The World Health Organization defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."[4] A comprehensive view of health is increasingly important as organizations and agencies at the state and local levels tackle the challenges of optimizing young children's development and preparing them to enter school ready to learn. A child's health (including physical, mental, developmental, social and emotional health) is one of the fundamental building blocks of any school readiness program. All sections in this report build upon the general concepts of health and well-being.

Health Status

A child's health can be measured many ways. Overall health status is a good indicator of the child's ability to participate in activities that contribute to development of physical and social skills, learning, and ultimately success in school. Parent rating of overall child health status is an important indicator because it not only describes the child's health, but also the parental perception of the child. Ratings of health as "excellent," "very good," "good," "fair," and "poor" have been used as measures of child well being. In national data, this single rating correlates with the prevalence of acute and chronic medical, mental health, and developmental conditions. Consistent with common usage, this report uses parent ratings of excellent and very good health to indicate that a child is doing well and developmentally "flourishing". Parent reports of fair and poor health suggest that the child has compromised health and well-being.

CHIS 2001 shows that in California, most children (75%) age 0-5 years are in excellent or very good health. Good health status is reported for 18.4% of children and a small proportion of children (6.6%) are in fair or poor health. National data show that overall, health status declines in older children because the proportion of children in fair or poor health increases as children age. Reported health status of young children in California is lower than health status of young children nationally, where about 85% of children age 0-5 years are reported to be in very good or excellent health.[5, 6]

Health Status and Family Income

Exhibit 4 shows substantial differences in health status by household income. There is a pronounced gradient in health status rating across income levels, with the proportion of children rated in excellent or very good health increasing by 8 to 15 percentage points for each increment in family income. Conversely, the proportion of children in only fair or poor health falls from a rate of 15% to 2% between the lowest and the highest income children.

Health Status and Race/Ethnicity

Fewer Latino children are reported to be in excellent or very good health (59.3%) compared to children in other racial/ethnic groups. The proportion of Latino children in excellent or very good health is lower than all other races, including African American (77.4%), Asian/Pacific Islander (75.8%) and Non-Latino White (89%) children. Exhibit 5 shows that these significant racial/ethnic disparities in health status of young children are seen at every income level, although these disparities are lowest among the highest income children. There are greater disparities in health between Latino and Non-Latino White children in households with income less than 100% FPL than between Latino and Non-Latino White children in households with income of 300% FPL or greater.

4 Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948.

5 Federal Interagency Forum on Child and Family Statistics, *America's Children: Key National Indicators of Well-Being, 2002*. Washington, DC: U.S. Government Printing Office.

6 Halfon N, Olson L, Inkelas M, et al. Summary Statistics from the National Survey of Early Childhood Health, 2000. National Center for Health Statistics.

Racial and Ethnic Disparities in Child Health Status

Measures of health are important, not only because health is important in its own right, but because it is an important determinant of school readiness, school performance, and the potential for life long learning. Research on disparities in children's health status shows that many disparities come from higher levels of risk, coupled with lower levels of "protective factors" such as social support and parent-child reading as a development-promoting activity that can reduce the impact of risk factors. In addition, higher levels of risk are often associated with poorer access to needed health care. A growing body of research also shows that disparities in health and development that begin early in life and are not sufficiently addressed are likely to increase as the child grows.

CHIS 2001 provides three important measures of the health of young children. They include a global measure of parent-reported health status; the prevalence and impact of childhood asthma, the most common chronic health condition in childhood (other than dental caries); and rates of child disability. While nearly three-quarters of all children in California are in excellent or very good health, there are substantial differences across racial and ethnic groups. Nearly 90% of Non-Latino White children are reported in excellent or very good health compared to only 77% of African-American, 76% of Asian/Pacific Islander, and 59% of Latino children. Much of this difference in health status appears to be associated with the negative impact of low family income. The gap in excellent or very good health between Non-Latino White and Latino children declines from 30 percentage points for children in low-income families to only six percentage points for families above 300% of the FPL.

Racial/ethnic disparities in health are associated with other social determinants of health. Children in poorer health are disproportionately in lower income families. Children in these families have other risks to development including fewer health promoting behaviors, lower participation in preschool and structured child care, greater food insecurity, and other hardships that arise from the struggle to maintain adequate resources to support a family. When a child is sick, access to medical care plays an important role in obtaining treatment for an acute illness as well as managing chronic conditions such as asthma. High quality primary care may also benefit children and families by encouraging health promoting behaviors and steps to prevent childhood injury. Yet children at risk for poorer health status are also less likely to have good access to health care. For example, more young Latino children than children in other racial/ethnic groups have delayed care.

CHIS 2001 also shows that the burden of chronic illness is not borne equally by children in different racial/ethnic groups. Young African-American children have more than double the reported rates of disability (10%) than Non-Latino White children (4%), Latino children (3%), and Asian/Pacific-Islander children (2%). Similar disparities exist for asthma. Asthma rates are twice as high among young African-American children as among children in other racial/ethnic groups.

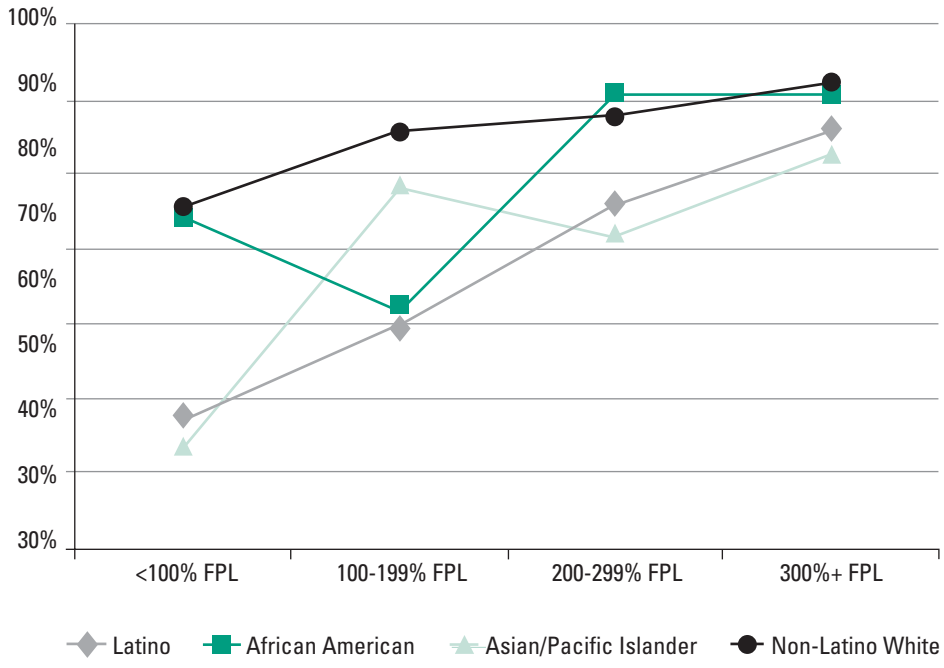
Eliminating racial and ethnic disparities in the health of California's children will require attention to both social and medical care determinants of health. Because race/ethnicity and low-income place children at risk for poorer access to health care, promoting high quality primary care for all children is essential for reducing these disparities.

EXHIBIT 4 – HEALTH STATUS BY POVERTY LEVEL AND RACE/ETHNICITY, CHILDREN AGE 0-5 YEARS, CALIFORNIA 2001

	EXCELLENT OR VERY GOOD	GOOD	FAIR OR POOR	TOTAL
INCOME				
LESS THAN 100% FPL	53.4%	31.3%	15.3%	100%
100-199% FPL	68.6%	23.0%	8.4%	100%
200-299% FPL	81.6%	15.8%	2.6%	100%
300% FPL AND ABOVE	89.7%	8.6%	1.7%	100%
ETHNICITY				
NON-LATINO WHITE	89.0%	9.1%	1.9%	100%
LATINO	59.3%	29.0%	11.7%	100%
AFRICAN-AMERICAN	77.4%	15.8%	6.8%	100%
ASIAN/PACIFIC ISLANDER	75.8%	18.1%	6.1%	100%
AMERICAN INDIAN/ ALASKA NATIVE	78.2%	17.3%	4.5%	
OTHER	82.4%	12.2%	5.4%	100%

Tests of the association of race/ethnicity and income with health status are statistically significant (p<0.05) (chi square).

EXHIBIT 5 – CHILDREN IN EXCELLENT OR VERY GOOD HEALTH BY POVERTY LEVEL, BY RACE/ETHNICITY, CHILDREN AGE 0-5 YEARS, CALIFORNIA 2001

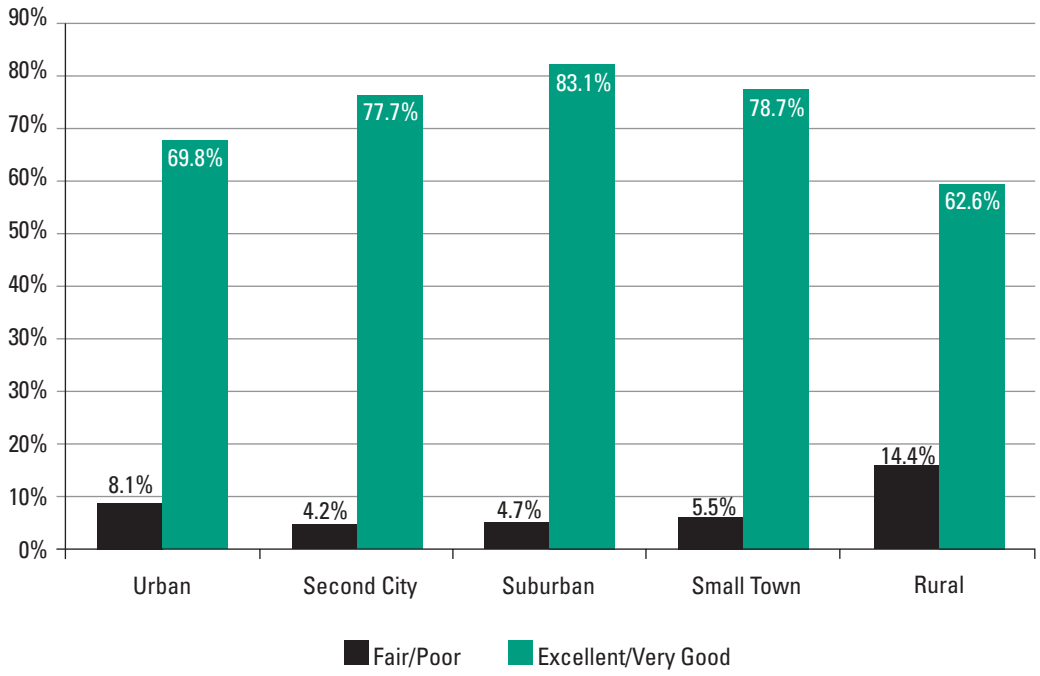


Tests of the association of race/ethnicity and health status are statistically significant at all income levels (p<0.05) (chi square).

Health Status and Area of Residence

Children in urban areas and in the most rural areas of California have the poorest reported health status among geographic areas in the state (Exhibit 6). Only about 69.8% of children in urban cities and 62.6% of children in rural California are in excellent or very good health. More children in second cities (semi-urban areas) (77.7%), suburban areas (83.1%), and small towns (78.7%) are in excellent or very good health compared to urban and rural children. These disparities result from children in urban and in rural areas having greater exposure to health risks. Children in rural areas may be adjacent to large farms with dust and pesticides. The fact that children in both rural and urban areas have experienced the greatest increase in asthma rates nationally points to environmental exposures as a contributing factor.[7] In addition to these environmental risks, children in urban and rural areas are more often in low-income households with poorer housing conditions and other social and family risks.

EXHIBIT 6 – HEALTH STATUS BY AREA OF RESIDENCE, CHILDREN AGE 0-5 YEARS, CALIFORNIA 2001



Tests of the association of race/ethnicity and health status are statistically significant at all income levels ($p<0.05$) (chi square).

7 Akinbami L, Schoendorf K. (2002) Trends in Childhood Asthma: Prevalence, Health Care Utilization and Mortality. *Pediatrics*; 100(2 Pt.1): 315-22.

Summary

In summary, CHIS 2001 shows lower overall health status of California's young children compared to children nationally. Latino children are reported in poorer health than other children. There are gradients in health across income levels, with racial/ethnic disparities diminishing only among the highest income children. Children in urban and in rural areas of California have poorer health than children in suburban areas and towns.

There are multiple causes for lower reported health among subgroups of children that range from prenatal exposures to greater burden of health risks and diseases leading to impairments. Greater access to quality health care might reduce some of these disparities in health status. Reduced exposure to poor air quality and environmental factors in urban and rural areas could also reduce disparities. The burden of poor health status clearly falls on socio-economically disadvantaged children. If this burden is not reduced, lower-income children will continue to be at a disadvantage compared to higher income children, due to the strong influence of health status on children's school readiness and school achievement.

Activity Limitations/Disabilities and Chronic Illness

Age-appropriate activities for young children include play, exploration, learning, and for many children, attending child care or preschool. A child who is unable to participate in these types of activities will miss early opportunities for healthy development-promoting experiences. In addition, young children with chronic diseases, or even frequent acute illnesses, cannot take full advantage of even the best learning and development environments if they are unable to participate in normal activities. Limitations caused by physical conditions (such as asthma or cerebral palsy) or behavioral or mental health conditions (such as attention deficit disorder or a learning disability) can impair normal development.

Limitations in Activity (Disability)

Activity limitation is a measure that was instituted as part of the National Center for Health Statistics, National Health Interview Survey in the 1960s, and continues to be an important indicator of children with chronic and debilitating health conditions, and developmental disabilities. It identifies children who have greater than normal needs for ongoing medical treatment and rehabilitation services. A new federal definition of children with special health care needs (CSHCN) includes not only children with disabilities, but also children who do not have a disability, but have chronic or mental health conditions and need more health services than usual. This more expansive definition of special health care needs was recently fielded for the first time and shows that about 10.2% of children in California and 12.8% nationally have a chronic condition.[8]

Parent reports of activity limitation (disability) are usually low in the first years of life and increase as children age. In other population-based studies, there is usually a significant increase in reporting at the time of school entry, since the challenges of school reveal previously unrecognized disabilities in children. There is also research that shows neither the health care system nor parents recognize many children with disabilities. If recognized earlier they could receive important and useful interventions. Therefore, in interpreting parent-reported assessment of early childhood activity limitations, it is likely that these figures represent an underreporting of the true prevalence of disability.

CHIS 2001 shows that approximately 3.7% of California children age 0-5 years have a physical, behavioral, or mental condition that limits or prevents them from participating in age-appropriate childhood activities.[9] This rate is similar to national estimates of 3% of children younger than age 5 having a chronic condition that limits normal activity.[10] It is not surprising that relatively few children have disabilities because this measure identifies a more severely impaired group of children and because of likely underreporting.

Disability is more common among preschoolers than toddlers. Only 2.9% of children age 1-2 years have an activity limiting condition, compared to 5% of children 3 to 4 years of age, and 4.8% of children age five.

8 Inkelas M. Access to Health Care for California's Children with Special Health Care Needs - Chartbook. Medi-Cal Policy Institute. Oakland: 2003 (Draft).

9 Limitations in usual childhood activity may be caused by time-limited, acute problems such as fractures, in addition to longer term, chronic conditions. For those children identified with an activity limitation, CHIS 2001 asked parents to identify the type of condition (physical, mental or emotional problem) that affects the child, as well as the specific condition from a list of the most common chronic conditions.

10 Federal Interagency Forum on Child and Family Statistics, *America's Children: Key National Indicators of Well-Being, 2002*. Washington, DC: U.S. Government Printing Office.

Disparities in Childhood Disability

About 3.7% of young children in California have a disability that limits the kind of play and interactions they have with other children and adults. This parent-reported rate of disability in California is similar to what has been found in national surveys for children age 0-5 years. What these national surveys also show is that when children enter kindergarten or first grade, the rates of disability nearly double, rising to approximately 6% after school entry. This near doubling in the rates of disability after school entry has been interpreted to mean that disability rates in children are actually higher than parents report. Upon school entry, many children who previously had unrecognized disabilities are identified, based on the demands for performance that come with school.

The CHIS 2001 data also show that children placed in a preschool setting prior to the age of five have a trend toward increased disability rates relative to their peers. The logic here is the same, suggesting that many young children have unrecognized disabilities that only become evident once they start school. The significance of this finding is that many children with disabilities are going unrecognized. Because these children are not identified, they will not benefit from early intervention. Such interventions could improve the long-term "developmental trajectories" of these children and further support their capacities for learning. What are the implications of these CHIS 2001 findings on disability for children, their parents, and for efforts to promote school readiness?

Not only are parents not identifying children with potential disabilities, but data from other studies suggest that children's health care providers probably have their screening "radar" set at too high a level. The routine screening for developmental disabilities that is supposed to take place at preventive well-child visits is not detecting all delays and disabilities in young children. This represents an important "missed opportunity" for detection, early intervention, and treatment that they need. Because nearly all young children see physicians at multiple points during the first five years of life, there are ample opportunities for children to receive appropriate periodic screenings for developmental, behavioral, and mental health problems. In fact, the recently proposed California Master Plan for Education recommends universal, periodic screenings for developmental, behavioral, and mental health problems to detect these problems early.

Yet there are many reasons why child health providers are not conducting developmental assessments. These include lack of training and expertise, lack of familiarity with appropriate and effective assessment tools, poor reimbursement for conducting these assessments, and physician concerns that there are often no places for treatment to refer children who are identified with problems.

These barriers to appropriate developmental health care are substantial, but are increasingly well understood and have been successfully addressed in other states. Several states have made it a priority to improve the assessment and referral of developmental disabilities, and have also sought to improve the connections between the child health delivery system and other community based early intervention programs for young children. For example, in Denver a program has been instituted in the public child health clinics to identify all children at risk for developmental, behavioral, or mental health problems and refer them to a specially designated assessment center. Connecticut has created a program called "Help Me Grow" that also helps coordinate assessment and interventions for child health providers.

As First 5 implements the universal preschool initiative in California, we can expect to see the rates of children with reported disabilities increase. At present, fewer than 25% of preschool age children are currently in a preschool setting. As more children move into formal preschool settings, rates of disability for young children may increase to levels seen for children after kindergarten entry.

Disability and Race/Ethnicity

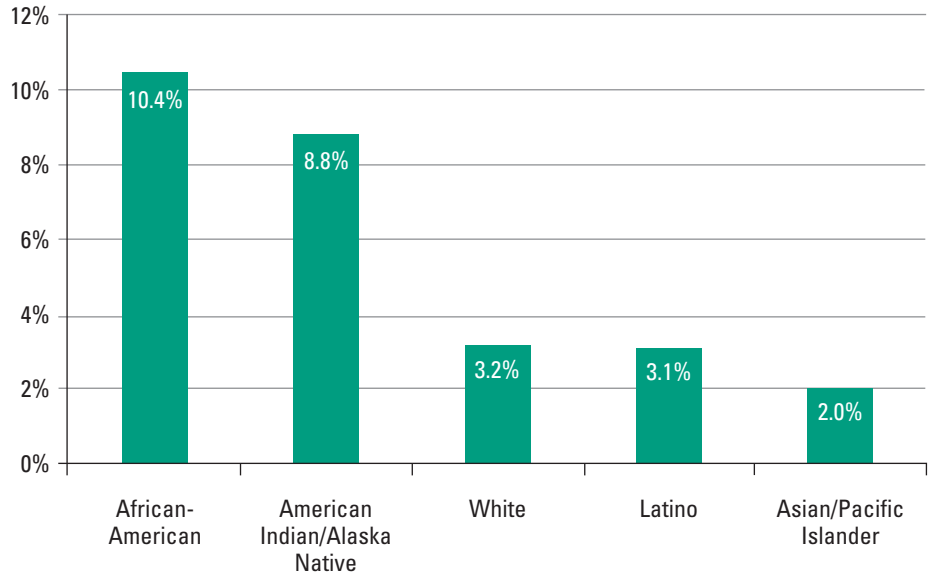
There are disparities in disability between young children of different races and ethnicities (Exhibit 7). Disability rates are higher for African-American children compared to Latino, Non-Latino White, and Asian/Pacific Islander children. The fact that Latino children have poorer reported health status but lower rates of disability shows that the burden of impairment falls more on African-American children.

The difference in rates of disability compared to the disparities and gradients in reported health status highlights the utility of multiple measures of child health, well-being and function in assessing children's readiness for school.

Disability and Family Income/Area of Residence

Rates of disability among young children are similar across income levels. The income gradient observed in children's reported health status (Exhibit 4) does not occur for disability. There is little difference in disability for young children based on area of residence. This highlights the difference between reported health status and activity limitations. Parents of children living in suburban areas report the highest rate of excellent and very good health status, yet do not differ in rate of disability. This discrepancy may underscore the difference in parent perception of what constitutes good health. It may also reflect the activity expectations for children in different environments, both socioeconomic and geographic.

EXHIBIT 7 – ACTIVITY LIMITATION BY RACE/ETHNICITY, CHILDREN AGE 0-5 YEARS, CALIFORNIA 2001



Tests of the association of race/ethnicity and disability are not statistically significant (p>0.05) (chi square).

Conditions Causing Disability

The majority of young children in California with an activity limitation (64%) have a physical condition. The most commonly reported condition is asthma, which affects 33% of children with a physical activity limitation. About one-quarter (23%) of young children with an activity limitation have a behavioral or mental health condition. Only a small percentage of children with an activity limitation (5%) have both a physical and mental condition.

Summary

Reported rates of disability are useful markers for those children who will have greater than normal health and developmental service needs. California parents report rates of disability in young children that are comparable to national rates. These rates probably represent a conservative estimate of true prevalence. The disparities among different racial/ethnic groups point to subgroups of children where greater preventive, treatment and rehabilitative interventions are warranted. Combined with better targeting of critical services to those who are known to be at risk, preventive care and health promoting activities must start before birth and continue throughout young children's lives. Disparities in reported rates of childhood disabilities demand a greater focus on the conditions and risk factors that contribute to disability in California's youngest children.

Asthma

Asthma is a disease that begins in early childhood. About 60-70% of those who ever have asthma develop the disease before their fifth birthday. Asthma is the most common chronic childhood illness among children in the United States and a cause of increasing disability.[11] Nationally, the prevalence of asthma has been rising dramatically over the last 20 years. This is substantiated by a 170% increase in asthma prevalence between 1980 and 1996 for children less than four years old.[12] Asthma can be controlled with adequate medical management. When poorly controlled, asthma influences children's general health and well being, their ability to do normal childhood activities, and ultimately their functional level in school.[13] Uncontrolled asthma is one of the leading causes of school absence.

Prevalence of Asthma

CHIS 2001 shows that about 10% of California children age 1-5 years have ever been diagnosed with asthma by a doctor. Somewhat fewer young children (3.7%) have been diagnosed and also have monthly asthma symptoms. Age-specific rates are 4.2% for children 1-2 years, 3.6% for children 3-4 years, and 3.1% for children age five. The California rates are not directly comparable to national asthma prevalence for children age 0-4 years (4.4%) largely because the National Health Interview Survey (NHIS) reports the percentage of children ever diagnosed with asthma who had asthma episodes in the past year, and because the NHIS measure includes children under 12 months of age.[14]

Some studies suggest that asthma is in fact an under-diagnosed condition,[15, 16] particularly among inner-city children.[17] The actual prevalence of the disease might be even higher than what parents report. While CHIS and national figures are not exactly comparable due to small differences in measurement, asthma is clearly a problem for young children in California.

11 Newacheck P and Halfon N. (2000) Prevalence, Impact, and Trends in Childhood Disability Due to Asthma *Archives of Pediatric and Adolescent Medicine*, 154(3): 287-93.

12 Akinbami L, Schoendorf K. (2002) Trends in Childhood Asthma: Prevalence, Health Care Utilization and Mortality. *Pediatrics*; 100:315-22.

13 Newacheck P and Halfon N. (2000) Prevalence, Impact, and Trends in Childhood Disability Due to Asthma *Archives of Pediatric and Adolescent Medicine*, 154(3): 287-73.

14 Akinbami L, Schoendorf K. (2002)Trends in Childhood Asthma: Prevalence, Health Care Utilization, and Mortality *Pediatrics*; 110(2): 315-322.

15 Grant E, Daugherty S, Moy J, Nelson S, Piorkowski J, Weiss K, (1999) Prevalence and Burden of Illness for Asthma and Related Symptoms Among Kindergarteners in Chicago Public Schools. *Annals of Allergy, Asthma Immunology*; 83(2): 113-20.

16 Silver E, Crain E, Weiss K. (1998) Burden of Wheezing Illness among U.S. Children Reported by Parents Not to Have Asthma. *Journal of Asthma*; 35(5): 437-43.

17 Crain E, Weiss, Bjur P, Hersh M, Westbrook L, Stein R. (1994) An Estimate of the Prevalence of Asthma and Wheezing Among Inner-city Children. *Pediatrics*; 94(3): 356-62.

Disparities in Childhood Asthma

CHIS 2001 provides dramatic evidence of the growing burden that asthma places on young children in California, and especially on African-American children. One of every five African-American children suffers from asthma, with half of these children having symptoms at least monthly. The fact that 9.4% of all young African-American children have at least monthly asthma symptoms is likely due in part to poorer access to needed medical care, which impedes good treatment. Other factors include the home environment, since exposures in the home serve as triggers for asthma. Genetics and family history also play a role. Health care has a key role to play because children need not only an occasional doctor visit but regular, high-quality health care.

It is often assumed that providing children with access to health insurance like Medicaid or Healthy Families is all that is needed to guarantee that children have access to appropriate medications and services. CHIS 2001 data suggest, however, that while this might be necessary, it is not sufficient. About 48% of young children covered by Medi-Cal, and 31% with private insurance, have frequent symptoms. Among children with at least monthly symptoms, a larger percentage of children in Medi-Cal than with private insurance have physical activity limitations due to asthma. Only half of young children with asthma take medication to control it.

Even though we know how to treat asthma in children, CHIS 2001 shows that young Californians are not receiving the kind of health care they need. This is suggested by national data indicating that only about 20 to 40% of all children with asthma are getting appropriate treatment and medications called for by national guidelines. Young children with uncontrolled asthma have more difficulty doing things that help them grow and develop—playing games with other children, exercising, and not feeling impaired in their daily activities.

Improving quality of health care in the clinics and community health centers where many low-income children are treated is important. Identification and treatment of childhood asthma, therefore, needs to encompass both individual and community-wide population approaches where prevention strategies are targeted to the entire child population. The potential for implementing programs in schools and in school-readiness centers must also be considered, since there is growing evidence that school-based asthma treatment and prevention programs can result in fewer symptoms, better asthma control, and less school days missed due to the disease.

Asthma disproportionately affects African-American children, who are diagnosed at twice the rate of any other racial/ethnic group (Exhibit 8). One in five African-American children age 0-5 years has been diagnosed. This difference is due in part to home exposures, community environmental factors, and genetic differences, although all factors leading to this disparity are not completely understood. Children in rural areas are also more likely to be diagnosed with asthma. This may reflect asthma-exacerbating factors present in more rural settings, such as dust and exposure to chemicals used in agricultural industries. Increased asthma rates in urban and rural areas have been found nationally.[18]

The rate of asthma diagnosis is similar among insured children (both public and private) and uninsured children. For example, 8.4% of uninsured children have ever been diagnosed compared to 9.4% of children in Medi-Cal and 11.4% of children with employer-based insurance. As asthma generally takes more than one visit to diagnose, it is important to monitor disparities in

18 Weitzman M, Gortmaker SL, Sobol AM (1990). Racial, Social, and Environmental Risks for Childhood Asthma. *American Journal of Disease in Children*. 144 (11): 1189-1194.

EXHIBIT 8 – ASTHMA DIAGNOSIS AND FREQUENCY OF SYMPTOMS, CHILDREN AGE 1-5 YEARS, CALIFORNIA 2001

	DIAGNOSIS	SYMPTOMS AT LEAST MONTHLY AMONG CHILDREN DIAGNOSED
TOTAL	**10.0%**	**36.2%**
ETHNICITY		
AFRICAN-AMERICAN	20.4%	46.3%
LATINO	9.2%	37.7%
ASIAN	9.4%	31.9%
NON-LATINO WHITE	10.4%	33.8%
INCOME		
LESS THAN 100% FPL	8.7%	43.2%
100-199% FPL	11.7%	37.5%
200-299% FPL	13.9%	43.3%
300% FPL AND ABOVE	9.5%	27.5%
AREA OF RESIDENCE		
URBAN	9.2%	34.8%
SECOND CITY	10.2%	43.5%
SUBURBAN	11.9%	31.8%
SMALL TOWN	9.9%	25.5%
RURAL	15.7%	53.0%

Tests of the association of race/ethnicity and income with health status are statistically significant ($p<0.05$) (chi square).

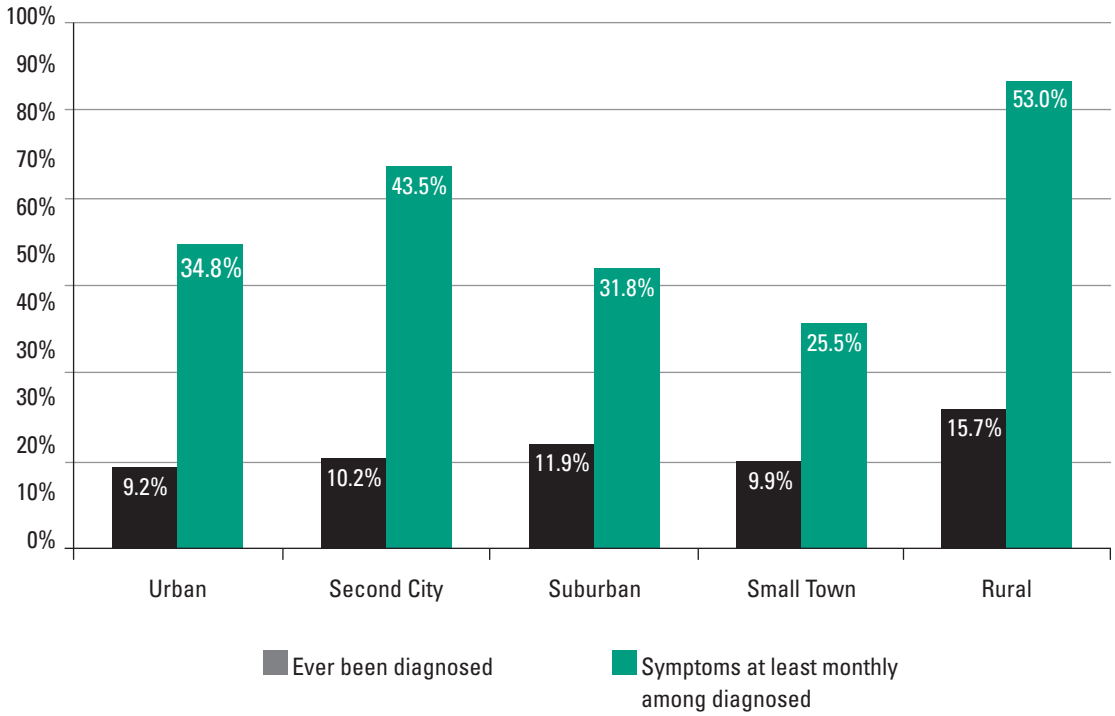
diagnosis rates that can stem from a difference in continuity with the same health care provider under different types of insurance. Children with less continuity of care may be under-diagnosed and therefore more symptomatic due to under-treatment.

Impact of Asthma

Control of asthma is reflected in the presence and frequency of symptoms. The more frequent the symptoms of asthma (i.e., coughing, wheezing, shortness of breath), the greater the disruption of normal daily activities and the greater consequences to young children's growth and development. Better control of symptoms can result from access to health care and quality health care received (i.e., continuity with a usual provider, after-hours care, and appropriate medications). Difficulties accessing quality medical care are part of the reason that not all children have good asthma control. Home and community environments, as well as genetic predisposition, also affect asthma symptoms.

About 36.2% of young children with asthma have symptoms at least once a month. Exhibit 8 shows that although young African-American children have twice the prevalence of diagnosis, the frequency of asthma symptoms is similar to children of other race/ethnicity. Still, nearly half of the African American children ever diagnosed with asthma have symptoms at least monthly. This means that 9.4% of young African American children suffer from asthma that affects them regularly compared to 3.5% of Non-Latino White, 3.4% of Latino, and 2.9% of Asian/Pacific Islander children. CHIS shows that diagnosis rates and the burden of asthma are no higher for rural residents than those in small towns and suburban areas (Exhibit 9), although sample size prevents small differences from being detected.

EXHIBIT 9 DIAGNOSED ASTHMA AND FREQUENT SYMPTOMS BY AREA OF RESIDENCE, CHILDREN AGE 1-5 YEARS, CALIFORNIA 2001



Tests of the association of area of residence with asthma diagnosis, and with asthma symptoms, are not statistically significant (chi square).

Limits to physical activity due to symptoms are another measure of asthma's impact. Among young children with at least monthly—or more frequent—asthma symptoms, 26.9% are limited by asthma at least some of the time, 31.6% are rarely limited by symptoms, and 41.6% report no physical limitation. African-American children have twice the rate of asthma diagnosis and have disease that is at least as severe as that of Latino and Non-Latino White children, as shown not only by frequency of symptoms but also by limited physical activity due to asthma (Exhibit 10).

There are disparities in physical activity limitations caused by symptomatic asthma according to the child's income level. Young children from the poorest families are more likely to "almost always" or "sometimes" have their activity limited due to asthma (41.3%) than children at 100-199% FPL (21.7%) and children with household income at 300% FPL or above (22.5%).

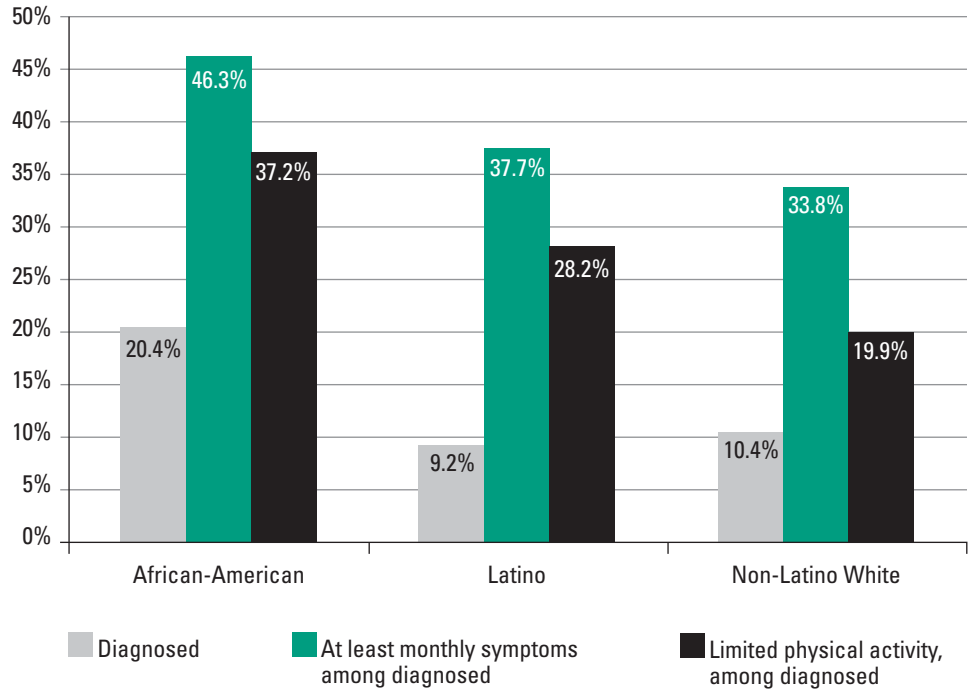
Management of Asthma

Most cases of mild to moderate asthma can be controlled with proper use of medications, avoidance of environmental allergens, adherence to medical treatment plans, and regular physician visits. Health insurance provides potential access to the ongoing medical management that is necessary for appropriate control of symptoms.

Among children age 1-5 years ever diagnosed with asthma, 52% currently take medication. There are no statistical differences in medication use between uninsured children (of whom 38% take medication) and children with Medi-Cal (52.3%) or employment-based insurance (52.4%) (Exhibit 11). Rates of medication use suggest under-utilization of effective medications among young children in all types of insurance.

There are "missed opportunities" for the use of medication even among children with frequent symptoms. Not all children with frequent symptoms or activity

EXHIBIT 10 – DIAGNOSED ASTHMA, FREQUENT SYMPTOMS, AND LIMITED PHYSICAL ACTIVITY BY RACE/ETHNICITY, CHILDREN AGE 1-5 YEARS, CALIFORNIA 2001



Tests of the association of race/ethnicity with diagnosis are statistically significant ($p<0.05$) (chi square).Tests of the association of race/ethnicity with symptoms and with activity limitations are not statistically significant.

limitations are using medication, although most children with monthly symptoms should be taking medication. About 76.7% of children age 1-5 years with at least monthly asthma symptoms take medication. Children with frequent symptoms who are not using medication may be underutilizing medications that could improve their functioning.

Among children ever diagnosed with asthma, there is a difference in activity limitations between children with different insurance types (Exhibit 11). Among those diagnosed with asthma, a larger percentage of children in Medi-Cal than with employer-based insurance have physical activity limitations. Exhibit 11 shows that children in Medi-Cal suffer from symptoms at a similar rate as children with employment-based insurance. Although use of medication varies little by insurance, children in Medi-Cal are more likely than children with employment-based insurance to suffer limitations in physical activity due to asthma (34.9% vs. 21.4%). This suggests that fewer children in Medi-Cal are receiving the medications they need, that compliance with prescribed medication is lower, or that housing conditions and environmental factors are causing a greater burden of illness.

Although African-Americans have the highest asthma diagnosis rate, there are few differences by race/ethnicity in children's symptoms, use of medication, or physical activity limitations. Among children with at least monthly symptoms, a similar proportion of Non-LatinoWhite, Latino, and African-American children are taking medications.

Better asthma management is needed for young children in both Medi-Cal and private insurance, and for children in all racial/ethnic groups, given that not all symptomatic children are taking medication and that many of them are limited in their physical activity, at least some of the time, due to asthma.

Other useful measures of access to health care include emergency department visits and hospital stays for asthma. CHIS data show that among young children with asthma, about 22.3% (59,000 children) have one or more emergency department visits during the year due to asthma. About

one-third (33.6%) of toddlers age 1-2 years with asthma have at least one emergency department visit due to asthma, with rates slightly lower for children of preschool age (19.2%) and for children age five years (11.5%). Fewer children with asthma have hospitalizations due to their disease. About 4.1% (11,000 children) have a hospitalization due to their asthma during the year.

Summary

The prevalence of asthma is rising among young children nationally. The rates of asthma diagnosis, symptoms, and limitations to physical activity identified in CHIS show that many young children in California are in need of diagnosis, treatment and preventive services. An astonishing one in five young African-American children in California have been diagnosed with asthma. The impact of asthma differs for children with different insurance coverage and disproportionately burdens children in Medi-Cal. Not all children with asthma are taking medication and managing their symptoms so that physical activity limitations can be avoided. The disparity in the burden of asthma shows the need to improve access and quality of health care to curb the development and exacerbation of asthma in very young children. Poor asthma management often results in costly services such as emergency department visits and hospitalizations. Because many of the consequences of asthma are preventable, improving access to health care is a high priority for children with this disease. Bolstering the quality of care and self-management support services for children enrolled in public insurance programs could reduce these disparities.

Activity limitations due to asthma can be a considerable barrier to a young child's development. Given the impact of asthma, and the potential impact of other chronic conditions on child health and development, it will be important to monitor changes in asthma prevalence, severity, and access to care as a measure of how well the health care system is responding to the health care needs of young children. This is important not just for monitoring the asthma and asthma care, but because the access and quality of asthma care is potentially an important indicator of the access and quality of health care for other less common chronic health conditions.

EXHIBIT 11 – ASTHMA DIAGNOSIS, SYMPTOMS, MEDICATION USE, AND IMPACT BY HEALTH INSURANCE TYPE AND RACE/ETHNICITY, CHILDREN AGE 1-5 YEARS, CALIFORNIA 2001

		AMONG CHILDREN DIAGNOSED		
	ASTHMA DIAGNOSIS	ASTHMA SYMPTOMS AT LEAST MONTHLY	TAKING MEDICATION FOR ASTHMA	ACTIVITY LIMITED DUE TO ASTHMA
MEDI-CAL	9.4%	47.6%	52.3%	34.9%
EMPLOYMENT-BASED	11.4%	31.0%	52.4%	21.4%
LATINO	9.2%	37.7%	49.5%	28.2%
AFRICAN AMERICAN	20.4%	46.3%	66.8%	37.2%
NON-LATINO WHITE	10.4%	33.8%	47.1%	19.9%

Tests of the association of health insurance with diagnosis, symptoms, and medication use are not statistically significant while the association of health insurance and activity limitation is statistically significant ($p<0.05$) (chi square). Tests of the association of race/ethnicity with diagnosis is statistically significant ($p<0.05$) while the associations of race/ethnicity and symptoms, medication use, and activity limitations are not statistically significant.

Selected insurance and race/ethnicity categories are shown due to small sample size.