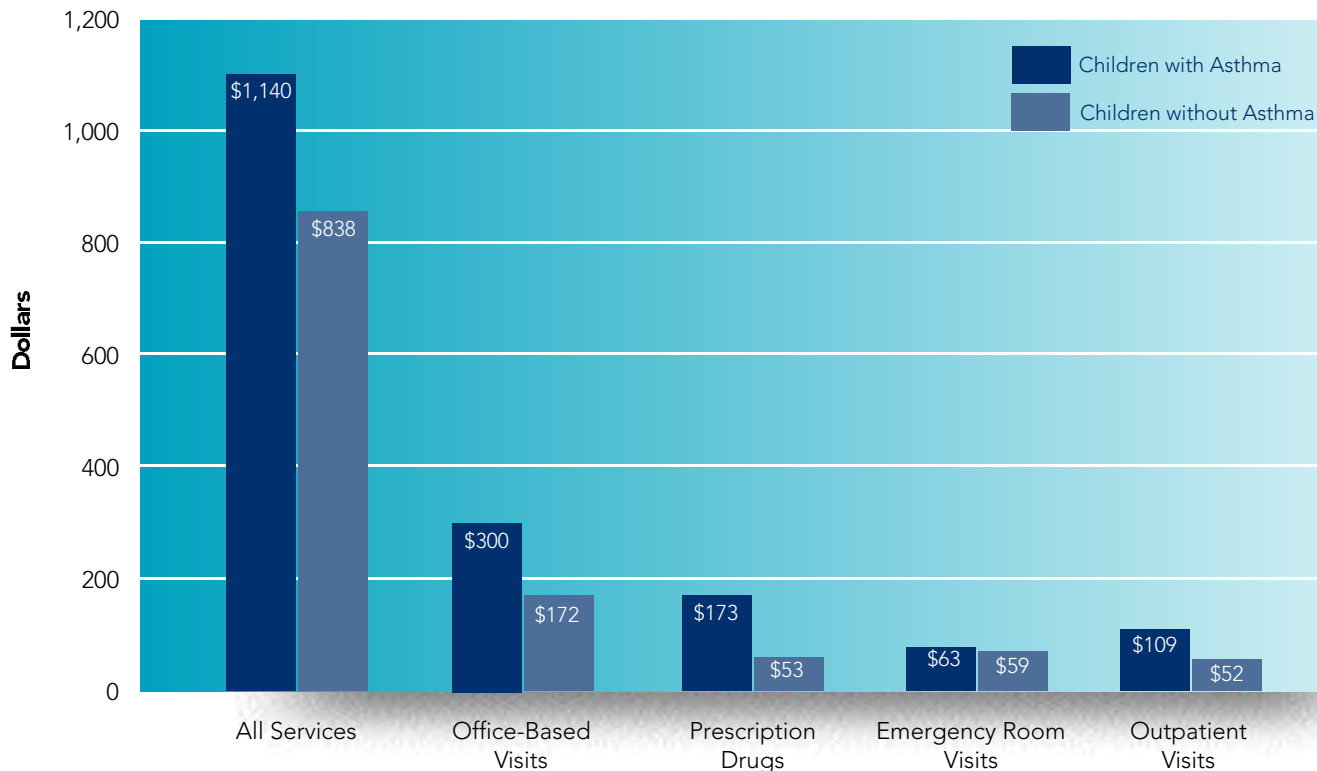


Source: Center on an Aging Society analysis of data from the 1996 Medical Expenditure Panel Survey.

Health care expenditures for particular services are higher for children with asthma than for children without asthma.

Annual expenditures for health care services are one-third higher for children who have asthma than for children who do not have the condition.

Figure 2-3: Health Care Expenditures per Child for Children with and without Asthma, 1996

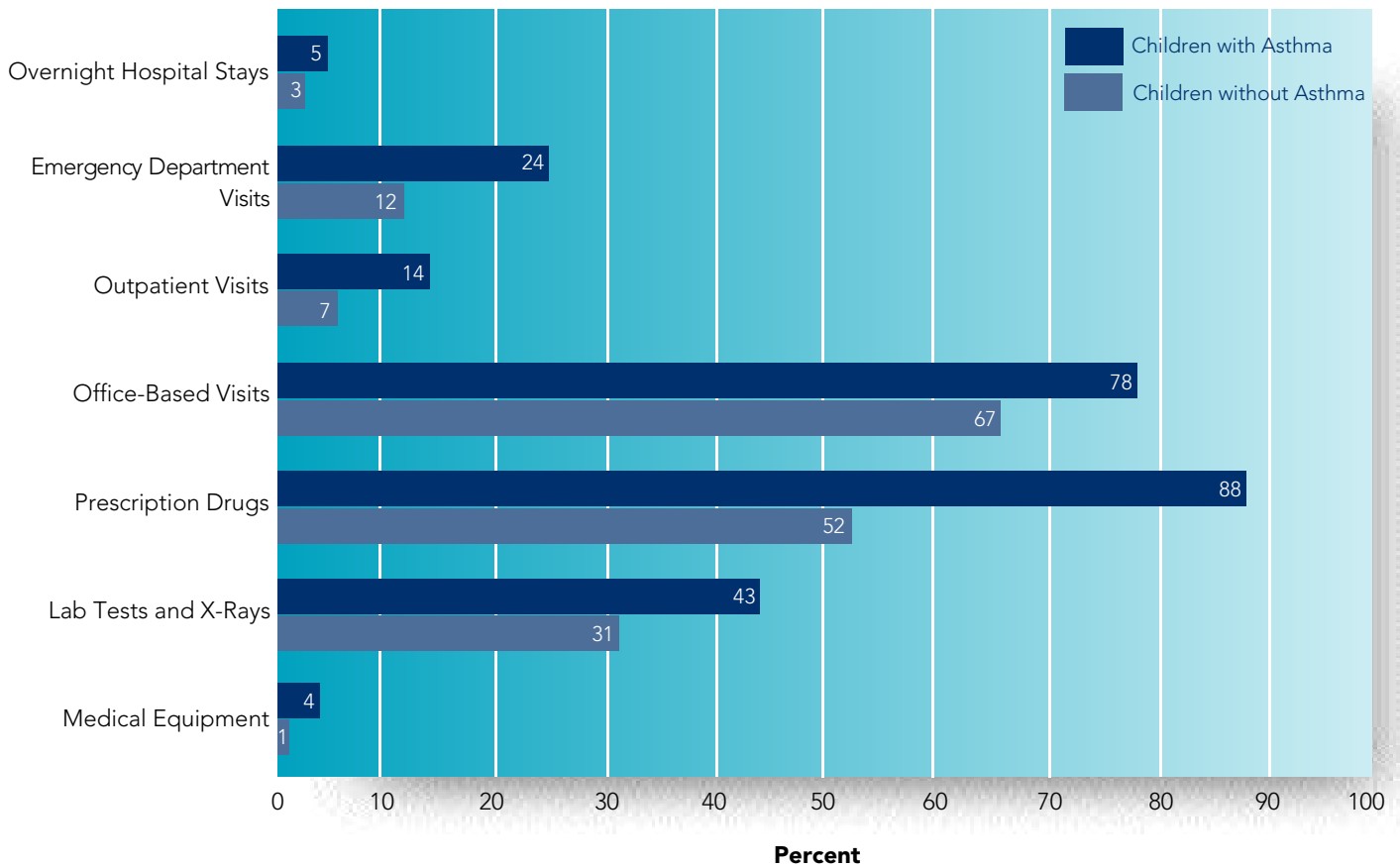


Source: Center on an Aging Society analysis of data from the 1996 Medical Expenditure Panel Survey.

Children with asthma are more likely to use health care services.

Children with asthma are more frequent users of a variety of health care services than children who do not have asthma. In particular, a large proportion of children with asthma – 88 percent – take one or more prescription drugs, compared to 52 percent of children who do not have asthma.

Figure 2-4: Proportion of Children with and without Asthma Using Services One or More Times in the Past Year, 1996

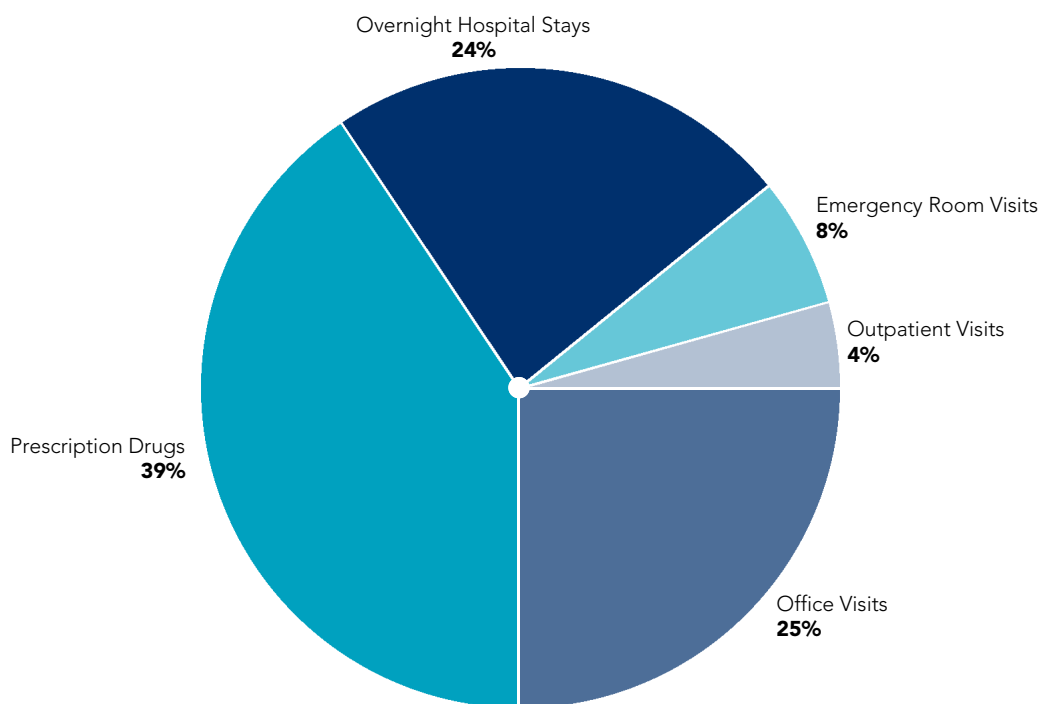


Source: Center on an Aging Society analysis of data from the 1996 Medical Expenditure Panel Survey.

Prescription drugs are a major expenditure for children with asthma.

Based on 1996 data, prescription drugs represent the largest component of asthma-related health care expenditures for children, accounting for almost 40 percent of all spending. It is likely that this figure has grown substantially since 1996, based on overall cost increases in pharmaceuticals and increased use of steroid inhalers. Trend data show that for everyone with asthma, regardless of age, the proportion of total asthma-related costs attributed to prescription drugs increased from 30 percent in 1985 to 39 percent in 1996. At the same time, the proportion of costs represented by inpatient hospital stays declined, primarily because of a decrease in lengths of stay.¹³

Figure 2-5: Proportion of Total Asthma-Related Expenditures for Children, by Type of Service, 1996



Note: Expenses for laboratory, x-ray, and medical equipment services are included with expenditures for the site of service.

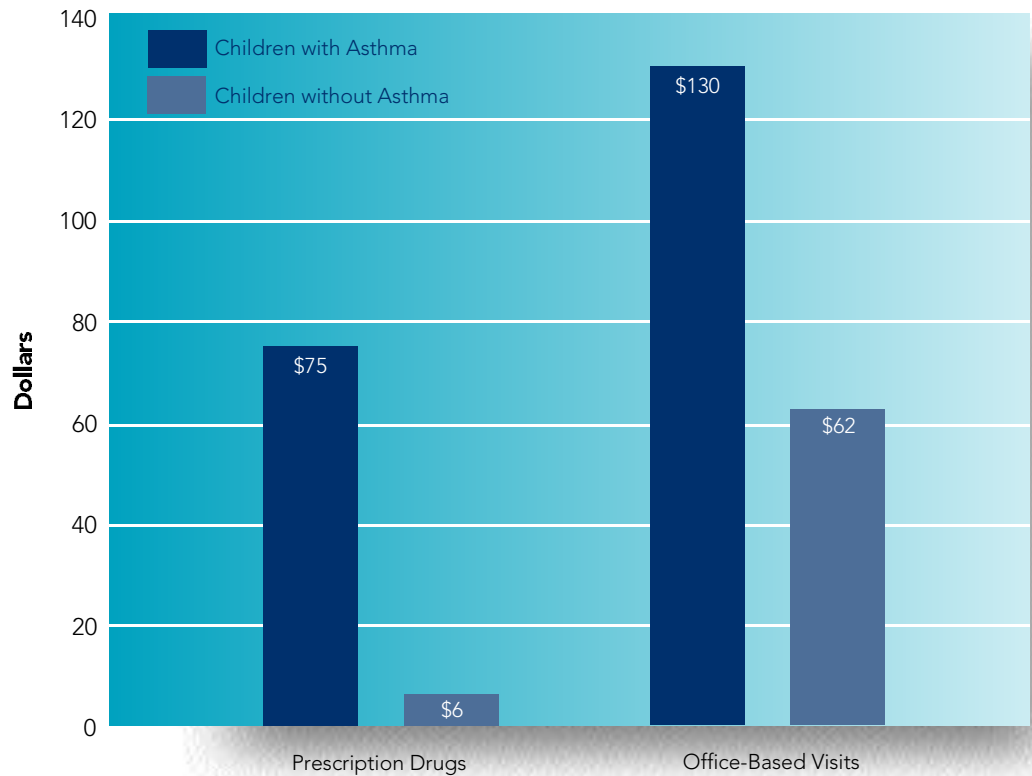
Source: Center on an Aging Society analysis of data from the 1996 Medical Expenditure Panel Survey.

¹³Weiss K. et al., op. cit.

Costs for particular services differ for children with and without asthma.

Median annual expenditures for prescription drugs are more than 12 times higher for children with asthma than for children who do not have asthma. The cost of office-based visits is twice as high for children with asthma than for children without asthma.

Figure 2-6: Median Annual Expenditures for Particular Services, for Children with and without Asthma, 1996



Source: Center on an Aging Society analysis of data from the 1996 Medical Expenditure Panel Survey.



◀ Asthma: A Family Portrait

Weekdays, Sierra collects Isaiah from his after-school program. She feeds and bathes the children. She cleans the apartment after she ushers them all to bed. It's impossible to get anything done with them underfoot. At midnight, sometimes one or two, she listens to music and sweeps and mops. Dust aggravates Isaiah's asthma. Sierra also worries about the paint chips that flake off the walls because Tiffany tested positive for lead. The roaches, however, always win. The sprays make her son cough. When Sierra worked at the movie theater, she had enough money to buy name-brand cleaning products – Clorox, Lysol, Mr. Clean. She believes the expensive products were better than those she now buys at the dollar store.

Payer Distribution: Who Pays for Asthma Care?

Almost one third of children with asthma are covered under Medicaid. Medicaid beneficiaries use health services differently than individuals covered under commercial insurance. Children covered under Medicaid are more likely to use hospital-based health services, while children with private insurance tend to make more office-based visits and use more prescribed drugs to treat their asthma. However, these statistics are from 1996 data – when Medicaid managed care programs were in their infancy. Today, some states report significantly decreased hospital service utilization among their Medicaid managed care pediatric asthma populations since 1996. In New York City, hospitalization rates for children with asthma decreased by 35 percent from 1997 to 2000.¹⁴

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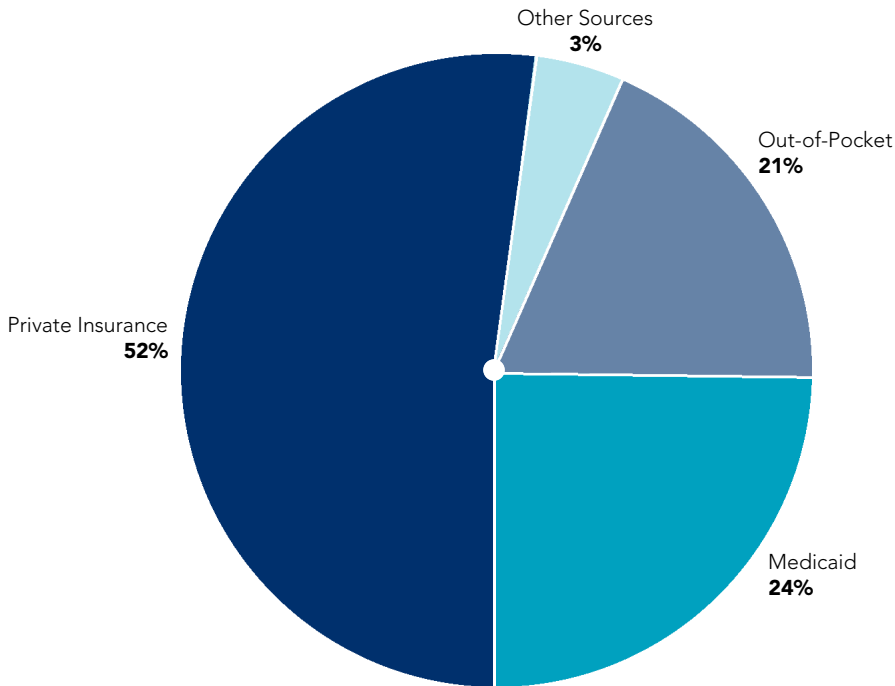
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¹⁴New York City Department of Health, Statewide Planning and Research Cooperative System.

One-fifth of health care expenditures for children with asthma are paid out-of-pocket.

Private insurers pay about half of the cost of health care for children with asthma. The Medicaid program covers about one-quarter of the costs. In 1996, the Medicaid program paid more than \$1.1 billion for health services for children with asthma. The families of children with asthma pay for most of the remaining costs.

Figure 3-1: Health Care Expenditures for Children with Asthma, by Payer, 1996



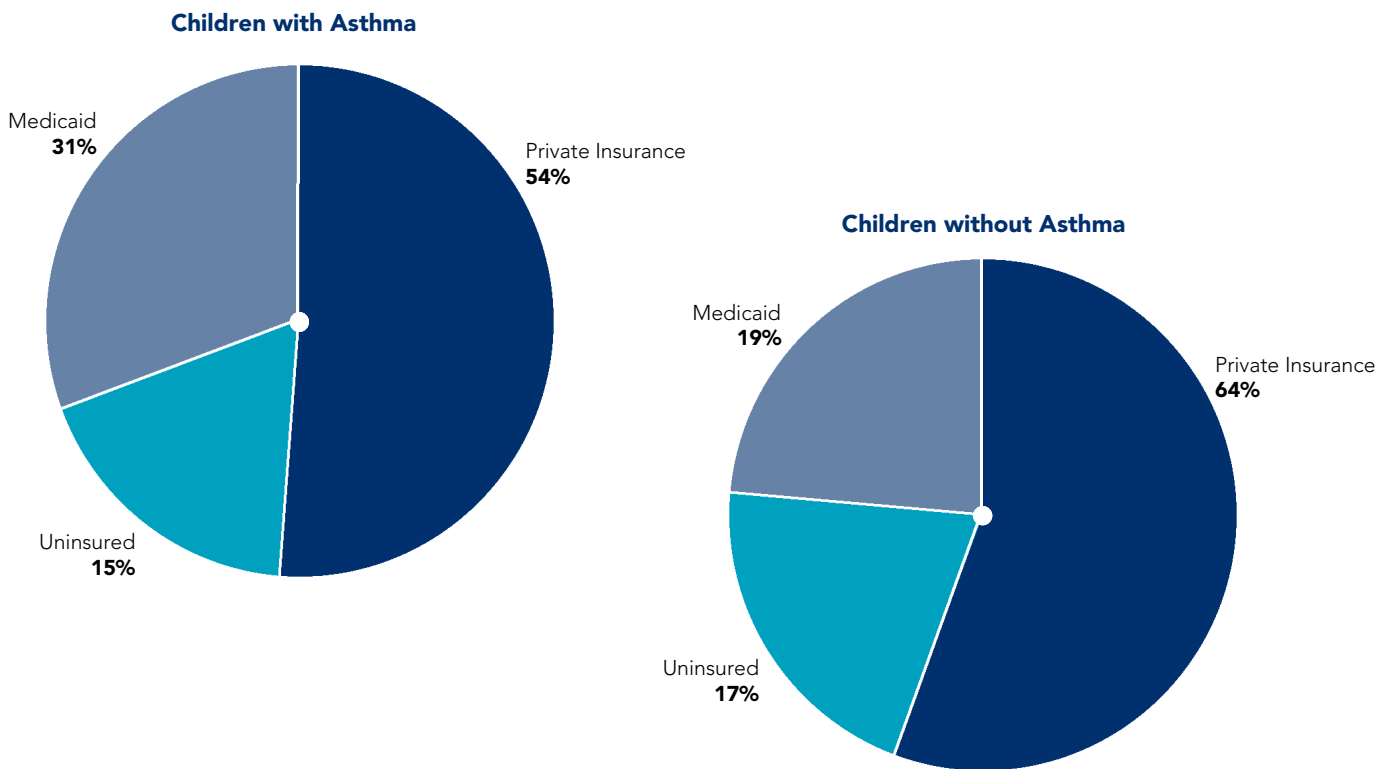
Total health care expenditures for children with asthma in 1996 = \$4,604,534,917

Source: Center on an Aging Society analysis of data from the 1996 Medical Expenditure Panel Survey.

Children with asthma are more likely than children without asthma to have Medicaid coverage.

The Medicaid program provides coverage for almost one-third of children with asthma, but only for about one-fifth of children who do not have asthma. Private health insurance covers a smaller proportion of children with asthma than children without asthma. The Medicaid program likely is providing coverage for some children with asthma who otherwise would be uninsured. Although the data are not yet available, coverage expansions associated with the State Children’s Health Insurance Program will add to the proportion of children with asthma who are beneficiaries of publicly financed coverage programs.

Figure 3-2: Insurance Coverage for Children with and without Asthma, 1996*



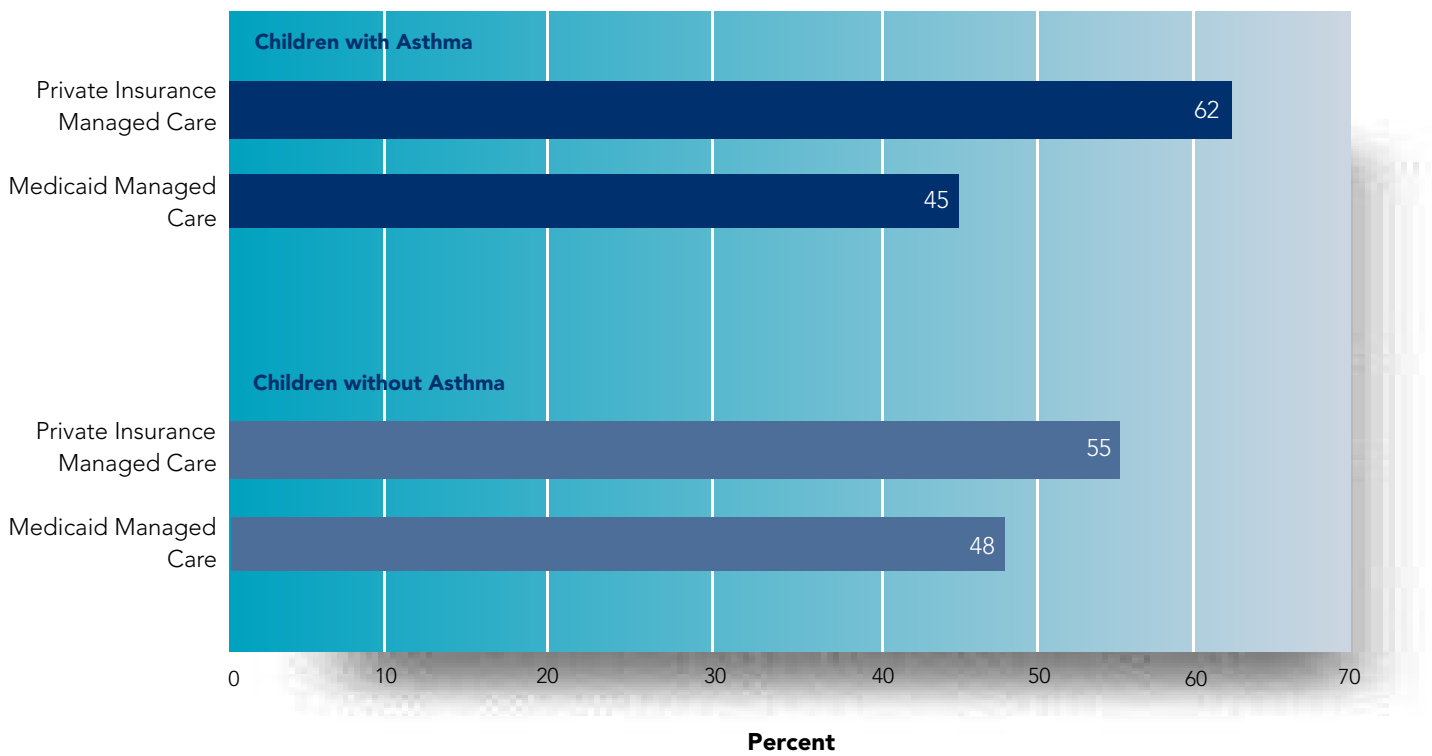
* Figures are rounded to total 100 percent. Slight overlap exists among categories. Medicare and Champus (under one percent of total children covered) are not represented.

Source: Center on an Aging Society analysis of data from the 1996 Medical Expenditure Panel Survey.

A substantial proportion of children with asthma are enrolled in managed care organizations.

In 1996, just over 60 percent of the children with asthma and private insurance were enrolled in managed care plans. Based on an overall increase in managed care enrollment in both private and public insurance since 1996, it is likely that a larger proportion of children with asthma and Medicaid coverage are currently enrolled in managed care plans. By 2000, almost 56 percent of Medicaid recipients were enrolled under managed care.¹⁵

Figure 3-3: Proportion of Children with and without Asthma, with Managed Care Coverage, 1996



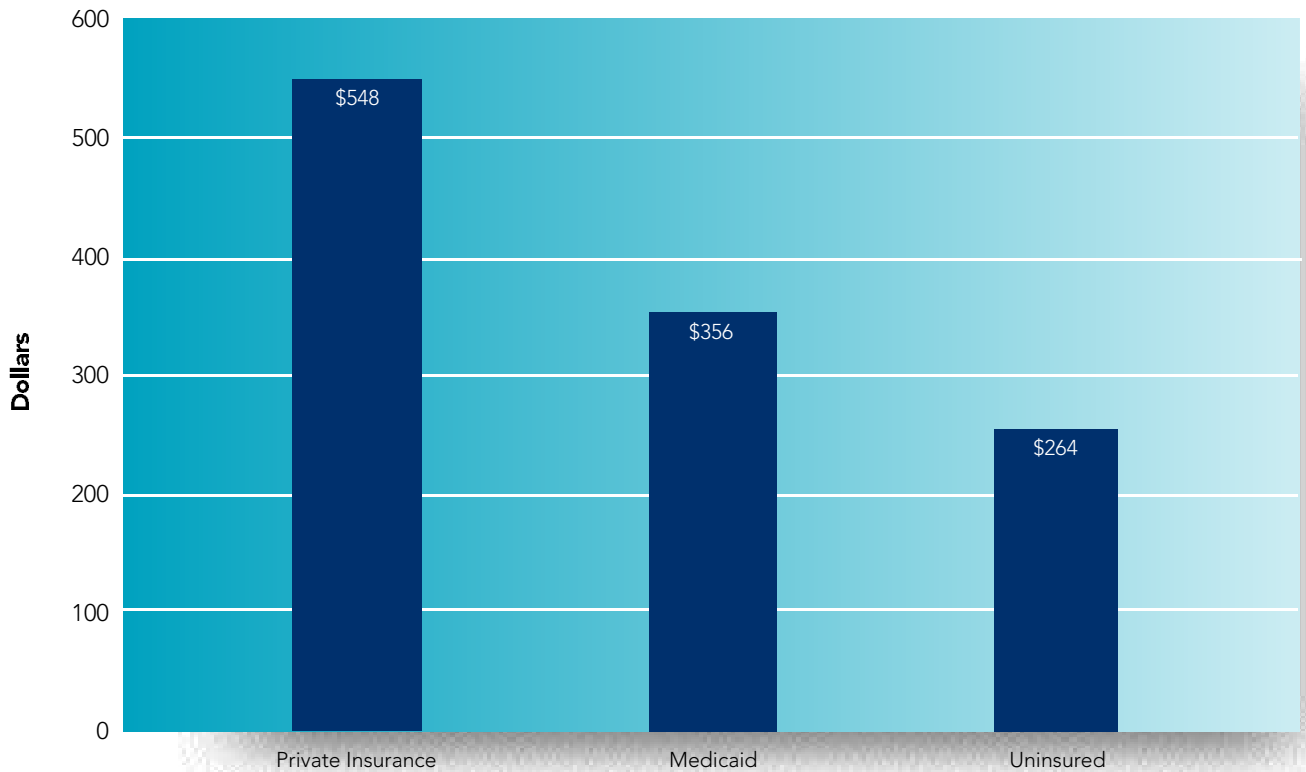
Source: Center on an Aging Society analysis of data from the 1996 Medical Expenditure Panel Survey.

¹⁵ www.hcfa.gov/medicaid/trends00.pdf.

Health care expenditures differ by type of insurance.

Median annual health care expenditures for children with asthma are considerably higher for those with private health insurance than for those who have Medicaid coverage. Expenditures for those who have no insurance are, not surprisingly, the lowest. Differences in spending may reflect a number of factors, including the number and types of services covered, and the rates paid by the insurers. Figure 3-5 (pg. 22) reveals that although expenditures are lower for those on Medicaid, this population is more likely to use hospital-based and emergency services for asthma care needs.

Figure 3-4: Median Annual Health Care Expenditures for Children with Asthma, by Insurance Type, 1996

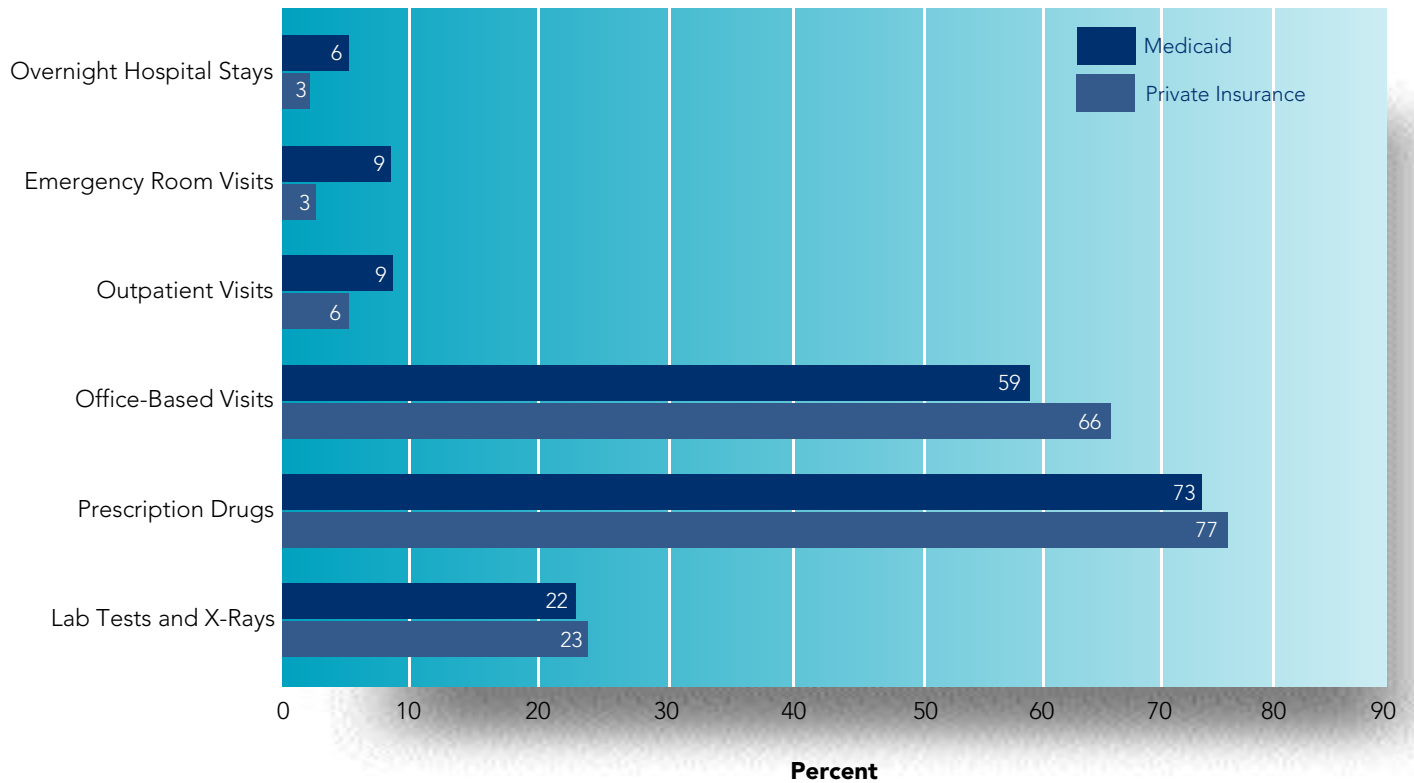


Source: Center on an Aging Society analysis of data from the 1996 Medical Expenditure Panel Survey.

Health service use differs by insurance status for children with asthma.

In 1996, the use of hospital-based services by children with asthma was higher for children covered by Medicaid than for children with private health insurance. Among children with asthma, the rate of multiple emergency room visits was three times higher for those covered by Medicaid. Service-use patterns likely have changed since 1996 with the increase in Medicaid managed care enrollment. Data from the Tennessee Health Department show, for example, that three years after a statewide Medicaid managed care program was implemented, the rate of emergency room visits was 14 percent lower.¹⁶

Figure 3-5: Health Service Use by Children with Asthma, by Insurance Type, 1996 (use of services two or more times in the past year)



Source: Center on an Aging Society analysis of data from the 1996 Medical Expenditure Panel Survey.

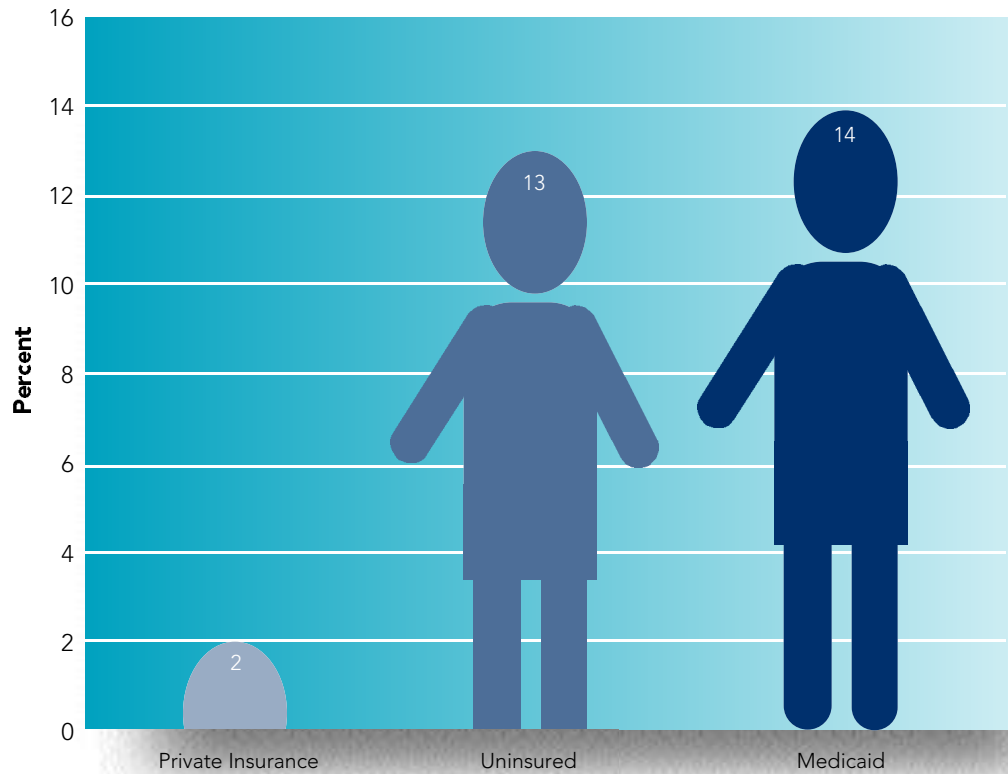
¹⁶ Conover C.J. and Davies H.H. *The Role of TennCare in Health Policy for Low-Income People in Tennessee*. The Urban Institute. Washington, DC, 2000.

Children with asthma may not be getting all the care they need.

Children without a usual source of care are less likely than other children to receive the full set of preventive, primary, and supportive services needed for effective asthma management. Families of more than half a million children with asthma – 14 percent of all children with asthma – indicate that their children had difficulty obtaining health care services. The reason for the difficulty cited by the majority of families is that they could not afford the care or that insurance did not cover the care.

Data presented in this chartbook report families' experiences from 1996, just as Medicaid managed care and improvements in provider access were taking place across the nation. Future studies should examine the extent to which managed care programs may help families more readily identify and seek care from a usual source of health care.

Figure 3-6: Proportion of Children with Asthma Who Do Not Have a Usual Source of Health Care, by Insurance Type, 1996



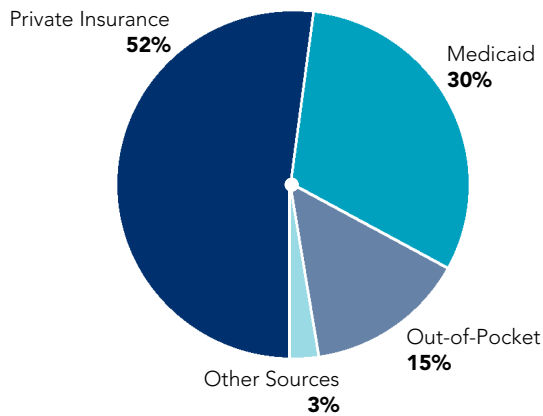
Source: Center on an Aging Society analysis of data from the 1996 Medical Expenditure Panel Survey.

The proportion of costs covered by each payer differs by type of service.

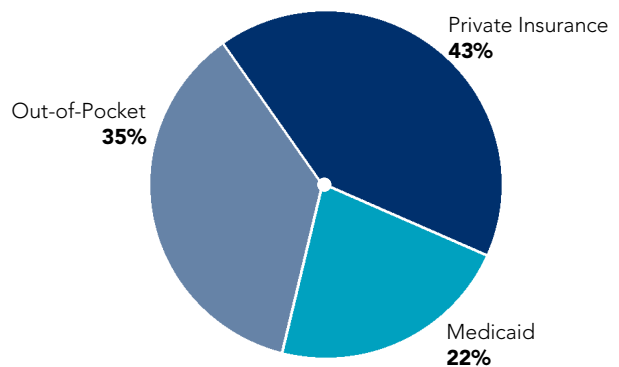
In 1996, private health insurance paid for a large proportion of costs regardless of the type of service. Payment patterns were different for particular services, however. For example, 15 percent of emergency room costs, 22 percent of the costs of office visits, and 35 percent of prescription drug costs were paid out-of-pocket. As insurance coverage changes, the portion of expenditures covered by different payers may change as well. See Figure 3-2 for a breakdown of insurance coverage for children with and without asthma.

Figures 3-7: Health Care Expenditures for Selected Services for Children with Asthma, by Payer, 1996

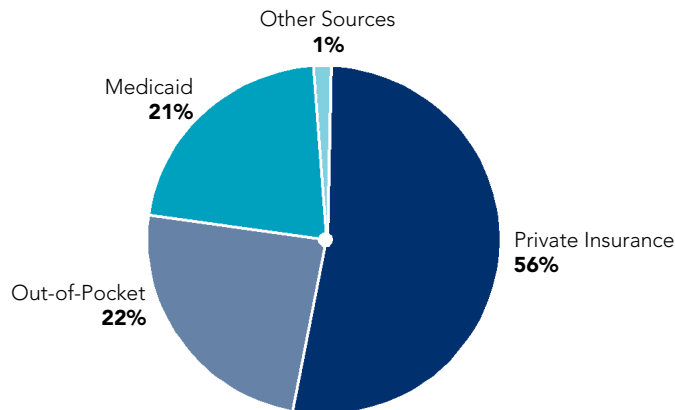
a: Health Care Expenditures for Emergency Room Visits for Children with Asthma, by Payer, 1996



b: Health Care Expenditures for Prescription Drugs for Children with Asthma, by Payer, 1996



c: Health Care Expenditures for Office Visits for Children with Asthma, by Payer, 1996

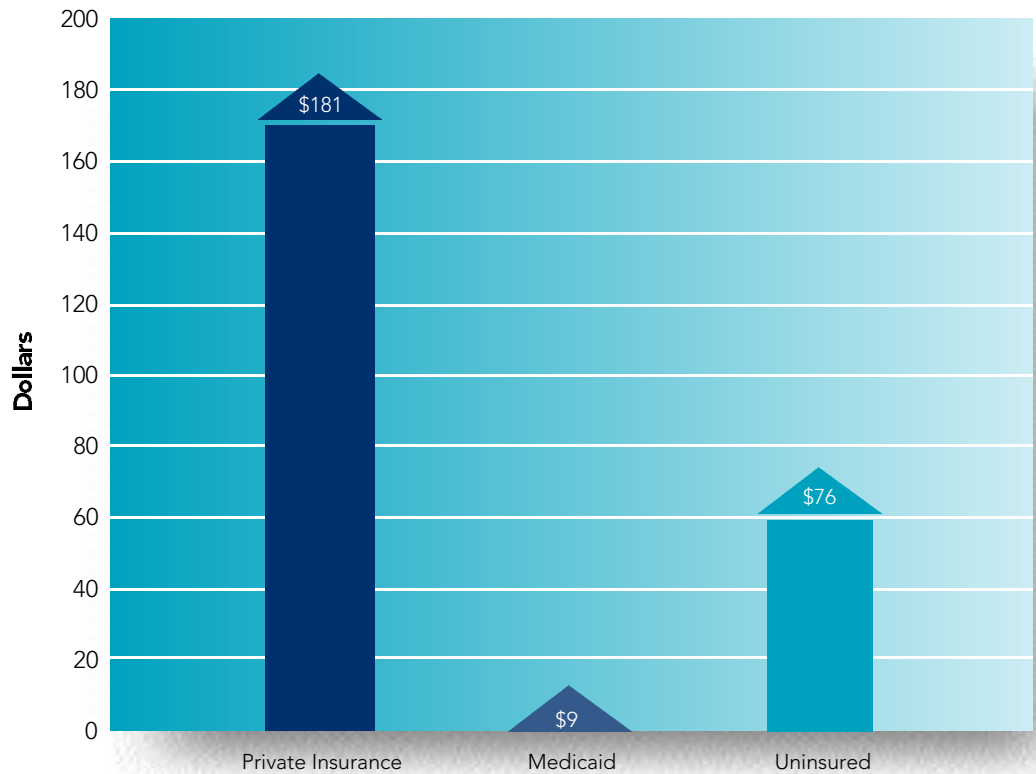


Source: Center on an Aging Society analysis of data from the 1996 Medical Expenditure Panel Survey.

Out-of-pocket costs are particularly high for children with private health insurance.

Families of children with asthma who are covered under Medicaid have low out-of-pocket costs. Out-of-pocket costs are highest for the families of children with asthma and private insurance. This may reflect a greater use of services on the part of these children as well as the fact that private insurance coverage is likely to require co-payments. Little research has been done to determine the degree to which out-of-pocket costs present a barrier to adequate care for children with asthma.

Figure 3-8: Median Annual Out-of-Pocket Expenditures for Children with Asthma, by Insurance Type, 1996



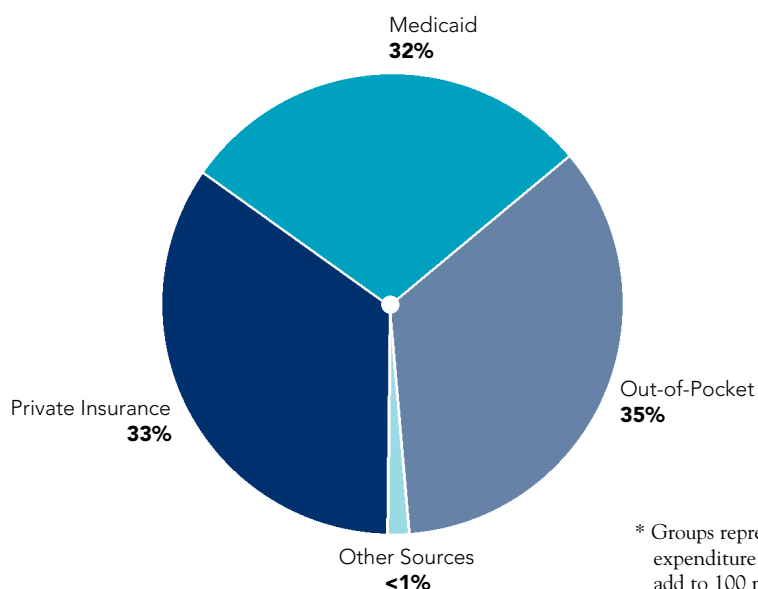
Source: Center on an Aging Society analysis of data from the 1996 *Medical Expenditure Panel Survey*.

Private health insurance pays about half the costs for the “most expensive” children with asthma.

More than one third of the costs for children with asthma with the lowest health care-related expenses are paid out-of-pocket. More than half of the costs for children with asthma with the highest health care expenses are covered by private insurance. Medicaid pays for almost one-quarter of costs for children with the highest expenses. See Figure 3-2 for a breakdown of insurance coverage for children with and without asthma.

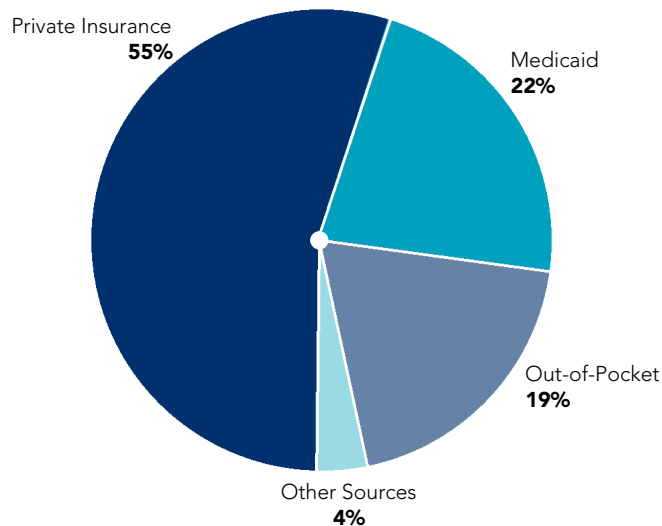
Figures 3-9: Proportion of Expenditures for Children with Asthma, by Payer, 1996

a: Children with Lowest Expenses, *1996
Total = \$77,864,584



* Groups represent lowest and highest expenditure quartiles. Numbers do not add to 100 percent due to rounding.

b: Children with Highest Expenses, 1996
Total = \$3,464,788,529



Conclusion

In 1996, five percent of the nation's children had asthma.¹⁷ The number is projected to rise to 14 percent by 2020.¹⁸ As the population of American children with asthma increases — particularly in minority and lower-income communities — private and public health officials need to look beyond clinical solutions to address more effectively the needs of these young asthma sufferers. By clearly identifying children with asthma, charting asthma-related costs in the public and private sector, and revealing gaps in coverage, *Asthma Care for Children: Financing Issues* offers a tool for states, health plans, and policymakers to consider more effective health care delivery systems for children with asthma. Highlighted findings include:

- Asthma is not only more prevalent among minority children and those living in poverty, but these children tend to have more severe, life-threatening cases of the disease.
- Children with asthma incur more than twice the health care costs of children without asthma.
- Children with asthma with the highest health care expenditures (top 25 percent) incur costs averaging 28 times more than children with asthma with the lowest health care costs (bottom 25 percent).
- Almost one-third of children with asthma are covered under Medicaid.

Data presented in this chartbook also indicated that children covered under Medicaid – in 1996 – were more likely to use hospital-based services, while children with private insurance tended to rely on office-based visits and prescription drugs to manage the condition. With the increase in managed care enrollment since 1996, these numbers are beginning to shift. In New York City, for example, asthma hospitalization rates decreased by 35 percent from 1997 to 2000.¹⁹ Focused collaborative efforts, like the program in New York, can help alleviate the suffering of children with asthma and the financial burden on families and the health care system.

It is our hope that *Asthma Care for Children: Financing Issues* will arm states, health plans, and policymakers with valuable information to stimulate managed care programs that are responsive to the needs of children with asthma, particularly those who are covered in the public sector.

¹⁷ Center on an Aging Society analysis of data from the 1996 *Medical Expenditure Panel Survey*.

¹⁸ The Pew Environmental Health Commission, op. cit.

¹⁹ New York City Department of Health, op. cit.

Center for Health Care Strategies Asthma Initiatives

The Center for Health Care Strategies has developed multi-pronged projects addressing improvements in the delivery and financing of care for children with asthma. *Exploring Barriers to the Financing and Treatment of Pediatric Asthma* is reporting on the barriers to financing and treating asthma in children through commissioned studies, reports, and a national conference. The *Improving Asthma Care for Children Program*, a \$3.25 million, four-year national initiative directed by CHCS, will fund five collaborative efforts to improve the management of children's asthma in high-risk recipients of Medicaid and State Children's Health Insurance Programs (SCHIP). The *Best Clinical and Administrative Practices* workgroup on *Achieving Better Care for Asthma* is convening medical directors from 13 Medicaid and SCHIP health plans to identify managed care best practices for better asthma care. All of CHCS' asthma initiatives are supported through funding from The Robert Wood Johnson Foundation.

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