Insuring Our Kids' Future:

The Importance of Health Insurance to Utilization of Pediatric Health Services

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INTRODUCTION

Health care is a significant contributor to a child's school readiness and ultimate success in life. Primary and preventive care for young children is likely to identify health and developmental problems at a time when intervention can be most effective. Despite wide acceptance of guidelines supporting this approach, a significant number of children still do not receive recommended services. Although a number of factors are at work, lack of health insurance correlates strongly with low utilization of primary and preventive care. This report examines the relationship between having health insurance and receiving primary care services for children in a large group practice in Connecticut, confirming the strength of the correlation, and leads to recommendations for improving utilization of pediatric health services.

Health is a critical component in the growth and development of young children and their readiness to succeed in school and later in life. An analysis of national data from the Kindergarten Cohort of the Early Childhood Longitudinal Study[1] reveals that almost one third of the children entering kindergarten in 1999 had identified health conditions that affected their school readiness. It is important that health, developmental, and socio-emotional delays are identified at a young age when intervention services can be most effective in addressing such problems.[2] If these conditions are not identified when they first arise, children are at risk for developing more serious and life long problems, including school failure, delinquency, and serious mental health issues. Intervention at a later stage in life, when negative behavior may have already incurred a social "cost", also tends to be more expensive to administer and yields lower success rates. Child health services play a critical role in identifying children at risk for problems and connecting them to intervention services.

As such, primary and preventive health services are the cornerstone of young children's health care. The American Academy of Pediatrics (AAP) "medical home" model is generally considered to be the optimal method for delivery of children's primary care services. The "medical home" approach, coordinating care through one office or practice, ensures that children receive accessible, continuous, coordinated, comprehensive, family-centered and culturally competent services.[3] Research has shown that when families have

a medical home for their children, they experience fewer life threatening illnesses[4] and they have fewer emergency department encounters and are hospitalized less often.[5]

Through a medical home children can receive:

- preventive services, such as immunizations
- health promotion through anticipatory guidance offered to parents and care givers
- early identification of physical health, developmental, and socio-emotional problems
- an access point through which families can be connected to other services

When families do not make use of a primary care setting for routine care for their children, not only do they not receive these services, but they are at a disadvantage in finding services when their children are sick. Families who obtain well child services from a regular source of care have an entree into services when their children are ill as well as the other benefits of a medical home.

The American Academy of Pediatrics recommends a schedule of well child care services[6] that has been adopted by several state and national organizations[7] and several state public health agencies. Despite broad acceptance of these guidelines for well child care, many children still do not receive all of the recommended services. There are several reasons for this, including lack of transportation, inconvenient hours, and lack of knowledge on the part of families about the recommended schedule. One barrier to the receipt of primary health care services has received much attention in the literature. Lack of health insurance consistently has been shown to correlate with low utilization of health services.[8]

Recognizing the importance of primary care services to children's healthy development, this report examines the relationship between having health insurance and receiving primary care services for children seen in one large group practice in Connecticut in 2006. The study reports on a cohort of pediatric patients who used services in a large private practice network. Services included well child encounters, immunizations, and acute care encounters.

While the national and state debates about the best approach to providing universal health insurance rage on, these findings lend credence to the fact that a solution that enables higher primary care utilization rates must be found. Children are harmed by going without the care they need, and a significant number of them remain at risk despite recently reported reductions in the percentage of uninsured within the overall population. This study's findings suggest that broader health insurance coverage will be a critical component of such a solution.

BACKGROUND

Health Insurance and Children

Children's health care services generally are paid for by private or public health insurance. The majority of children covered by private or commercial health insurance live in families with one or more employed adults who participate in a health insurance plan sponsored by their employer. Children with public health insurance are covered by Medicaid, which is authorized by Title XIX of the Social Security Act. Children are eligible for Medicaid if their families' income is below a certain poverty level determined by each state. Once enrolled, their families pay none of the costs of their health care services. In contrast, families covered by private insurance often have to share the cost of services with their insurance plans and need to pay a predetermined amount (a deductible) within a calendar year before their insurance covers all of their health care costs.

In 1998, 68% of the nation's children were covered by private insurance, 19% by public insurance, and 13% had no insurance, meaning they were left to pay all of the costs of their health care services.[9] In 1997, the federal government recognized the importance of health insurance in promoting appropriate health care utilization for children. Congress passed the State Children's Health Insurance Program (SCHIP), allowing states to provide health insurance to more children. Under this program, families with incomes above Medicaid eligibility levels, but not sufficient to purchase insurance through their employers or on their own, could purchase public health insurance for their children. By 2008, 31% of the nation's children were covered by public insurance. Yet 11% still had no insurance.[10] It is estimated that 95% of uninsured children live in families who would actually qualify for Medicaid or their state's SCHIP program if they applied. Hispanics, adolescents, and children of parents born outside of the United States are disproportionately represented among the uninsured.[11]

In Connecticut in 2007, 214,000 of the 1.2 million children in the state were insured by HUSKY, the state's Medicaid program. As reported by Connecticut Voices for Children, the latest US Census Bureau estimates are that 43,000 Connecticut children under 18 were uninsured for the entire year in 2007, or 5.2% of all Connecticut children. This is a decline from the 49,000 uninsured children reported in 2006 and reflects steps Connecticut has taken in the past year to reduce the number of uninsured children and their parents. Although the numbers are moving in the right direction, a significant number of children

are still not covered. Of those who are uninsured, 29,000 are younger than 19 and living in families with income at or below 200% of the federal poverty level (FPL). Therefore, nearly all are eligible for coverage in the HUSKY Program.[12]

Health Insurance and Health Services Utilization

In examining children's utilization of primary care health services, it is useful to consider the role of health insurance coverage, examining utilization differences among the following three groups:

- children with private or commercial health insurance
- children with public health insurance (Medicaid and SCHIP) and
- children without insurance

Using self-report measures of health care utilization and health care claims, data consistently show that children insured by Medicaid use all types of primary care services at a rate similar to children with private insurance.[9,13] Children with no health insurance, however, consistently receive fewer primary care services.

With data from the National Health Interview Study, a random sample survey yielding 13,000 responses, differences in health service utilization for children in 2003 were studied.[14] When responses were analyzed according to insurance status, results showed that children with no health insurance were five times more likely than children covered by public and private insurance to have an unmet health need, 15 times more likely to delay seeking health care services, and 11 times more likely to lack a usual source of care. Parents of uninsured children also were more likely to report that their children had no well child care or dental services during the past year.

There have been no analyses of Connecticut children's utilization of health services across all types of payers. Since 1999, Connecticut Voices for Children has reported on the utilization of primary care services for children ages 2 through 19 insured by HUSKY. Their most recent report indicates that of the children who were insured by HUSKY for the full 12 months of 2006, 35% did not have a well child encounter, and 9% had no care at all.[15] Little else is known about the connection between children's receipt of well child care services and their insurance status.

There have been virtually no studies that examine children's health insurance status and utilization of health services using claims data that include children covered by private insurance, public insurance and without insurance in a single data set.

Immunizations are one key element of primary health services. The AAP's schedule for well child services includes nationally recognized standards for administration of 11 childhood vaccines that has been adopted by the Centers for Disease Control. According to the 2006 schedule, all children should receive 16 vaccines in the first year of life, eight in the second year, and then three booster shots at ages four or five. Receipt of immunizations is necessary for child care, school, and camp entry, and therefore are a major impetus for parents/care takers to bring their children to the doctor for well child care. In 2006, 77%[16] of two year olds nationally and 82%[17] in Connecticut were up-to-date on immunizations.

Other important components of well child care services include monitoring of physical growth and motor, socio-emotional, and cognitive development. There is little data describing the extent to which children receive all of these services. Although the AAP has recommended that child health providers use a formal screening tool at three visits (9, 18, and 30 months) to identify behavioral and developmental concerns, the evidence suggests that the majority of children are not receiving these screenings. HUSKY data from 2006 show that pediatric providers billed Medicaid for developmental screening for fewer than 2% of children.[15] In general, a recent national study has shown that about one third of recommended pediatric primary care services are currently being provided to children.[18]

The Current Study

Our understanding of children's health insurance status and utilization of primary health services is limited by four factors:

- Most studies are based on self-report and extrapolations from limited, outdated, large national data sets based on random sample surveys of parents/care takers.

- There have been virtually no studies that examine children's health insurance status and utilization of health services using claims data that include children covered by private insurance, public insurance and without insurance in a single data set. Such studies would augment the available literature to provide a more comprehensive view of the relationship between health insurance and health care utilization for children.

- The literature is lacking in studies that consider services provided by a targeted set of health care sites. This limits our understanding of how the delivery of health services is shaped by the practice sites in which children receive care.

- Very little is known about the utilization of health services for children who receive care in private practice settings. Claims data generally report on children with public insurance, the vast majority of whom receive services in community health centers and hospital ambulatory settings.

The current study looks at the relationship between health insurance status and children's utilization of primary care services in one large private practice primary care network. Children's services covered by private insurance, public insurance, and self pay (no insurance) are included in the data, which are derived from claims submitted through a central billing office. By holding constant the set of practice sites that children use, we can learn about the unique role that health insurance plays in determining utilization. Aspects of the health care setting, specifically the willingness of providers to see children with public or no insurance, do not confound results.

METHODS

Data for this study were extracted from the ProHealth Physicians, Inc. practice management database. ProHealth Physicians, Inc. (ProHealth) is the largest primary care group practice in Connecticut. Formed in 1997, ProHealth includes 75 practice sites in 36 communities across Hartford, Middlesex, Litchfield, Tolland, and New Haven counties. ProHealth employs 211 practitioners. The makeup of practitioners is summarized in Appendix A. ProHealth has developed a central organization and administrative structure that provides support to the practice sites for most business functions including billing. The organization maintains data on patient utilization that are derived from the claims database.

ProHealth offers a unique opportunity for the evaluation of real-world services and practice outcomes. ProHealth practitioners serve a population of approximately 300,000 patients (9% of Connecticut's 3,405,565 residents and 10% of the pediatric population) through 700,000+ annual encounters. The age and gender distribution of ProHealth patients are similar to those of Connecticut as a whole. Thirty one percent of ProHealth patients are younger than 20 years old; 54% are between 20 and 64 years old; 15% are 65 and over. Forty-seven percent of the patients are male and 53% are female. Appendix B provides a description of ProHealth patients by age and gender compared to the population of Connecticut residents.

Data for this analysis included active pediatric patients. In order to be comparable with earlier studies, only patients aged 0-19 as of 12/31/2006 (analysis year end) were included in the study. Patients are not "enrolled" in primary care practices. Therefore, we needed to estimate the size of the patient population served. For this study, the definition of an active patient included any pediatric patient with an encounter between January 1, 2006 and December 31, 2006 (n = 74,986) and any additional pediatric patients with encounters in both the pre-study year (2005) and the post study year (2007) (n = 3,634). Additional analysis of the calendar year 2006

cohort showed that 6,350 (3,675 newborns and 2,675 other ages) pediatric patients were seen by a ProHealth practitioner for the first time in 2006. For analyses of encounters, only encounters between 1/1/2006 and 12/31/2006 were included. We analyzed data for well child and episodic encounters. CPT codes used to define encounters are included in Appendix C. For analyses of immunization procedures, age was calculated based on the service date of each immunization procedure. So as not to double count a patient in multiple age groups, for all other analyses, age was calculated as of 12/31/2006, the end of the study.

For analyses of type of insurance, claims data were aggregated into three cohorts: self pay or no insurance, public insurance including Medicaid, and all others as private insurance.

RESULTS

Table 1 shows the distribution of ProHealth pediatric patients by age and gender for each insurance category. The majority of ProHealth patients (87%) are insured by private insurance and a small percentage (2%) have no insurance. Eleven percent of patients are insured by Medicaid. Children insured by Medicaid tend to be younger than children insured by commercial insurance and with no insurance. More than 90% of the children with encounters in 2006 also had encounters in 2005 or 2007, signifying that the population of patients seen in this network is highly stable over time.

Table 2 reports the utilization of health services for ProHealth pediatric patients in 2006, including well child encounters and total encounters, which include episodic and well child encounters. Children in the self-pay category consistently use fewer services than children with private and public insurance. Fifty-four percent of children with no insurance had well child encounters in comparison to 66% and 73% of children covered by public and private insurance, respectively. Disparities in the utilization of well child services are more pronounced for younger children and for adolescents. For all health care encounters, young children with no health insurance receive on average two to three fewer encounters than other children.

Table 1: Patients by Insurance Type, Age, Gender 1/1/2006-12/31/2006

Insurance Type	Age					Gender		Totals
	0 - 1	2 - 5	6 - 10	11 - 15	16 - 19	Male	Female	
Private Insurance - Patients	6,280	12,764	16,789	18,717	13,952	34,842	33,660	68,502
% of total Private Insurance	9.2	18.6	24.5	27.3	20.4	50.9	49.1	100.0
% of age group total	81.4	85.0	87.1	89.0	89.6	87.1	86.4	87.1
Patients seen 2006	6,273	12,622	15,670	17,628	13,105			65,298
% patients seen 2006 of total patients seen in 2005, 2006, and 2007	99.9	98.9	93.3	94.2	93.9			95.3
Public Insurance - Patients	1,283	2,009	2,194	1,984	1,084	4,404	4,150	8,554
% of total Public Insurance	15.0	23.5	25.6	23.2	12.7	51.5	48.5	100.0
% of age group total	16.6	13.4	11.4	9.4	7.0	11.0	10.7	10.9
Patients seen 2006	1,280	1,964	2,038	1,881	1,038			8,201
% patients seen 2006 of total patients seen in 2005, 2006, and 2007	99.8	97.8	92.9	94.8	95.8			95.9
Self Pay - Patients	152	244	288	338	542	757	807	1,564
% of total Self Pay	9.7	15.6	18.4	21.6	34.7	48.4	51.6	100.0
% of age group total	2.0	1.6	1.5	1.6	3.4	1.9	2.1	2.0
Patients seen 2006	152	239	269	319	509			1,487
% patients seen 2006 of total patients seen in 2005, 2006, and 2007	100.0	98.0	93.4	94.4	93.9			95.1
All Payers - Patients	7,715	15,017	19,271	21,039	15,578	40,003	38,617	78,620
% of total Payer	9.8	19.1	24.5	26.8	19.8	50.9	49.1	100.0
% of age group total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Patients seen 2006	7,704	14,825	17,977	19,828	14,652			74,986
% patients seen 2006 of total patients seen in 2005, 2006, and 2007	99.9	98.7	93.3	94.2	94.1			95.4

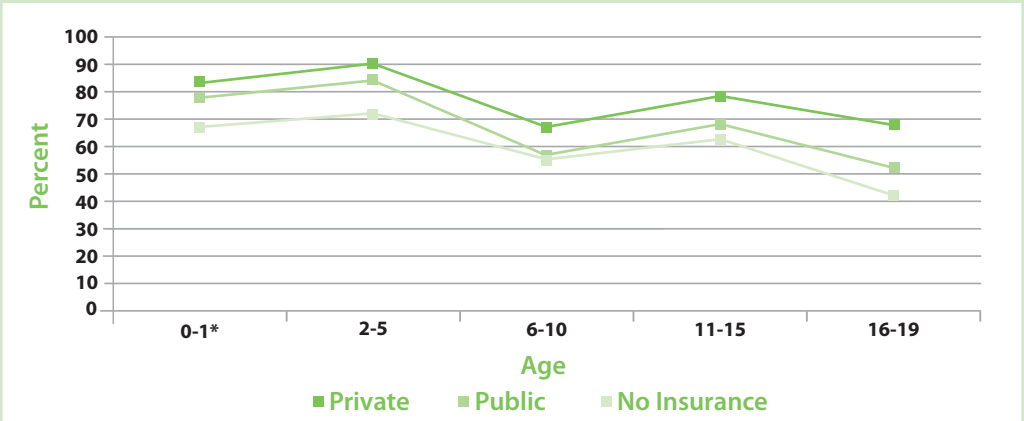
Fifty-four percent of children with no insurance had well child encounters in comparison to 66% and 73% of children covered by public and private insurance, respectively.

Table 2: Patients by Insurance Type, Age, and Type of Encounter 1/1/2006-12/31/2006

Insurance Type	Age					Totals
	0 - 1	2 - 5	6 - 10	11 - 15	16 - 19	
Recommended # of well child visits	7 to 8	5 to 6	3	5	4	
Private Insurance - patients	6,280	12,764	16,789	18,717	13,952	68,502
Patients seen in 2006	6,273	12,622	15,670	17,628	13,105	65,298
Percent of patients with any well child encounter	84.1	89.1	61.9	74.9	63.8	72.9
Total encounters per patient seen 2006	7.8	4.0	2.8	2.4	2.4	3.3
Public Insurance - Patients	1,283	2,009	2,194	1,984	1,084	8,554
Patients seen in 2006	1,280	1,964	2,038	1,881	1,038	8,201
Percent of patients with any well child encounter	79.0	82.1	52.1	64.9	50.2	65.9
Total encounters per patient seen 2006	7.5	4.1	3.0	2.6	2.6	3.8
Self Pay - Patients	152	244	288	338	542	1,564
Patients seen in 2006	152	239	269	319	509	1,487
Percent of patients with any well child encounter	66.4	70.9	52.4	58.9	40.8	54.0
Total encounters	835	715	580	578	1,162	3,870
Total encounters per patient seen 2006	5.5	3.0	2.2	1.8	2.3	2.6
All Payers - Patients	7,715	15,017	19,271	21,039	15,578	78,620
Patients seen in 2006	7,704	14,825	17,977	19,828	14,652	74,986
Percent of patients with any well child encounter	82.9	87.9	60.6	73.7	62.0	71.8
Total encounters	59,560	58,867	50,039	47,855	34,939	251,260
Total encounters per patient seen 2006	7.7	4.0	2.8	2.4	2.4	3.4

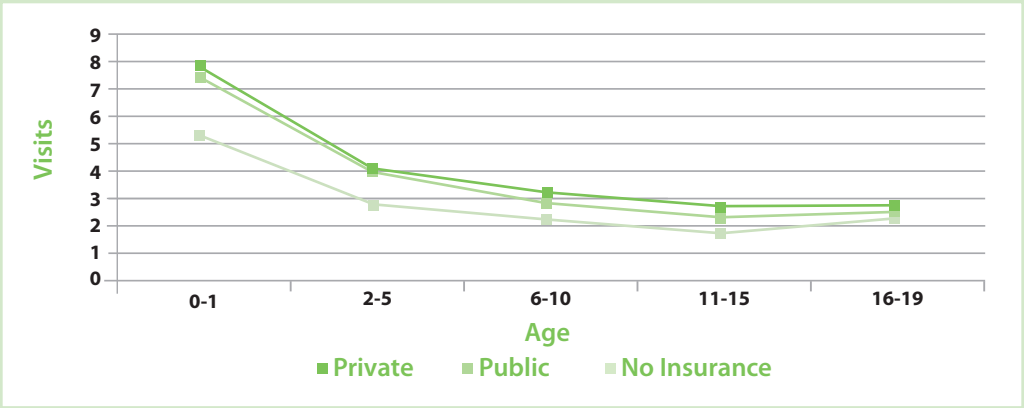
For all health care encounters, young children with no health insurance receive on average two to three fewer encounters than other children.

Figure 1: Percent of Patients with Well Child Visit by Age and Insurance Type



* Differences across all age groups are significant at the p<.05 level, and differences for 0 to 1 year olds are significant at the p<.01 level.

Figure 2: Visits per Child by Age and Insurance Type

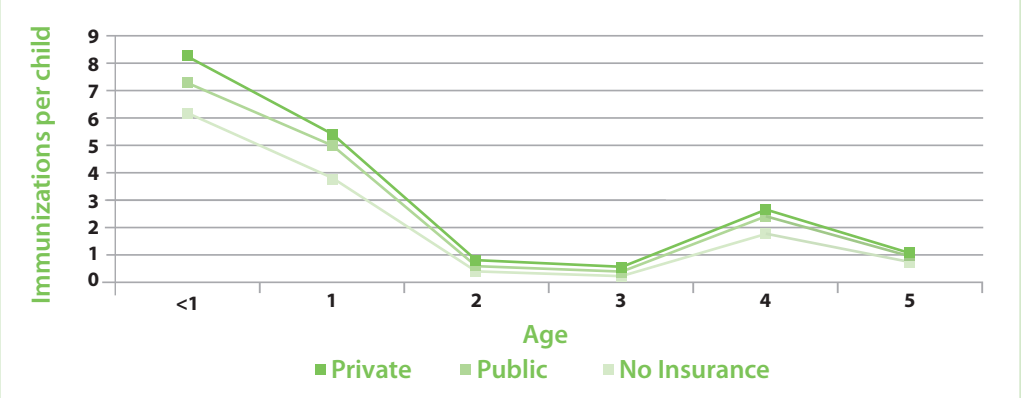


Children with private and public insurance receive more immunizations than do children who are uninsured, especially before the critical age of two.

Table 3: Immunizations by Insurance Type, Age (Newborn to Age 5) 1/1/2006-12/31/2006

Insurance Type	Age					
	<1	1	2	3	4	5
Private Insurance - Patients	3,189	3,091	3,095	3,224	3,141	3,304
Immunizations	26,100	16,365	2,490	1,931	7,658	3,300
Immunizations per child	8.2	5.3	0.8	0.6	2.5	1.0
Public Insurance - Patients	697	586	532	518	476	483
Immunizations	5,035	2,895	359	226	1,134	384
Immunizations per child	7.2	5.0	0.7	0.4	2.4	0.8
Self Pay - Patients	77	75	59	55	70	60
Immunizations	473	280	28	15	137	58
Immunizations per child	6.1	3.9	0.4	0.3	2.0	0.9
All Payers - Patients	3,963	3,752	3,686	3,797	3,687	3,847
Immunizations	31,608	19,540	2,877	2,172	8,929	3,742
Immunizations per child	8.0	5.2	0.8	0.6	2.5	1.0

Figure 3: Immunizations per Child by Age and Insurance Type



The data from Table 2 are graphically displayed in Figure 1 for well child encounters and in Figure 2 for all encounters.

Table 3 shows the average number of immunizations received by children five and younger according to insurance coverage. Since many vaccines are manufactured in combinations of agents into single doses, it is difficult to ascertain the number of actual immunizations that are appropriate according to national standards. The most meaningful numbers are for children up to age two and then for children age four, who are receiving a second set of vaccines for school entry. Immunizations given at ages three and five probably represent efforts to catch up on missing immunizations from earlier years. As illustrated in Figure 3, children with private and public insurance receive more immunizations than do children who are uninsured, especially before age two.

DISCUSSION

This analysis of claims data from a large private practice in Connecticut supports the documentation of health service utilization for children according to their insurance status as reported in other studies that rely on self reports by parents. It has shown that children who are insured by Medicaid use health services similarly to children with commercial insurance. We also have verified the findings from self report studies that when children lack insurance they use fewer health services.

We have documented additional differences in health service utilization according to insurance status. In addition to overall visit utilization, we have shown that children with no insurance also have fewer well child encounters and receive fewer immunizations. Their patterns of utilization are similar to children insured by commercial carriers and Medicaid in terms of more visits and immunizations at younger ages, but they consistently have fewer encounters and immunizations throughout all age groups.

We have shown some convergence in visit and immunization rates for the children insured by private and public insurance and those with no insurance. Children with no health insurance appear to use primary care health services at the same rate as insured children in the older age groups (11 to 15 and 16 to 19). The recommended number of visits for these age groups is only one per year, and documentation of an annual visit is required for school entry. Of note, however, is that this is true for all visits (well child and episodic) but not for well child visits alone. This suggests that the uninsured lag in receipt of well child services across all age groups, but do have episodic care. For immunizations, differences between insurance groups disappear by age two, suggesting that uninsured children catch up on their immunizations. Documentation of immunizations is required for entry into child care, preschool, and kindergarten and most likely serves as the impetus for parents to bring their children to the doctor.

…more than 40,000 children in Connecticut were without health insurance in 2007. According to the study results, many of these children can be expected to use fewer health services than recommended by AAP… As a result, children who are uninsured run the risk of not being ready for school at kindergarten entry and never completely catching up to their healthier peers.

These findings have important implications for the promotion of primary care. We tout pediatric primary care services as critical to serving three major functions: 1) providing preventive services, 2) early identification of health and developmental issues, and 3) being the most cost effective venue for addressing health issues. If we believe in the role of primary care child health services, we must ensure that families partake fully in well child services, where problems are detected early and linkage to intervention is possible. The full provision of well child services also includes implementation of anticipatory guidance to address issues that prevent compromised health later in life. Anticipatory guidance includes such topics as nutrition and obesity prevention, safety, promotion of socio-emotional and cognitive development within the context of the family, and parenting.

When families use well child services, they develop relationships with their children's primary care providers that carry over into care for acute illnesses and chronic conditions. These services are far more effective and cost effective when delivered in the primary care setting, where providers know the patient and family history, as opposed to hospital emergency departments.

Although the analyses presented show relatively few children with no health insurance, it is estimated that more than 40,000 children in Connecticut were without health insurance for some or all of 2007.[12] According to the data presented, many of these children can be expected to use fewer health care services than recommended by the AAP. They will receive immunizations on a delayed schedule, and be at risk for infectious diseases. They will miss important opportunities for health and developmental monitoring and linkage to intervention at an age when intervention is most effective. The parents of uninsured children will lose out on opportunities to discuss health, developmental and behavioral concerns with a child health provider. As a result, children who are uninsured run the risk of not being ready for school at kindergarten entry and never completely catching up to their healthier peers.

LIMITATIONS

There are several limitations to the analysis reported in this study. Since the data used are from claims filed, only children who utilized services are included in the analysis. We have no strong indicator of the number of children who do not utilize any services at all. Our results also may underestimate the number of encounters and services by children without health insurance since providers may not submit claims if they know the family is uninsured.

The final limitation of the reported analysis is that we only have data on primary care services in one provider network. It could be that children in the sample receive services from other or multiple sites of care, including hospital emergency departments, community health centers, and even private practices that are not part of the ProHealth network. Regardless of how this out-of-sample utilization might affect the analyses reported, it is of concern. The AAP recommends that all children have a "medical home", where they receive accessible, continuous, coordinated, comprehensive, culturally appropriate, family-centered care.[3] We have reported evidence that children who do not have health insurance do not receive all of the appropriate well child services, but it would be just as concerning if they received services from a number of health care providers across multiple systems of services.

RECOMMENDATIONS

Based on the results of this study, CHDI proposes a range of recommendations that encompass increased efforts to extend insurance coverage and the elimination of insurance-based deterrents to seeking child care as well as the more widespread adoption of the "medical home" pediatric practice model:

Health insurance for all children. We have shown that when children lack health insurance they use fewer well child services, are delayed in receiving immunizations and have fewer health care encounters in general. We have also shown that the inclusion of young children in Medicaid coverage programs, such as HUSKY in Connecticut, results in utilization of health services that approximates that of children insured by private health plans.

Efforts to enroll all eligible children in HUSKY should be fully supported. Programs such as Covering Kids should be expanded so that more families are aware of health insurance options for their children.

Well child care services should not be subject to co-pays and deductibles. Data from these 15 family medicine and 20 pediatric private practices show that when families need to pay out of pocket, they use fewer services. This suggests that even with insurance, co-pays and deductibles could be a deterrent for seeking well child care.

Continuous eligibility of health insurance should be guaranteed for 12 months to ensure that children's receipt of well child services, especially in the earliest years, is not disrupted.

Primary care child health providers should be encouraged to develop and implement outreach services. Providers should identify children on their patient panels in need of well child services and engage their parents/care takers in scheduling and keeping appointments.

Medical home models that promote continuity and care coordination should be implemented in all primary care pediatric sites.

Private practice physicians should be encouraged to participate in Medicaid plans to ensure an adequate number of primary care providers to serve children insured by HUSKY.

Appendix A: ProHealth Clinicians by Specialty and Type of Practitioner

Specialty	Type				
	MD/DO	APRN	PA-C	Total	Percent
Family Practice	49	14	6	**69**	32.7%
Internal Medicine	54	15	7	**76**	36.0%
Pediatrics	55	9	0	**64**	30.3%
Pediatric Specialists*	2	0	0	**2**	1.0%
Total	**160**	**38**	**13**	**211**	**100%**
Percent	75.8%	18.0%	6.2%	**100%**	

*Specialists include 1 MD in Otolaryngology, 1 MD in Pediatric Gastroenterology

Appendix B: ProHealth Patients by Age and Gender

Patient Age	Male Patients	Female Patients	Percent Male	Total Patients	Percent of Total	CT Population*	Percent of CT Total	ProHealth % of CT Population
0-19	48,268	46,117	51.1%	94,385	31.2%	925,702	27.2%	10.2%
20-64	76,975	85,531	47.4%	162,506	53.7%	2,009,680	59.0%	8.1%
65 & over	18,429	27,550	40.1%	45,979	15.1%	470,183	13.8%	9.8%
Total	**143,672**	**159,198**	**47.4%**	**302,870**	**100.00%**	**3,405,565**	**100.0%**	**8.9%**

* 2000 U.S. Census

Appendix C

An encounter was defined as a CPT code in the range between 992xx and 99499. A well child encounter was defined using the CPT codes between 99381 and 99399. An episodic encounter was defined using the CPT codes between (99201 and 99215) or (99241 and 99245) or (99354 and 99357). Other encounters were defined using the CPT codes between (99217 and 99239) or (99251 and 99350) or (99358 and 99374) or (99401 and 99499).

An immunization was defined as any CPT code between 90630 and 90748.

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About the Child Health and Development Institute of Connecticut:

The Child Health and Development Institute of Connecticut is a not-for-profit organization established to promote and maximize the healthy physical, behavioral, emotional, cognitive and social development of children throughout Connecticut. CHDI works to ensure that children in Connecticut, particularly those who are disadvantaged, will have access to and make use of a comprehensive, effective, community-based health and mental health care system.

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