Children's Check-Ups:
Reports on Issues Critical to the Health of Minnesota Children

Check-Up 1: Summary on the State of Children's Health in Minnesota

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Introduction

We Minnesotans tend to believe that our children, like the children of Garrison Keillor's Lake Wobegon, are "above average" – at least when it comes to health and well-being.

We have good reason – Minnesota often ranks high in nationwide health and wellness reports, including one report released this summer that ranked Minnesota kids second among the states in overall well-being based on a strong high school graduation rate and relatively low rates of infant and teen mortality.[1]

Signs of Trouble

But there are signs of trouble and uncertainty for our children. We've seen an alarming nationwide rise in childhood obesity. Smoking, binge drinking, unprotected sex and other risky behaviors continue to be a challenge for our teenagers. At the moment, it is unclear whether nationwide healthcare reform will successfully address problems faced by uninsured children, or those with limited access to care.

In Minnesota, the sluggish economy has hurt our state's budget, leading to cutbacks in government programs that affect the health of our children, such as school physical education and state-supported health services programs. Things aren't likely to get better anytime soon – Minnesota policymakers face a projected $5.8 billion shortfall in 2012-2013.[2]

As the largest children's healthcare organization in the state, Children's Hospitals and Clinics of Minnesota feels strongly that we must not be complacent when it comes to the health of our children. We need to take stock of how our children are doing – a "check-up," if you will – to ensure our reputation for good health remains well deserved.

That's why we have teamed up with the University of Minnesota State Health Access Data Assistance Center (SHADAC) to assemble the best and most timely available data from a variety of sources relating to the health of Minnesota children. Out of this data, SHADAC has created a series of charts referred to as a "chartbook," on "The Health of Minnesota's Children," to track and analyze how Minnesota is doing on a number of key indicators of child health. The following report on the ***State of Children's Health in Minnesota*** is based on that chartbook.

Our state's leaders must not become complacent about the health of Minnesota's children. Keeping our children healthy will pay a lifetime of dividends in healthy, productive citizens.

More Questions than Answers

We expect this report will raise as many questions as it answers about the health of Minnesota's children. In fact, raising the right questions is a key purpose of this report, and the chartbook upon which it is based.

With that in mind, this chartbook will serve as the foundation from which to launch Children's Check-Ups, a series of in-depth reports to be released regularly over the next two years. These reports will more closely examine the issues and questions raised in this initial summary report. They will also put forth ideas and possible policy recommendations to address those issues.

The first of these in-depth reports will be issued soon, taking a thorough look at vaccinations – how we are doing in getting our children vaccinated, where we are falling short, and what challenges or obstacles we face in protecting our children's health.

Our Children's Check-Ups series can help shine a light on the health challenges faced by Minnesota's children. More importantly, it will serve as a guide for leaders in government, health care, education and private industry to help protect and improve the health of our children.

We will partner with other stakeholders from across the state to raise awareness of the challenges and opportunities regarding children's health and wellness.

Our state's leaders must not become complacent about the health of Minnesota's children. Keeping our children healthy will pay a lifetime of dividends in healthy, productive citizens.

We look forward to getting the conversation started.

Alan L. Goldbloom, MD
President and CEO
Children's Hospitals and Clinics of Minnesota

The State of Children's Health in Minnesota

The following summary is an important review of the University of Minnesota State Health Access Data Assistance Center (SHADAC) chartbook, which draws on the best and most timely available data from a variety of sources to look at how Minnesota's children fare in terms of health insurance, health care access and use, health status, and health behaviors. Where possible, comparisons are made to neighboring states and national averages. Some of the data sources allow for analysis of variation across regions within Minnesota, which is also important to understanding how Minnesota's children are doing and what strategies are needed to meet their health needs.

An examination of the state of children's health in Minnesota shows that, for the most part, the health of Minnesota's children is above average. Nine of every 10 Minnesota children are in either excellent or very good health, better than the national average of more than eight of 10, according to the 2007 National Survey of Children's Health.[3] Minnesota children are fortunate to be part of families that have income and education levels that are above average when compared to the Upper Midwest and the nation, and they also are more likely to receive private health insurance coverage.

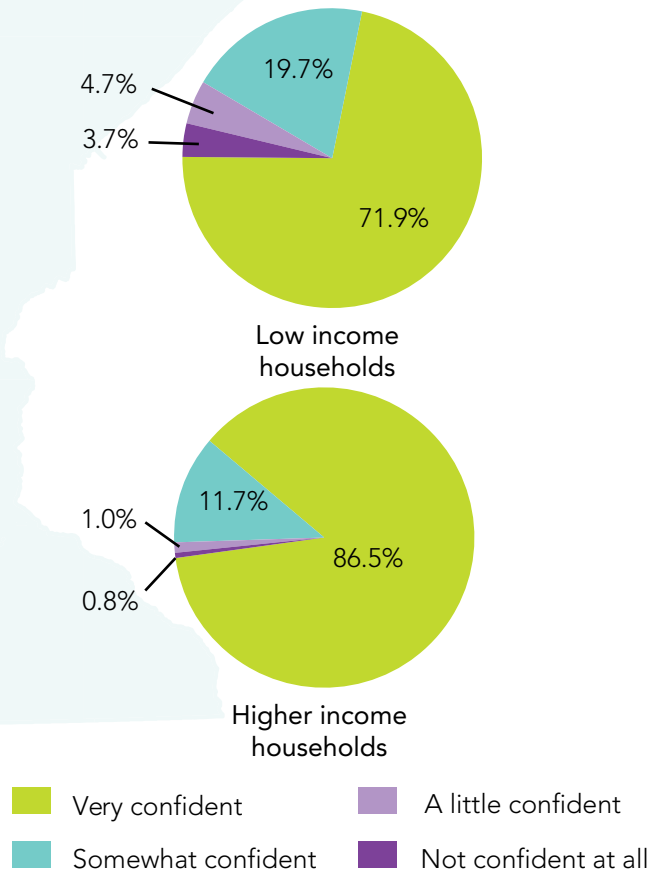
But there are pockets of concern. Minnesota has a more diverse population than most other Upper Midwest states, and the data show significant disparities in access to health care among these minority populations. In addition, while the vast majority of Minnesota children have some kind of health care insurance, kids can sometimes slip through the cracks. For example, in 2009, one in eight kids was uninsured for part of the year. Compared to white children, non-white children and Hispanic children are much more likely to be uninsured. Three of every 10 children live in low-income households where the parents are not confident they can get needed health care for their children.

Minnesota does well when it comes to making sure kids get preventive care and screening for behavior problems. Minnesota kids have better oral health and lower rates of asthma, obesity and attention deficit disorders. Minnesota babies are less likely to be born underweight or die.

On the other hand, Minnesota children have higher rates of complications from diabetes and of depression and anxiety. Minnesota's track record of making sure our kids get their vaccinations is spotty. And there are several worrisome trends in the behaviors of Minnesota children, including poor eating habits; declining physical activity among older girls; high rates of smoking (especially among boys); binge drinking; and sex.

Three of every 10 children live in low-income households where the parents are not confident they can get needed health care for their children.

Confidence in finding needed care for Minnesota children



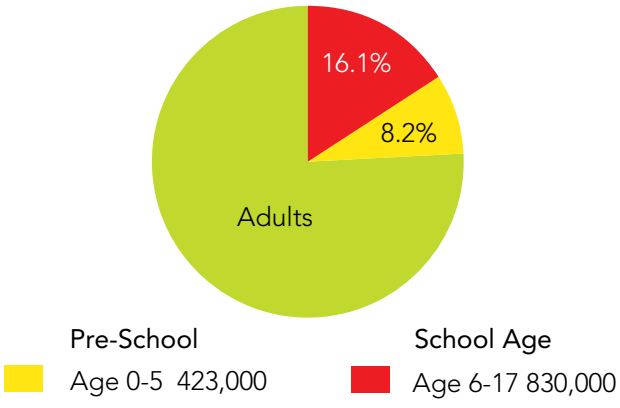
Source: Exhibit 2.15, Chartbook

Income and Education are Leading Health Indicators for Minnesota's Children

On a socioeconomic basis, the quality of a child's health in Minnesota tends to improve or decline along with the income and education level of his or her family.[4] The good news is that Minnesota families are better off than families in most other states.

Minnesota has 1.25 million children 17 years old or younger, or 24% of the total state population in 2008 – a proportion comparable to other states in the Upper Midwest (average 24%) and in the nation (25%).[5] A third of Minnesota's children, or 423,000, are five years old or younger.[6]

Children in Minnesota



Source: Exhibit 1.1, 1.2, Chartbook

Minnesota families have higher incomes and more education than families in the other four Upper Midwest states: Iowa, North Dakota, South Dakota and Wisconsin. Nearly half (49%) of Minnesota children live in families with annual incomes of more than $75,000, compared to 43% for the five-state region and 39% nationally.[7] Conversely, Minnesota has fewer children living in low-income households (as defined by less than twice the poverty level) than do neighboring states or the rest of the nation (29% in Minnesota, compared to 33% and 40% for the region and the nation, respectively).[8]

Within Minnesota, the West Central region has the highest percentage (44%) of children in low-income households, while the Twin Cities region has the highest percentage (45%) of children in high-income (above 400% of the poverty level) households.[9]

Another advantage that Minnesota children enjoy is that they are more likely to live in families where at least one parent has a college degree – 48% in Minnesota, compared to 41% in the five-state region and 36% in the nation.[10]

If there is any area of socioeconomic concern, it's that Minnesota's youngest, most vulnerable children are somewhat more likely to live in lower-income households than are older Minnesota children.[11] These younger children are less likely than older ones to have private insurance and more likely to have public insurance, both in Minnesota and nationally.[12] Even so, these young Minnesota children are less likely to live in lower-income households than are their peers in other Upper Midwest states or the nation.

Health Status of Minnesota Children

With more than nine out of every 10 Minnesota children (91%) in excellent or very good health, Minnesota is doing better than the national average (84%) and also is a bit above the five-state region's average (89%).[13]

Again, however, for both Minnesota and the nation, the percentage of children reported to be in fair or poor health is higher among low-income children (3%) than for higher-income children (1%).[14] There is also some significant variation by race/ethnicity, with Hispanic children the most likely to be in fair or poor condition at 10%, and least likely to be in excellent or very good health (61%).[15]

Good Oral Health: Oral health can affect general health as well as quality of life, and it is encouraging that the dental health status of children in Minnesota and the Upper Midwest is better than that in the nation overall. Nearly four in five Minnesota children (78%) have teeth that are in either excellent or very good condition compared with the national average of 70%, based on the 2007 National Survey of Children's Health.[16] Among low-income Minnesota children, 65% have teeth in excellent or very good condition, compared to 56% of low-income children nationally. Among higher-income children, 84% have teeth in excellent/very good shape compared with 80% of their peers nationally. Hispanic children are more likely to have teeth in fair or poor condition (15%) than white (3%) and non-white (4%) children in Minnesota.[17]

Hispanic Kids More Likely to Have Chronic Conditions: Overall, 20% of Minnesota children have one or more chronic conditions, similar to the national average of 22%. In Minnesota, Hispanic children stand out as being more likely to have chronic health conditions than the statewide average (28% vs. 20%).[18] There is very little variation

by income among children with one or more chronic conditions.[19] Among Minnesota children up to the age of five years old, 8% have at least one chronic condition; that rises to 27% among six- to 11-year olds, and levels off at 26% for 12- to 17-year-olds.[20]

- Asthma – 9% of Minnesota children have been diagnosed with asthma, compared to 14% nationally.[21]
- ADD or ADHD – 7% of Minnesota children ages two to 17 have been diagnosed with Attention Deficit Disorder or Attention Deficit Hyperactive Disorder (ADD or ADHD), compared to 8% nationally.[22]
- Depression or anxiety – 9% of Minnesota children ages six to 17 have been diagnosed at some point with depression or anxiety, compared to 8% nationally. [23]
- Obesity – among Minnesota children ages 10 to 17, 12% are overweight and an additional 11% are obese, compared to national averages of 15% and 16% for overweight and obesity, respectively. [24,25]

In Minnesota, nearly one in five (18%) children has a special health care need,[26] which is on par with the national average (19%).[27] Special needs rise with age: one in 10 (9%) Minnesota children under the age of five has a special health care need, compared to one in five (20%) for ages six to 11 and one in four (25%) for children ages 12 to 17. Children in other Upper Midwest states as well as the nation have similar rates of special needs. [28]

Fewer Low Birthweights: Minnesota babies generally fare better than the national average. In Minnesota, 6% of babies born in 2008 were low birthweight, compared to 8% nationally.[29] Minnesota's infant mortality rate (deaths among children less than one year of age) was 6.0 per 1,000 live births in 2008, compared to 6.8 nationally. Minnesota also has a lower neonatal mortality rate (deaths among children under 28 days old) than the national average – in 2008, Minnesota's rate was 3.8 per 1,000 live births, compared to 4.4 nationally.[30]

Disparities in Health and Access to Health Care Among Minnesota's Children

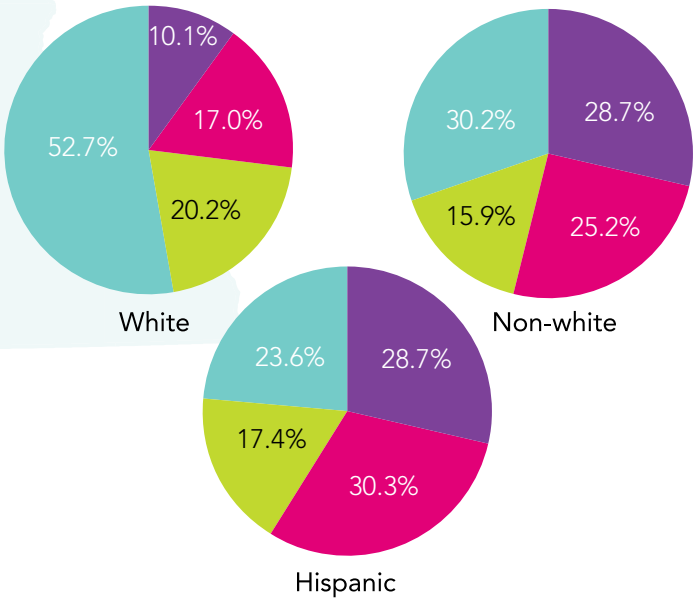
Minnesota children tend to have more racially and ethnically diverse backgrounds than other children in the Upper Midwest. Unfortunately, there are significant disparities in health and access to health care among these minority populations.

Minnesota's population has become increasingly diverse over time. In fact, it is more diverse than three of the five Upper Midwest states, with the exception of South Dakota. That said, nearly 86% of Minnesota's children are white, substantially higher than the national total of 73%; 9% of Minnesota children are identified as black (compared to 16% nationally), and 7% are Hispanic (compared to 22% nationally).[31] Within Minnesota, the Twin Cities metropolitan area has the most diversity – 25% of children in this region are non-white, and 8% are Hispanic. Second in diversity to the Twin Cities is the Southwest region of the state, where 10% of the children are non-white and 13% are Hispanic.[32]

The research demonstrates that, for a variety of reasons, the health and access to health care for white children in our state is better than that for children from non-white and Hispanic families.

Clearly, one factor accounting for racial and ethnic disparities in health and health care is correspondingly lower household income. Research shows that white children tend to come from higher income families than non-white and Hispanic children. This is true both nationally and in Minnesota, where 52.7% of white children live in households with incomes of $75,000 and higher,

Household income by race/ethnicity



Source: Exhibit 1.8, Chartbook

compared with 30.2% of non-white children and 23.6% of Hispanic children.[33]

Private Insurance is Predominant: Given those income disparities, it should come as no surprise that in Minnesota, and throughout the country, white children are more likely than non-white and Hispanic children to have health insurance coverage, especially private coverage.[34] Clearly, health insurance influences the likelihood that a child is able to access appropriate health care services.

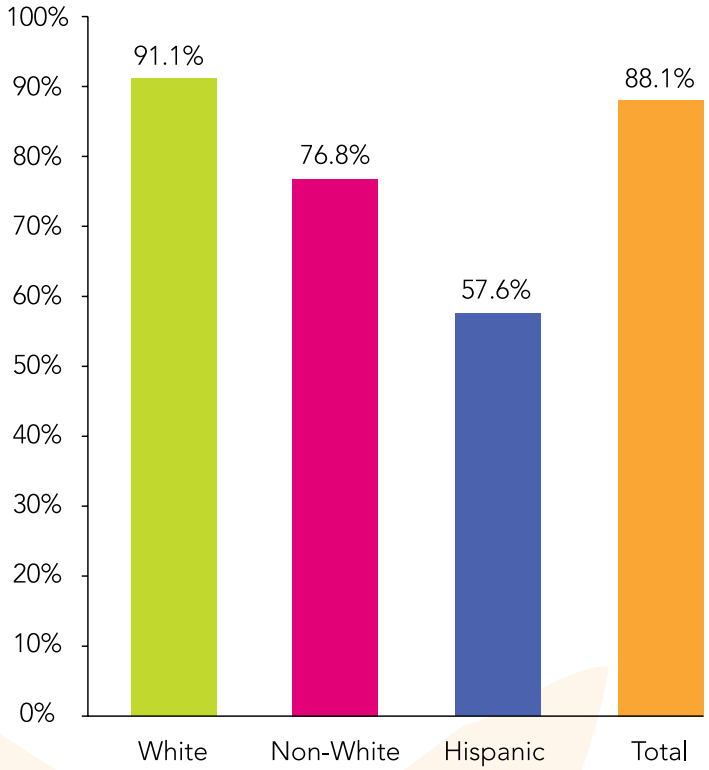
The good news for Minnesota is that the proportion of children covered by private insurance (78%) is higher than the five-state area (76%), and well above the national average of 64%.[35] More than three in four (77%) Minnesota children have a parent who works for an employer that offers health insurance coverage.[36] Access to private or employer health insurance coverage varies by region within the state, ranging from a low of 70% in the Southeast to a high of 80% in the Twin Cities.

Enrollment Lags Eligibility: For a variety of reasons, including affordability and quality of coverage, eligibility for health insurance coverage does not always mean that the employee will enroll in the program.[37] Among children eligible for health insurance through an employer, 88% were actually enrolled in 2009, ranging from a low of 81% in the Northwest to a high of 90% in the Twin Cities.[38] In fact, low-income children are much less likely to have a connection to an employer that offers health insurance coverage (51% vs. 89% for higher-income children).[39] When eligible for employer coverage, only two-thirds (66%) of low-income children enroll, compared to 94% of higher-income children.[40]

White children in Minnesota are more likely to be connected to an employer that offers health insurance coverage than non-white and Hispanic children (81% vs. 57% and 54%, respectively).[41] In addition, white children are more likely to be enrolled in employer health insurance for which they are eligible (91% take-up, compared to 77% and 58% for non-white and Hispanic children, respectively).[42]

When it comes to insurance for dental care, nearly one in five (19%) Minnesota children are reported to lack dental insurance, with low-income children more likely than higher-income children to be without dental insurance (24% compared to 17%).[43] Among the various regions of Minnesota, children are most likely to be without dental insurance in the Southwest (38%) and West Central (29%) regions, and least likely to be without dental insurance in the Northeast (12%) and the Twin Cities (16%).[44] The percentage of Hispanic children without dental coverage (37%) is twice as high as the percentage of white and non-white children without dental coverage (18% and 20%, respectively).[45]

Take-up of available employer coverage by race/ethnicity



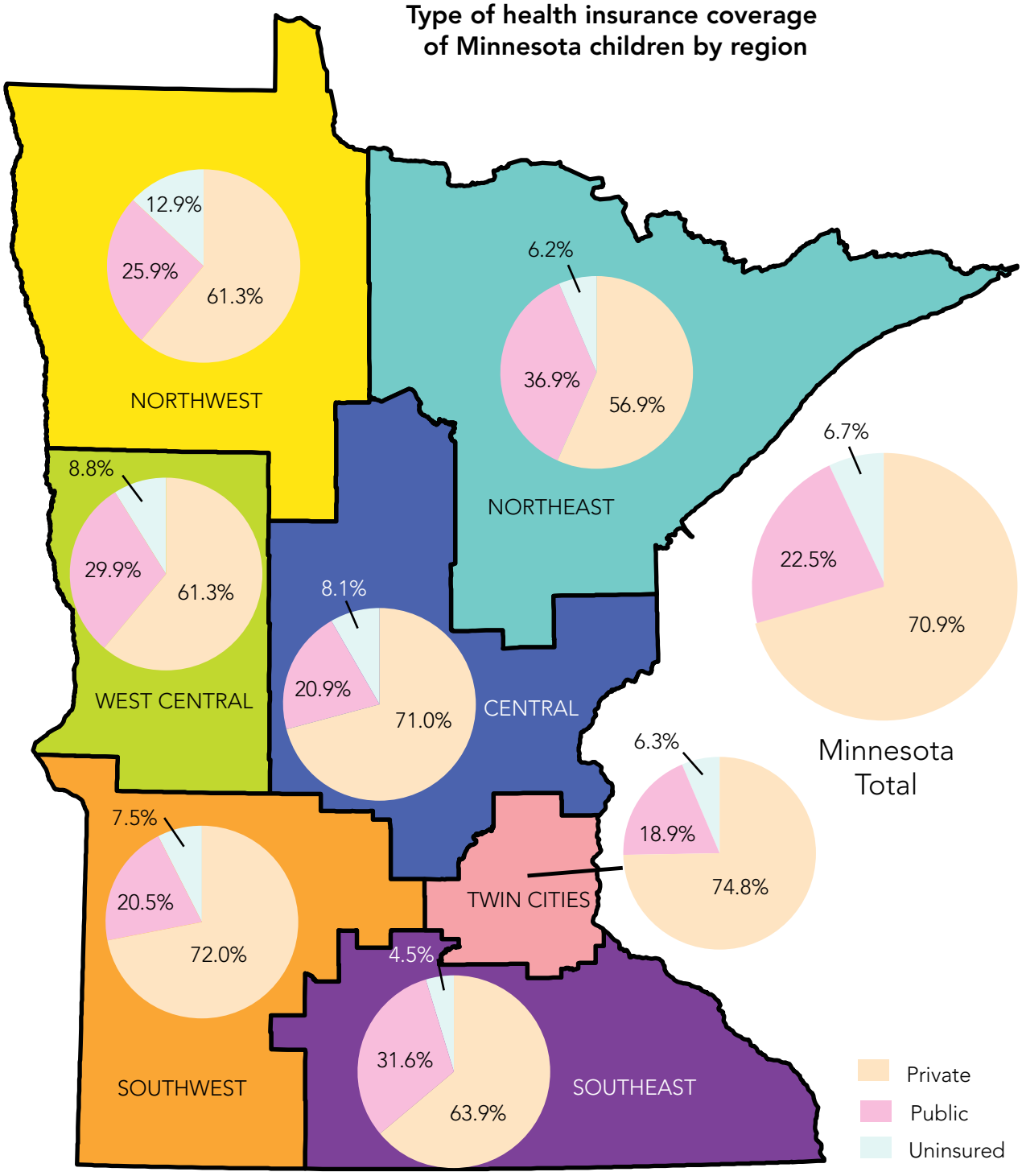
This chart only includes those who are eligible to enroll in employer-sponsored health care plans

Source: Exhibit 2.9, Chartbook

Public Insurance and the Uninsured: Given the high rate of Minnesota children covered by private insurance, it should come as no surprise that Minnesota children are less likely to be on public health insurance or without insurance than children in other Upper Midwest states.

Fewer Minnesota children receive public insurance than children in the five-state region, and this is well below the nation's rate.[46] Within Minnesota, the Twin Cities has the lowest ratio of uninsured children and

Type of health insurance coverage of Minnesota children by region



Source: Exhibit 2.5, Chartbook

Minnesota Health Access Survey

children on public health insurance of any region of the state. Of the seven regions within Minnesota, the Twin Cities has the lowest percentage (19%) of children on public insurance and third lowest rate of uninsured (6%).[47]

Income eligibility cutoffs for public insurance are higher in Minnesota than they are for children in North Dakota and South Dakota, but lower than eligibility cutoffs in Iowa and Wisconsin.[48]

Overall, the uninsurance rate for children in Minnesota (7%) is in the middle of the pack in the five-state region (6%) but lower than the national average (10%), as measured in 2008 by the American Community Survey. Within Minnesota, the uninsurance rate for children is 6.3% in the Twin Cities, and ranges from a low of 4.5% in Southeastern Minnesota to 12.9% in Northwestern Minnesota.[49]

In 2009, 12% of Minnesota children had been uninsured at some point in the past year, and 4% had been uninsured for a year or more. These "all year" and "some point in year" measures of uninsurance were higher for low-income children: nearly one in four (22%) of low-income children were uninsured at some point in the past year, and 9% of low-income children were uninsured for a year or longer.[50]

The uninsurance rate is substantially higher for low-income children than it is for higher-income children, both in Minnesota and nationally. Minnesota children in low-income households (income below 200% of the poverty level) are 3.5 times more likely than higher-income children to be uninsured (12.7% vs. 3.6%); this gap is wider in Minnesota than nationally (where low-income children were 2.7 times more likely to be uninsured).[51] More than one in five (22%) children of low-income families are uninsured at some point in the year, a rate three times higher than other families (7%).[52]

Non-white children in Minnesota are 1.5 times more likely than white children to be uninsured, and Hispanic children are more than four times more likely than white children to be uninsured. These disparities are larger than those that exist at the national level, where the uninsurance rates for non-white and Hispanic children are 1.5 and 3.8 times higher than the rate for white children.[53] Although the uninsurance rate for all children is lower in Minnesota than nationally, Hispanic children in Minnesota have a higher uninsurance rate than the national rate (23% in Minnesota compared to 19% nationally).[54]

Variations in Access to and Sources of Care: The vast majority of Minnesota children (96%) have a usual source of medical care. There is some variation by family income, with 93% of children in low-income families having a usual source of care and with Hispanic children least likely to have a usual source of care (87%).[55]

Higher-income parents are more confident in their ability to get needed care for their children than are lower-income parents (87% very confident vs. 72% for lower-income parents).[56] Parents of non-white and Hispanic children are less confident than parents of white children[57] to get needed care for their children, and this confidence is much lower among parents of uninsured children (51%) than parents who had some type of insurance.[58]

In 2009, 12% of Minnesota children had been uninsured at some point in the past year, and 4% had been uninsured for a year or more.

Most often, the usual source of care for children is a private clinic or doctor's office (88%), although this too varies by demographic factors. Low-income children (16%) and non-white (11%) and Hispanic children (29%) are more likely to have a sliding fee scale, public health, or free clinic as their usual source of care.[59]

Gaps in Medical Home: While having access to medical care is important, there is a growing consensus that patients – especially those with chronic illness – have better outcomes when their care is coordinated by a single health care provider. Called the "medical home" model, this approach involves having a single provider who is responsible for coordinating care for patients with chronic illness.

More than six of 10 Minnesota children (63%) had a medical home in 2007, the same as the average for the five-state region (64%) but higher than the national average of 58%.[60] Minnesota children in higher-income families are more likely to have care that meets the definition of a medical home than are low-income children (68% compared to 53%).[61] Similarly, there are gaps by race/ethnicity – white children in Minnesota are 1.3 times more likely to have a medical home than non-white children (66% vs. 50%), and 1.7 times more likely to have a medical home than Hispanic children (66% vs. 38%).[62]

Nearly one in three (31%) Minnesota children who used the ER went there for a minor condition that probably could have been treated at a clinic or urgent care center. [67]

Troublesome Trend – ER as Primary Source of Care: Minnesota is part of a troublesome national trend, in which health care patients use the Emergency Room (ER) as their primary source of health care (even in non-emergency situations). Using the ER for basic care is a poor use of health resources, and leads to overcrowded emergency facilities and increased medical costs. Using the ER as a usual source of care is more prevalent in some areas of the state outside the Twin Cities. Children from low-income families are three times as likely as children from higher-income families (3% vs. 1%) to consider the ER or urgent care centers as their usual source of care.[63] Among racial and ethnic groups, children of Hispanic families are far more likely than whites and non-whites to use the emergency room as a usual source of care (8%).[64]

Nearly one in five Minnesota children (18%) visited the ER one or more times in the past year, with low-income children more likely (22%) than higher-income children (16%) to go to the ER.[65] There is very little differentiation by race or ethnicity among this group.[66] Nearly one in three (31%) Minnesota children who used the ER went there for a minor condition that probably could have been treated at a clinic or urgent care center.[67]

Preventive Care and Management of Chronic Conditions

A key to maintaining the health of children is regular preventive care and strong management of chronic conditions. Regular check-ups, preventive dental visits, immunizations, and other measures can prevent disease or enhance the effectiveness of treating a disease or condition through early diagnosis.

Overall, Minnesota children are in the middle of the pack with regards to the preventive approach. Most Minnesota children had a preventive medical visit (84%) within the last year, similar to the averages for the five-state region and the U.S. as a whole.[68] Children from lower-income families are somewhat more likely to make a preventive medical visit than are children from higher-income families (88% vs. 82%) – a finding that runs counter to the overall trend of a child's health rising and falling with the income of their household.[69] There is very little differentiation in frequency of preventive visits among children of various racial and ethnic backgrounds.[70]

Standardized Screening Beats Standards: Likewise, Minnesota children are more likely to receive standardized screening for development and behavioral problems than children in the five-state region or nationally.[71]

Children from lower-income families are somewhat more likely to make a preventive medical visit than are children from higher-income families (88% vs. 82%) — a finding that runs counter to the overall trend of a child's health rising and falling with the income of their household. [69]

Preventive Dental Care: Minnesota children do not do quite as well in preventive dental visits; 80% of Minnesota children had a preventive dental visit in 2007 – similar to the other states in our region and in the U.S.[72] Children of higher-income families are more likely to have had a preventive dental visit than those in low-income families (83% vs. 72%).[73] Non-white children are least likely to have a preventive dental visit (69%) while white children are most likely (81%).[74]

Vaccinations are Spotty: When it comes to receiving vaccinations, Minnesota children are in the middle of the pack both in the Upper Midwest and the nation. In 2008, nearly four out of five Minnesota children ages 19 to 35 months had received all recommended vaccines (77%).

Minnesota girls did not do as well as other Upper Midwest states in getting

the HPV vaccine, which inoculates girls against the human papillomavirus (HPV), the most common sexually transmitted infection and the primary cause of cervical cancer.[75] One in three Minnesota girls from the ages of 13 to 17 (34%) get the vaccine, compared with 47% in Wisconsin and 37% in US.[76]

Two of five (39%) Minnesota children ages 13 to 17 get the meningitis vaccine. That's just below the 42% average in the U.S. and Wisconsin's 52% average, but well above the 14% ratio in North Dakota.[77]

Good at Treating Asthma, But Not Diabetes: Just as preventive care and vaccinations are important to a child's quality of life and future health, so is the management of chronic conditions among children. In 2005, Minnesota performed considerably better than the national average on hospital admissions for pediatric asthma (81 admissions per 100,000 children ages two to 17, compared to 126 nationally).[78] On the other hand, Minnesota did not do well in managing diabetes among children. The rate of hospital admissions for short-term complications of diabetes for children ages six to 17 is higher for Minnesota children than the national average (33 per 100,000, compared to a national average of 27).[79]

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Troublesome Lifestyle Factors

How children eat, exercise and view themselves can have a great impact on their present and future health; so can their choices whether to drink, smoke, or engage in sexual activity.

With that in mind, there are some worrisome trends among Minnesota children's lifestyle choices:

Minnesota Kids Don't Eat Enough Fruits and Vegetables: Fewer than one in five children eat the recommended five daily servings of fruits and vegetables. There is little variation among boys and girls, and the ratio tends to decline slightly as the child goes from sixth grade to ninth grade to 12th grade. Overall, 58% of sixth-grade boys an 62% of sixth-grade girls report that they eat three or more servings of fruits and vegetables per day.[81]

Girls Get Less Exercise: On average, boys report being more physically active than girls – a difference that widens as children go through high school. Among sixth-graders, 76% of boys report being active for at least 30 minutes on three or more days per week, compared to 73% of girls. By 12th grade, these percentages decline to 73% for boys and 56% for girls.[82] The number of days of physical activity for 30 minutes declines significantly for girls in Minnesota from 27% getting two days or less of physical activity in the sixth grade to 42% getting two days or less in 12th grade. Comparably, boys do a better job at keeping physically active, as the percentage of boys getting two days or less of physical activity rises only slightly from 24% of sixth-grade boys to 28% of 12th-grade boys.[83]

Girls Feel Overweight as They Get Older: Among both boys and girls, the percentage that report feeling overweight increases with age, but the increase is much larger for girls. Girls who feel that they are overweight increase from 20% in sixth grade to 29% in ninth grade to 32% in 12th grade. Boys, however, stay fairly steady at 16%, 17% and 18%, respectively, for those same grades.[83]

More Boys Use Tobacco: While tobacco use has long been a risky behavior associated with girls, boys appear to have caught up – and then some. While there is little tobacco use reported among boys or girls in the sixth grade, experimentation with tobacco use rises among ninth grade boys. By the time they hit 12th grade, 42% of boys report they have used tobacco in the last 30 days and 18% are regular tobacco users (used tobacco 20 times or more in last 30 days). Among girls, the comparable ratios are 27% who tried it in the last 30 days, and 11% who are regular tobacco users.[84]

Boys and Girls engage in Binge Drinking: More than one in three 12th-grade boys and one in four 12th-grade girls report that they engaged in binge drinking within the last two weeks of the time of the survey. Like smoking, drinking alcohol escalates over time. In sixth-grade, 4% of both boys and girls reported they used alcohol in the last 30 days and there were virtually no reports of binge drinking. That rises to 23% who drink and 13% who binge drink among ninth-grade boys – the same as girls, of whom 25% drink and 13% engaged in binge drinking. By 12th-grade, nearly half of all boys and girls say they drank alcohol within the last 30 days, and binge drinking becomes frequent – 35% of boys and 25% of girls say they had engaged in binge drinking within the previous two weeks.[85]

Sex and Birth Control: One in five ninth-graders (21% for boys and 17% for girls) report having had sex, rising to half of 12th-graders (49% for both boys and girls).[86] Twelfth -graders who are sexually active are much more likely to report using birth control than ninth-graders – 78% of 12th-grade girls and 71% of 12th-grade boys report always or usually using birth control, compared to 50% of ninth-grade girls and 47% of ninth-grade boys.[87]

By 12th grade, nearly half of all boys and girls say they drank alcohol within the last 30 days, and binge drinking becomes frequent — 35% of boys and 25% of girls say they had engaged in binge drinking within the previous two weeks. [85]

Conclusion

As might be expected, this report raises as many questions as it provides answers. How has the slump in our economy affected access to health insurance? While Minnesota's children do well in many areas, why do they lag in others? What can be done to reduce risky behavior among our teens? How can the health of our poorest and most vulnerable children be improved?

There are no easy answers. Yet solutions to these issues will only be found if health policy leaders and others in our state come together to focus attention on them. In future Children's Check-Ups, Children's will be exploring solutions while delving further into issues such as access to medical care and the uninsured; preventive care and immunizations; nutrition, inactivity, feelings of being overweight and obesity; teenage smoking, drinking and other risky behaviors; medical home; and infant mortality.

Children's hopes this initial report and the reports that follow will bring attention and understanding to issues that affect children's health in Minnesota and spark dialogue and action among key decision makers and health care stakeholders across our state. In this way, Minnesota can confront these challenges and ensure a healthy and viable future for its young people.

Notes on the Chartbook

Section 1: Demographics. This section of the chartbook presents information on the demographic characteristics of children in Minnesota, the five-state region that includes Minnesota, Iowa, North Dakota, South Dakota and Wisconsin, and the nation as a whole.

Section 2: Health Insurance Coverage and Access. This section of the chartbook presents data on Minnesota children's health insurance status, as well as their sources of insurance coverage and access to employer-based insurance and public insurance. Data from multiple sources are used for the analysis in this section. For comparisons to neighboring states and the nation as a whole, we use data from the 2008 American Community Survey (ACS). For more detailed analysis within Minnesota, we use data from the 2009 Minnesota Health Access Survey (MNHA). These data sources are described more fully in the appendix to this report.

Section 3: Health Care Access and Use. This section includes a variety of indicators about Minnesota children's access to health care services and use of services. It includes data rel ated to medical homes and usual sources of care, use of preventive services, use of emergency services, and potentially preventable hospitalizations for asthma and diabetes.

Section 4: Health Status. This section of the chartbook presents information related to the health status of Minnesota children, including general medical and dental health, percentage of children with one or more chronic health conditions, and rates of specific health conditions.

Section 5: Health Behaviors and Risk Factors. This section presents data on health behaviors (nutrition and physical activity) and risk factors such as weight, tobacco and alcohol use, and sexual activity.

Data Sources and Methods

Unless otherwise specified, all analysis in this chartbook includes children ages zero to 17. In addition, all analyses by race/ethnicity allow for overlap between categories unless noted otherwise – in other words, people who provided multiple responses to these questions are included in each of the categories in which they placed themselves.

For comparisons of Minnesota to neighboring states, the "five-state region" includes Minnesota, Iowa, North Dakota, South Dakota and Wisconsin.

For regional comparisons within Minnesota, the region definitions vary slightly depending on the data source. For the Minnesota Health Access Survey, SHADAC used the same regional definitions based on economic development regions within Minnesota that are used in other published analyses of this survey. For the American Community Survey, the lowest level of geographic detail is for "public use microdata areas" (PUMAs); for the chartbook, SHADAC aggregated the PUMAs to correspond as closely as possible to the regional definitions used in the Minnesota Health Access Survey.

Data Sources:

The data used in this chartbook come from a variety of sources. Each of the data sources is described briefly below:

American Community Survey – The American Community Survey (ACS) is an annual survey conducted by the U.S. Census Bureau that includes questions on a wide range of topics, including demographics, income, employment and health insurance (beginning in 2008). The ACS is a mixed-mode survey that includes responses from mail, telephone and in-person interviews. Nationally, 4.5 million people respond to the ACS each year. The ACS collects data in every county in the nation, and its large sample size allows for the development of sub-state estimates. Data analysis for this chartbook was performed with the ACS public use microdata file.

The ACS collects data on all sources of health insurance coverage that a person may have. For this report, SHADAC analyzed the ACS data on health insurance by primary source of insurance coverage. If multiple sources of coverage were reported for a child, any private coverage was considered primary over public sources of insurance such as Medicaid.

Minnesota Health Access Survey – The Minnesota Health Access Survey (MNHA) is a telephone survey conducted by the University of Minnesota on behalf of the Minnesota Department of Health every two years. The most recent survey was conducted in 2009, and included 12,031 households. The survey asks questions about the insurance coverage of each household member, and then asks more detailed questions for a randomly selected member of the household. The analysis in this chartbook includes data on 1,838 Minnesota children who were selected for the in-depth survey in 2009.

Minnesota Student Survey – The Minnesota Student Survey is a joint effort of Minnesota schools and the Minnesota Departments of Education, Employment and Economic Development, Health, Human Services, and Public Safety. This survey of sixth-, ninth-, and 12th-graders is conducted every three years. For this chartbook, SHADAC used published state-level estimates from the 2007 survey for regular public schools.[88]

National Healthcare Quality Report – The National Healthcare Quality Report (NHQR) is an annual report published by the Agency for Healthcare Research and Quality (AHRQ) of the U.S. Department of Health and Human Services. As a supplement to this report, AHRQ publishes "State Snapshots" using state-level data for a variety of indicators. Two of these state indicators – hospitalization rates for short-term complications of diabetes (ages six to 17) and hospital admission rates for pediatric asthma (ages two to 17) – are included in this chartbook. The data were obtained from the "all-state data tables for all measures" file available from AHRQ's website as a supplement to the 2008 NHQR.[89] The data for the two hospital admission indicators used in the chartbook is from 2005, and the indicators are only available for states that participate in the Healthcare Cost and Utilization Project (HCUP).

National Immunization Survey – The National Immunization Survey (NIS) is sponsored by the National Center for Immunizations and Respiratory Diseases (NCIRD) and conducted jointly by NCIRD and the National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention. The NIS is conducted by telephone, followed by a mailed survey to children's immunization providers. For this chartbook, SHADAC used state-level estimates published by NCIRD from the 2008 NIS.[90]

National Survey of Children's Health – The National Survey of Children's Health is a national telephone survey conducted by NCHS, and sponsored by the U.S. Department of Health and Human Services' Maternal and Child Health Bureau. The survey collects data on children ages zero to 17, on a variety of topics including health status, health insurance, health conditions, health behaviors and other topics. For the analysis in this chartbook, SHADAC obtained a data set from the Data Resource Center for Child and Adolescent Health, a project of the Child and Adolescent Health Measurement Initiative (CAHMI) at Oregon Health & Science University.[91] This data set is an enhanced version of the public use file that is available from the NCHS, and includes a number of additional indicators derived from the survey questions. For example, it includes a medical home indicator that is constructed from 19 different survey questions assessing whether a child has a personal doctor or nurse, has a usual source for sick and well care, receives family-centered care, is able to get needed referrals and receives effective care coordination when needed. The race/ethnicity analysis using the National Survey of Children's Health data in this chartbook uses mutually exclusive categories rather than the overlapping categories used elsewhere in the chartbook, because those are the only categories available in the public use data file.

Vital Statistics – To obtain the most recent available state data (2008) for low birthweight and for neonatal and infant mortality, SHADAC used data published by state health departments in Minnesota and neighboring states. National data for low birthweight in 2008 was obtained from the NCHS.[92] The most recent published national estimates for infant and neonatal mortality are for 2007, and were also obtained from the National Center for Health Statistics.[93]

Technical Note:
For consistency with other published estimates from the American Community Survey, this analysis uses the Census Bureau's poverty thresholds to measure family income as a percentage of the federal poverty level. These thresholds are different from the U.S. Department of Health and Human Services' (HHS) Federal Poverty Guidelines, which are the measure used for determining eligibility for public health insurance programs such as Medicaid. Both the Minnesota Health Access Survey and the National Survey of Children's Health use the HHS Federal Poverty Guidelines for measuring family income relative to poverty. The differences between the two definitions are not large, but users should be aware of it.

(Endnotes)

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[3] Exhibit 4.1, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.
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[13] Exhibit 4.1, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.
[14] Exhibit 4.1, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.
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[17] Exhibit 4.4, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.
[18] Exhibit 4.10, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.
[19] Exhibit 4.9, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.
[20] Exhibit 4.8, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.
[21] Exhibit 4.11, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.
[22] Exhibit 4.12, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.
[23] Exhibit 4.13, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.
[24] "Overweight" is defined as Body Mass Index (BMI) for age between the 85th and 94th percentiles, and "obese" is defined as 95th percentile or above compared to standard growth charts.
[25] Exhibit 5.3, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.
[26] Children and youth with special health care needs are defined by the U.S. Department of Health and Human Services, Bureau of Maternal and Child Health, as "those who have or are at increased risk for a chronic physical, development, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally." This concept is measured through a special screening questionnaire in the National Survey of Children's Health.
[27] Exhibit 4.5, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.
[28] Exhibits 4.5 through 4.7, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.
[29] Exhibit 4.14, Chartbook. Minnesota Department of Health, Center for Health Statistics; National Center for Health Statistics, "Births: Preliminary Data for 2008," April 2010.
[30] Exhibit 4.15, Chartbook. Minnesota Department of Health, Center for Health Statistics; National Center for Health Statistics, "Deaths: Final Data for 2007," May 2010.
[31] Exhibit 1.3, Chartbook.
[32] Exhibit 1.10, Chartbook, American Community Survey, 2008.
[33] Exhibit 1.8, Chartbook, American Community Survey, 2008.
[34] Exhibit 2.3, Chartbook, American Community Survey, 2008.
[35] Exhibit 2.1, Chartbook, American Community Survey, 2008.
[36] Exhibit 2.7, Chartbook.
[37] They may not enroll because they cannot afford it, deem it a poor value, forget to enroll or have preferable alternatives.
[38] Exhibit 2.7, Chartbook, Minnesota Health Access Survey, 2009.
[39] Exhibit 2.8, Chartbook, Minnesota Health Access Survey, 2009.
[40] Exhibit 2.8, Chartbook, Minnesota Health Access Survey, 2009.
[41] Exhibit 2.9, Chartbook, Minnesota Health Access Survey, 2009.
[42] Exhibit 2.9, Chartbook, Minnesota Health Access Survey, 2009.
[43] Exhibit 2.11. Chartbook, Minnesota Health Access Survey, 2009.
[44] Exhibit 2.13. Chartbook, Minnesota Health Access Survey, 2009.
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[46] Exhibit 2.1, Chartbook, American Community Survey, 2008.
[47] Exhibit 2.5, Chartbook, Minnesota Health Access Survey, 2009.
[48] Exhibit 2.10, Chartbook, Kaiser State Health Facts, www.statehealthfacts.org.
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[51] Exhibit 2.4, Chartbook, American Community Survey, 2008.
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[53] Exhibit 2.3, Chartbook, American Community Survey, 2008.
[54] Exhibit 2.3, Chartbook, American Community Survey, 2008.
[55] Exhibit 3.2, Chartbook, Minnesota Health Access Survey, 2009.
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[58] Exhibit 2.17, Chartbook, Minnesota Health Access Survey, 2009.
[59] Exhibits 3.1 through 3.4. Minnesota Health Access Survey, 2009.
[60] Exhibit 3.5, Chartbook, Minnesota Health Access Survey, 2009.
[61] Exhibit 3.5, Chartbook, Minnesota Health Access Survey, 2009.
[62] Exhibits 3.5 and 3.6, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.
[63] Exhibit 3.3, Chartbook, Minnesota Health Access Survey, 2009.
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[66] Exhibit 3.17, Chartbook, Minnesota Health Access Survey, 2009.
[67] Exhibit 3.18, Chartbook, Minnesota Health Access Survey, 2009.
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[69] Exhibit 3.7, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.

[70] Exhibit 3.8, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.
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[72] Exhibit 3.10, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.
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[74] Exhibit 3.10, Chartbook. Child and Adolescent Health Measurement Initiative (CAHMI), 2007 National Survey of Children's Health Indicator Data Set, Data Resources Center for Child and Adolescent Health, www.childhealthdata.org.
[75] CDC: http://www.cdc.gov/hpv/.
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[78] Exhibit 3.19, Chartbook, Agency for Healthcare Research and Quality, National Healthcare Quality Report, 2008, "State Snapshots."
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[80] Exhibit 5.1, Chartbook, Minnesota Student Survey, 2007.
[81] Exhibit 5.2, Chartbook, Minnesota Student Survey, 2007.
[82] Exhibit 5.2, Chartbook, Minnesota Student Survey, 2007.
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[90] Available at *www.cdc.gov/vaccines/stats-surv/nis/data/tables_2008.htm*, last accessed June 10, 2010. *www.childhealthdata.org.*
[91] *www.childhealthdata.org.*
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