

**Uninsured Children in Kansas:
Who Are They and How Could
They Be Reached?**

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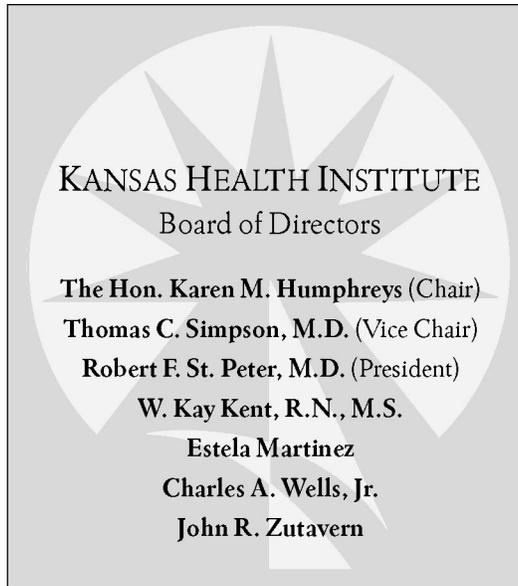
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TABLE OF CONTENTS

1. Executive Summary	1
2. Introduction	3
3. Background and Previous Research	4
4. Methodology	6
5. Findings	8
6. Discussion and Policy Implications	20
7. References and Tables	22
8. Endnotes	32

LIST OF FIGURES

Figure 1: Distribution of Kansas Children by Insurance Status.....	8
Figure 2: Distribution of Uninsured Children in Kansas by Eligibility and Enrollment in Public Health Insurance	15
Figure 3: Distribution of Uninsured Children in Kansas by Parental Coverage Status	17

LIST OF TABLES

Table 1: Characteristics of Kansas Children by Insurance Status.....	25
Table 2: Insurance and Demographic Characteristics are Inter-related.....	28
Table 3: Logistic Models of Children’s Health Insurance Status	29
Table 4: Concentrations of Uninsured Children in Kansas.....	30

1. EXECUTIVE SUMMARY

According to the Census Bureau, 11.7 percent of children nationally and 7.7 percent of children in the Midwest were uninsured for all of calendar year 2001. Based on 2001 survey data from the Kansas Health Insurance Study (KHIS), the rate of uninsurance among children in Kansas is approximately 7.8 percent. The main objective of this study is to describe these uninsured children using the 2001 KHIS for the purpose of identifying groups of children who might be targeted for policy intervention. Results indicate that a child's insurance status is related to a wide range of child and family characteristics. Socioeconomic characteristics and parental employment were found to have an especially strong relationship with a child's insurance status. However, some of these factors are difficult to use in the design of policies intended to increase children's insurance coverage, and many of them appear to be inter-related. For example, analysis suggests that a child's age, gender, and ethnicity, as well as parental education and family structure, have an important relationship with the coverage status of the child. By contrast, region of residence was not found to have a significant impact on insurance status.

Even armed with knowledge about the factors associated with insurance coverage among children, policymakers may find it difficult to select groups of children to be targeted for insurance interventions. Policymakers also may wish to take into account the overall number of uninsured children who might be affected by an intervention, how easily the intervention might reach its target population, and whether certain groups of uninsured children might be especially deserving of such interventions. This study identifies three characteristics of uninsured children that could be used to help target coverage-expanding interventions:

- **School-aged children.** The older children are, the more likely they are to be uninsured. School-aged children, in particular, comprise a large percentage of uninsured children. Hence, many uninsured children could potentially be targeted through their schools, with possible emphasis on higher grade levels.
- **Children eligible for public assistance.** Children eligible for HealthWave or Medicaid comprise the vast majority—71 percent—of uninsured children. Many of these uninsured children could conceivably be identified and targeted for intervention through their

participation in other government assistance programs, e.g., the National School Lunch Program.

- **Hispanic children.** The report finds that Hispanic children are at increased risk of being uninsured and comprise almost one-third (30%) of all uninsured children in Kansas.

Together, these three characteristics describe the vast majority of uninsured children in Kansas. Use of these characteristics to design insurance interventions may, however, be impacted by both practical and political considerations. The first two characteristics appear to lend themselves to school-based interventions, but it remains to be seen whether remaining uninsured school children can be identified in a manner that is both cost-efficient and that protects the privacy of children and their families. The finding that Hispanic children comprise nearly one-third of uninsured children in Kansas suggests the potential importance of targeting this group with additional outreach or expanded coverage options. However, the study was not designed to address key questions regarding immigration status, eligibility for public assistance, and the design of culturally appropriate outreach. Increasing health insurance coverage among children in Kansas may ultimately require both a public commitment to the necessary resources and a public discussion about the acceptable means for identifying and covering uninsured children.

2. INTRODUCTION

This report relays the findings from an analysis of uninsured children in Kansas undertaken by the Kansas Health Institute for the School of Nursing at the University of Kansas Medical Center and funded through a U.S. Health Resources and Services Administration (HRSA) State Planning Grant. The HRSA State Planning Grants are intended to support the development of plans to ensure universal access to health insurance for all state residents. HRSA's State Planning Grant to Kansas supported the design and implementation of the Kansas Health Insurance Study (KHIS), which was conducted in the late spring and summer of 2001. The grant also supported a detailed planning process spearheaded by a Steering Committee convened for the purpose of assessing the findings from the KHIS and recommending approaches for providing universal access to health insurance in the state.

The Kansas Health Institute was asked to provide a detailed analysis of uninsured children in Kansas to support the Steering Committee's planning process and to help make information from the KHIS more broadly available. Preliminary findings from this study of uninsured children were provided to the HRSA State Planning Grant Steering Committee for inclusion in its final report. This report provides a general description of uninsured children in the state, more detailed sub-group analyses identifying pockets of uninsured children who might be targeted for policy interventions, and a multi-variate analysis designed to measure the relationship between the insurance status of children and a variety of child and family characteristics. Previous analyses of uninsured children in Kansas were limited to less precise estimates of the overall rate of uninsurance based on relatively small samples. The much larger sample size of the KHIS facilitates more detailed cross-sectional analysis of children and, in particular, uninsured children.

3. BACKGROUND AND PREVIOUS RESEARCH

According to the Census Bureau, 11.7 percent of children nationally and 7.7 percent of children in the Midwest were uninsured for all of calendar year 2001.¹ Analysis of 2001 survey data from the KHIS indicates that 7.8 percent of children in Kansas were uninsured at the time of the interview.² The main objective of this study is to describe uninsured children in Kansas for the purpose of identifying groups of children who might be targeted for policy intervention. Previous research at the national level has identified numerous characteristics associated with a lack of insurance among children. Economic theory suggests that families purchase health insurance either to avoid the financial risks associated with uncertain future health costs or to gain access to expensive health care that would otherwise have been unaffordable.³ The decision to provide insurance to a child is made by the family and is subject to a number of economic constraints and a potentially large set of child and environmental characteristics. Health insurance is only one of a number of goods and services a family may consider to be useful to, or even necessary for, the well-being of the child and the family. More affluent families would, in general, be able to afford a greater number of such goods and services, including health insurance, and indeed the evidence consistently shows that insurance coverage among children increases with family income. In some ways, however, a family's income itself can be seen as part of a larger set of work-related family decisions that reflect their earnings capacity, their preferences regarding geographic location, job type, work hours, whether a second parent will work outside the home (and how much they will work, etc.), and their preferences for job-related benefits such as health insurance, pensions, and leave policies.

Numerous studies have shown the significance of family and labor market characteristics in explaining insurance status. For example, children in families with two parents are more likely to be privately insured and less likely to be publicly insured than children in one-parent families, and children with two working parents in the home are less likely to be uninsured than those with fewer working parents.⁴ Coverage of children by Employer Sponsored Health Insurance (ESHI) has been found to be a function of the number of working parents in the home, the number of hours worked, industry, and firm size.⁵ Race and ethnicity also appear to be associated with

insurance status. One study found that Blacks and Hispanics are less likely than Caucasians to be privately insured, even after controlling for other socioeconomic factors.⁶

These and other results suggest that a family's decision to purchase health insurance for a child is subject to many constraints and influences and is a decision made jointly with other work-related decisions as a family attempts to balance the child's health care insurance needs against competing family needs and interests. A family's insurance decision might very well be affected by its earnings potential. For example, families with more workers or older, more educated, more skilled, or more experienced workers might have a wider and more lucrative set of job choices and might find it easier to purchase health insurance for their children.⁷ In addition, child characteristics such as age, gender, and health status might affect a child's anticipated health care needs (and expenditures), and such needs could have an effect on the family's decision to purchase insurance for that child. Attitudes toward the need for health insurance also may differ by race, ethnicity, or other cultural characteristics.⁸ In particular, such attitudes could affect whether a qualifying family might choose to participate in a free or subsidized public insurance program like Medicaid or Kansas' State Children's Health Insurance Program (SCHIP), HealthWave. One national study, for example, found that eligible children not participating in Medicaid were older than their participating counterparts, were more likely to be White, and less likely to be Black.⁹ This is a potentially important finding given the role of public insurance as a policy tool to reduce the number of uninsured children. About 40 percent of all uninsured children nationally were Medicaid-eligible in 1996.¹⁰ One of the key elements of this report is a discussion of participation in public health insurance programs both as an explanation for current rates of insurance coverage and as a potential target for increasing coverage.

4. METHODOLOGY

Analytic Plan

This report attempts to answer a number of questions designed to help policymakers identify policies that maximize childrens' access to health insurance coverage:

- What is the insurance status of children according to various demographic characteristics?
- Which children are most likely to be uninsured?
- Are there regional differences in rates of uninsurance among children?
- How long have children been uninsured?
- What child and family characteristics are associated with children's insurance status?
- What characteristics identify the largest pockets of uninsured children?
- Might some characteristics help identify children that could be effectively targeted with policy interventions?

Descriptive and bi-variate analyses identify a number of characteristics associated with children's insurance status. However, the complex nature of family insurance coverage decisions makes it difficult to point to the most effective policy levers for increasing rates of coverage among children. A correlation between income and insurance coverage, for example, does not necessarily imply that cash assistance, e.g., the Earned Income Tax Credit, will be used by families to purchase insurance. A multi-variate model is proposed to identify a few characteristics that have an independent and potentially causal effect on insurance status. The report also uses descriptive and sub-group analyses to identify characteristics associated with large numbers of uninsured children. The discussion at the end of the report uses the numeric findings to identify groups of children who might be targeted for coverage-enhancing interventions.

Data

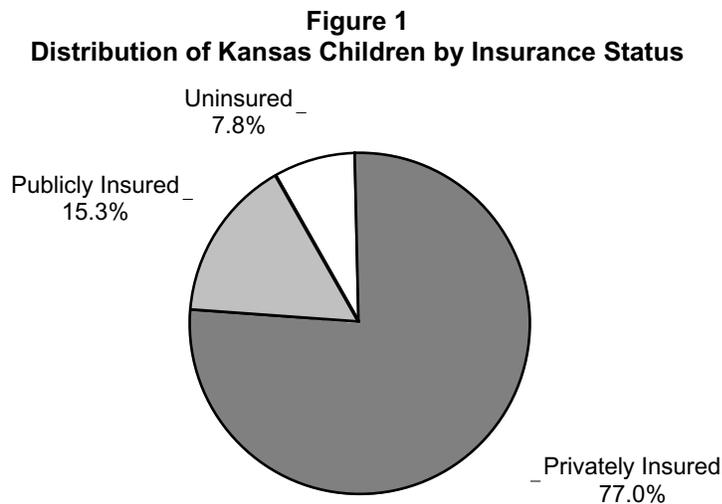
The data analyzed in this study of uninsured children in Kansas are from the Kansas Health Insurance Survey. The survey was designed by the HRSA State Planning Grant research team at the University of Kansas Medical Center in Kansas City, and in conjunction with the HRSA Steering Committee and researchers at the University of Florida's Bureau for Economic and Business Research (BEBR). The telephone survey was administered to 8,004 randomly-selected

Kansas households during the spring of 2001. The KHIS sample was stratified according to region of the state as well as by county income and racial characteristics. By design, each region was divided into eight or fewer groups (strata) using three key population characteristics that are associated with health insurance status: the percentage of families with incomes below \$25,000; the percentage of the population that is Black; and the percentage of the population that is Hispanic. Strata with concentrations of Black, Hispanic, and/or low-income people that exceeded the statewide median values were over-sampled in order to better describe the population of uninsured Kansans. Survey subjects selected from over-sampled strata were given smaller sampling weights so that the resulting (weighted) sample population was statistically representative of the Kansas population as a whole. The sampling weights were calculated by BEBR and are included in the public use data set. Standard errors reported and/or used in this report are adjusted for the complex sampling design of the KHIS using the Taylor series approximation method included in the SUDAAN statistical software package, version 8.0. All children under age 19, regardless of insurance status, are included in the statistical analysis, including siblings. Household-level clusters are specified in the analysis to account for potential correlations between siblings.

5. FINDINGS

Factors Associated with Children's Insurance Coverage

Of the approximately 755,000 children under the age of 19 in Kansas,¹¹ about 7.8 percent are uninsured, while 77 percent are privately insured and 15.3 percent are publicly insured through Medicaid or HealthWave (primarily), Medicare, or through military-related coverage [see Figure 1]. Table 1 summarizes the insurance status of Kansas children according to individual and family characteristics. Chi-square tests of significance indicate that of all the characteristics included in Table 1, only gender does not have a statistically significant bi-variate relationship with insurance status. Note in particular that various socioeconomic and labor market variables, including income, parental age, parental education, wages, work status, and employer size all increase with rates of insurance and private coverage and decrease with rates of public coverage. But descriptive results such as these beg the question of which child or family characteristics are driving the insurance coverage choices that parents make on behalf of their children. Previous results in the insurance coverage literature suggest that labor market and insurance decisions are made jointly (that wages may substitute for benefits and vice versa), that job characteristics and benefits are selected as a package, and that families substitute one spouse's coverage options for another's.¹²



Note: all children with non-missing data are included (n=7,490).

Kansas Health Institute, 2002

The importance of health insurance benefits in labor market decisions stems from the potential significance of coverage to the family, favorable tax treatments and group rates that make employer-sponsored coverage cheaper than individually-purchased policies, and the firm's incentive to structure benefits to attract workers while keeping total compensation to a minimum. Health insurance certainly can be an important component of an employee's benefit package. Note that in 1996 health insurance comprised 7.1 percent of total compensation.¹³ Family structure, worker characteristics, and health needs are likely to affect the potential costs of health insurance to the family. For example, married partners may take into account the health benefits available to their working spouse when selecting employers that favor either high wages or generous benefits.¹⁴ Families with high expected health costs may choose to sacrifice wages (i.e., income) in order to obtain employer-sponsored insurance. All of this suggests that the simple bi-variate relationships expressed in Table 1 may not adequately explain *why* children are uninsured.

Table 2 illustrates the inter-relationships among nine socioeconomic factors identified in Table 1 as having a significant association with children's health insurance status. For each possible pair of factors, Table 1 reports the Pearson correlation statistic as a measure of the co-variation between the row and column variable. Also reported is the level of statistical significance of each bi-variate relationship.¹⁵ Of the 45 possible relationships between pairs of these socioeconomic variables, only seven are *not* significant at the .05 level. Hence, nearly all of the factors included in the analysis that are associated with insurance coverage are also associated with each other.

Multi-variate Analysis of Insurance Coverage

The results presented in Table 2 are consistent with the notion that families' insurance and labor market decisions are made in tandem. From an analytic standpoint, this complicates matters greatly. Teasing out causal relationships between the family's labor market and insurance decisions would, for starters, require data not available in the KHIS, e.g., longitudinal data that include high-quality information on total premiums and employee contributions. Nevertheless, some factors associated with insurance coverage might reasonably be considered to be

independent of the family's current insurance decision, e.g., the child's age, gender, health status, race and ethnicity, as well as the family's structure, parental education, and where the family lives. In other words, some child and family characteristics can be considered to have been determined either before or apart from the family's insurance coverage decisions, therefore suggesting that these characteristics, at least, could not be caused by the family's insurance status and may, in fact, contribute to it. To identify these potentially causal factors in the family's insurance decision, we model the insurance decision of families according to these predetermined, or independent, child and family characteristics. By design, the models include a limited number of explanatory variables due to the relatively small sample size of about 500 children, depending on model specification.

Results of the multi-variate logistic analysis are summarized in Models I-V of Table 3. Model I includes all children and regresses a set of pre-determined child and family characteristics on a dummy variable indicating whether the child is insured. The results indicate that after controlling for a variety of other characteristics, older children and Hispanic children are less likely to have insurance, while children in very good or excellent health and children with better-educated families are more likely to be insured.

The bi-variate results presented above in Table 1 indicate that rates of uninsurance vary across regions of the state. Model II tests whether differences in rates of coverage differ between specific regions of the state after controlling for other characteristics such as race and income. Model II differs from Model I only in that regional identifiers have been substituted in place of the urban/rural dummy variable. The reference group is Region 1, which includes Leavenworth and Wyandotte counties. Results indicate that after controlling for other factors, only in one of the other nine regions in the state, Region 4 (Outlying Northeast), did children have a statistically significantly higher probability of being insured than children in Leavenworth and Wyandotte counties, and in no region did a child have a significantly lower probability of being insured. Because of the lack of differences at the individual regional level, and to keep the number of

variables to a minimum, the remaining models revert to the use of a dummy variable for urban/rural residence instead of the regional identifiers used in Model II. Since so many uninsured children appear to be eligible for public health insurance (see further discussion below), it is useful to model insurance decisions solely among families whose children appear to be eligible for public health insurance (PHI) through either Medicaid or HealthWave. Model III examines insurance coverage (public or private) for children who live in families below 200 percent of the FPL and are thus income-eligible for PHI in Kansas.¹⁶ Results in Table 1 indicate that rates of uninsurance are particularly high in this income range. The only significant result in Model III is that older children are less likely to be covered. It is possible that certain characteristics operate differently on the likelihood of obtaining public versus private coverage. For example, as socioeconomic status (e.g., education, or earnings potential) rises, families may be more likely to have access to and be able to afford private insurance. On the other hand, higher socioeconomic status also might be associated with an elevated aversion to participation in public health insurance. Indeed, there may be differences in the effects of various characteristics on public and private insurance coverage among the low-income population.¹⁷ As an initial indication of these potential differences, we model participation in public and private insurance separately for this population (Models IV and V), although this is not meant to imply that the decisions are made separately: quite the opposite is assumed. This analysis of low-income PHI eligibles characterizes their insurance status in three different ways: insured or not (Model III, summarized above); publicly insured or not (Model IV); and privately insured or not (Model V). The three separate models are presented here to provide a preliminary, though not conclusive, indication of the characteristics that may be associated with participation in public and private insurance.¹⁸

Model IV examines participation in public insurance among all low-income children.¹⁹ Females and Blacks in this income range are more likely to be enrolled in public health insurance, while older children, children with more educated parents, and children with two parents in the home are significantly less likely to participate. Model V takes the same group of low-income children (who are eligible for public health insurance) and models private insurance coverage, yielding

results that are nearly the opposite of the public insurance model (IV). Older children, children in better health, children with more highly-educated parents, and children with two parents in the home are more likely to be privately insured, while Blacks are significantly less likely to be privately insured.

In general, the multi-variate regression analysis of insurance status indicates that Kansas children are affected by the same sorts of underlying characteristics as are children in the nation as a whole: age, gender, race and ethnicity, education, family structure, and potentially urban/rural residence, can all have an independent impact on the insurance status of a child. It is important to note that results indicating the statistical significance of race as an independent predictor of insurance status are at least potentially spurious in that race in these simple regression models could be picking up unmeasured socioeconomic status (e.g., wealth) or earnings potential. Nevertheless, comparison of these results to those found in previous studies indicates that the findings on race and ethnicity are robust to data and model specification.

Identifying Concentrations of Uninsured Children

While the analysis above helps to describe the potential causes of uninsurance, it does not provide a sense of the contribution of each cause or characteristic to the overall level of uninsurance. To better understand how important these potentially causal factors might be to policymakers, it is helpful to know how many uninsured children are affected by key characteristics. Table 4 apportions uninsured children according to some of the characteristics identified in the explanatory analysis above, and it organizes these results using two primary policy variables: whether the child appears to be eligible for PHI through Medicaid or HealthWave, e.g., their family's income is less than 200 percent of the FPL, and whether the child has access to ESHI through a parent.²⁰

Some of the results in Table 4 are useful in identifying potential target populations for coverage-enhancing policies, but the targeting mechanisms are not obvious. For example, results presented in Table 3 above indicate that children with less educated parents are more likely to be

uninsured, and results in Table 4 indicate that these children also comprise a significant percentage of uninsured children in the state. All else being equal, these factors suggest that parental educational status might be a useful characteristic for policy interventions aimed at uninsured children. Nevertheless, it is not immediately obvious how parental educational status could practically be used to identify uninsured children, nor how policies might be designed to cover the children of parents with lower levels of education. Similarly, while Table 4 confirms the importance of family structure (i.e., 2-parent families v. 0- or 1-parent families) in explaining the insurance status of children in the state, it is not clear how such a finding could be used directly in the development of policies intended to increase coverage.

Another characteristic that is independently related to insurance coverage status, Hispanic ethnicity, also affects a sizable minority of uninsured children in the state—about 30 percent. As noted above, previous studies also have shown high rates of uninsurance among Hispanics, suggesting the potential value in targeting this group of children. Anecdotal evidence also suggests the potential value of additional, culturally appropriate outreach directed at the state’s Hispanic population to more effectively market Medicaid and HealthWave coverage. Two important considerations related to uninsured Hispanic children in the state are not addressed in this analysis. First, this study does not assess the ease with which Hispanic children could be identified and contacted with information regarding insurance solutions. Second, the survey data analyzed in this study did not include information on citizenship and immigration status, potentially limiting the applicability of the principle intervention discussed in this report—participation in the existing HealthWave and Medicaid programs.²¹ Nevertheless, the results of this study suggest that Hispanic children will be an important component of any policy designed to substantially increase coverage among children in Kansas, and additional research supporting a more precise assessment of this population may be warranted.

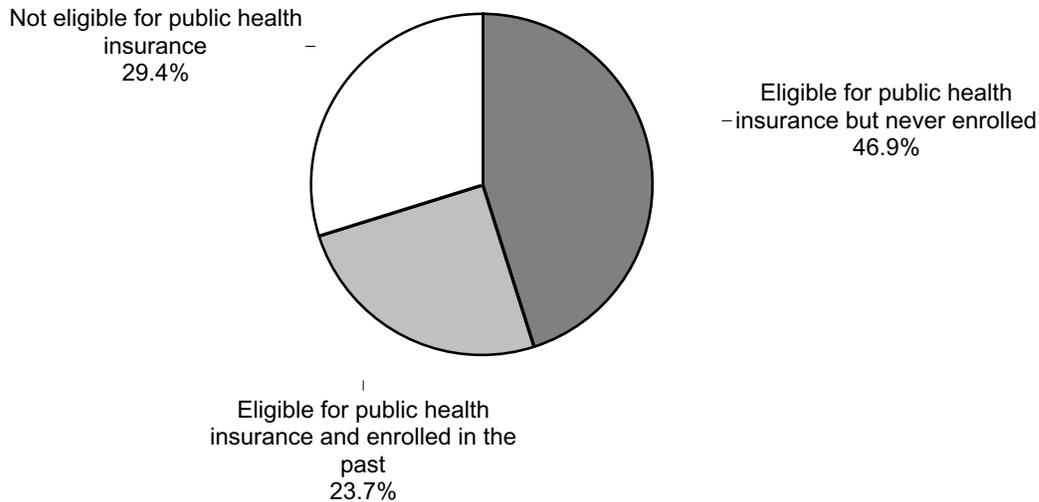
Other findings also suggest potential policy solutions. Both the explanatory analysis summarized in Table 3 above and the sub-group analysis of uninsured children presented in Table 4 suggest the potential importance of age in the design of policies intended to increase access to insurance.

Results in Table 3 indicate that older children are less likely to be insured, in part because they are less likely to participate in public health insurance. The sub-group analysis of uninsured children in Table 4 suggests that about three-quarters of uninsured children are school-aged (ages 5 or above). Thus, age is identified as having a significant impact on the probability of being insured, and schools are identified as a potentially powerful mechanism for targeting older children: all but the youngest children attend school, and a child's grade level in school can be used as a proxy for their age.

Lack of Participation in Public Health Insurance Programs

The results in Table 4 also indicate that the vast majority of uninsured children in Kansas—71 percent—are income-eligible for public health insurance (PHI) through either Medicaid or HealthWave. This compares to recent national estimates that 57 percent of uninsured children are eligible for Medicaid or SCHIP.²² Table 4 also indicates that 56 percent of uninsured children in Kansas are both eligible for PHI and *ineligible* for ESHI. These results suggest the central role that increased participation in public insurance could play in raising overall levels of insurance coverage among children. Note also that about two-thirds of low-income uninsured children who are eligible for PHI have never been enrolled, and that never-enrolled PHI-eligibles comprise nearly half (47 percent) of all uninsured children in Kansas [See Figure 2].²³ This suggests that non-participation in public health insurance is more an issue of a lack of enrollment than a potential issue of premature disenrollment, although the latter is certainly a concern for the children involved.²⁴

Figure 2
Distribution of Uninsured Children in Kansas
by Eligibility and Enrollment in Public Health Insurance



Note: all uninsured kids with non-missing data are included (n=451).

Kansas Health Institute, 2002

As noted above, factors associated with an increased risk of being uninsured are especially useful in terms of policy design if the groups of children they represent are easily targeted. Children eligible for PHI by virtue of their family's income could conceivably be targeted if they or their family happened to participate in other income-related public assistance programs. One national study found that 60 percent of all uninsured children nationally and 72 percent of children living below the income eligibility threshold used by Kansas participate in at least one or more of the following public means-tested programs: the National School Lunch Program, Women Infants and Children, Food Stamps, and unemployment compensation.²⁵ The National School Lunch Program alone would reach 48 percent of all uninsured children and 60 percent of low-income uninsured children.²⁶ Several states have attempted to use the School Lunch program to reach out to children eligible for, but not enrolled in, public health insurance. Efforts to coordinate in this fashion appear to have obtained mixed results.²⁷ Coordination of public programs is difficult, potentially expensive, and can lead to unintended consequences. SRS, for example, has faced

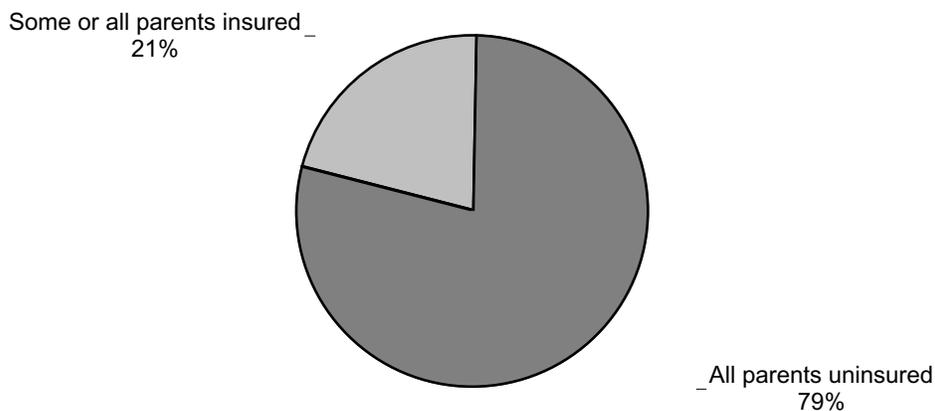
numerous problems in its attempt to jointly administer enrollments in the Medicaid, HealthWave, Food Stamps, and Temporary Assistance to Needy Families programs.²⁸ Nevertheless, advocates appear to be optimistic about the potential for maximizing enrollment in PHI among School Lunch participants.²⁹

Additional analysis indicates that most of the children eligible for public health insurance are eligible for Medicaid, and not HealthWave. Medicaid-eligible children were found to comprise about 42 percent of all uninsured children in Kansas, which nearly equals one national estimate for 1996.³⁰ Medicaid-eligible families may consider enrollment in advance of a medical need to be optional. Advance enrollment may be viewed as an option because individuals who meet the eligibility criteria for Medicaid are effectively covered by Medicaid, *whether or not they are actually enrolled*, if they subsequently enroll within about three months. Families can wait up to three months after incurring medical expenses to apply for Medicaid coverage for those expenses.³¹ Anecdotally, SRS caseworkers report that clients are generally aware of Medicaid's retroactive coverage policy. Such implicit, or passive, coverage may undermine an eligible family's motivation to enroll in public or private health insurance since it provides protection against future financial losses associated with health care and may in some cases, e.g., hospitalizations, provide initial access to services.³² To those who are Medicaid-eligible, but not enrolled, the value of signing up for public health insurance in advance of an illness (e.g., preventing financial hardship and increasing access to preventive services) may not be enough to offset the perceived costs (e.g., the stigma of public coverage and the time and effort associated with applying).³³

States can take a number of steps to try to increase participation rates among uninsured children eligible for Medicaid, such as simplifying the enrollment and re-enrollment processes and increasing access to providers.³⁴ Another policy that has been suggested as a means of increasing children's participation in Medicaid and SCHIP is to extend coverage to the uninsured parents of non-participating children.³⁵ It is certainly the case that families tend to be insured or uninsured as a unit. Disparate insurance status within the family affects only one in five uninsured children

in Kansas [see Figure 3]. National studies also indicate that most uninsured children have uninsured parents, and most uninsured parents have uninsured children.³⁶ In addition, siblings tend to be insured or uninsured as a group (85 percent of uninsured children in Kansas). These findings raise the question of whether children’s participation in public programs would increase if eligibility for public programs were extended to parents, i.e., whether such expansions would draw in whole families.

Figure 3
Distribution of Uninsured Children in Kansas
by Parental Coverage Status



Note: all uninsured children with non-missing data are included (n=484).

Kansas Health Institute, 2002

How Long do Children Remain Uninsured?

One measure of the level of need for new policies that increase insurance coverage among children in Kansas is the length of time that children remain uninsured. Data from the KHIS and related national studies provide important insights into the dynamics of insurance coverage among children. At first glance, the KHIS data seem to suggest that uninsurance among children is mainly a long-term problem: nearly 60 percent of the children who were uninsured at the time of the survey had been so for more than one year. Note, however, that this implies that 40

percent of uninsured children have only been uninsured for a relatively short time (one year or less). If it were always the case that 40 percent of the uninsured were short-term, then over time there would be a fairly large and continuous flow of children through the ranks of the short-term uninsured. Analysis based on just this type of assumption suggests that more than three-quarters of children who become uninsured³⁷ remain so for less than a year, and two-thirds remain uninsured for less than six months.³⁸ This level of turnover among the uninsured implies that in the long run, most participants in a program designed to cover uninsured children would need the program for less than a year in order to bridge an insurance coverage gap, and as many as half would need to participate for less than six months.

Policymakers may wish to evaluate the efficiency with which a policy designed to increase coverage targets those most in need. For example, in recognition of the inherent fluidity of children's insurance status, policymakers may want to consider whether the timeframe for an insurance program matches the timeframe of need for uninsured children. Does the intervention tend to provide help for a longer period of time than the typical child would otherwise have remained uninsured? The analysis above suggests that most of the children who become uninsured remain so for no longer than about 6 months, yet public coverage, for separate and important reasons, is provided for one year at a time in Kansas.³⁹ Rather than shortening the length of coverage provided in a new (or expanded) program, would it be possible to focus the intervention on those who would otherwise be uninsured for long periods of time? Focusing new interventions on the long-term uninsured could affect a significant number of children: 35 percent of uninsured children in Kansas (at a point in time) have been so for more than one year, are PHI-eligible, and are ESHI-ineligible. For these children, new insurance programs may not be necessary if their families can be enticed to participate in PHI.

A major impediment to policies designed to help the long-term uninsured is the difficulty in accurately identifying this group. When the HealthWave program was implemented in Kansas, one of the original eligibility requirements was that children who dropped private insurance voluntarily (i.e., by their parents) had to remain uninsured for 6 months prior to enrollment in

HealthWave. This eligibility requirement was abandoned in 2001 based in part on SRS reports that they had rejected few applications due to this requirement. Apart from such screens, it may be difficult to identify those at risk for long spells of uninsurance. Previous research identified few observable differences between children with short v. long spells of uninsurance.⁴⁰ Multi-variate analysis of KHIS data (not shown) provides similarly little insight into the factors associated with long-term spells of uninsurance. Thus, it is not clear how policymakers could accurately aim coverage expansions towards the long-term uninsured, nor is it immediately obvious how the expansion could be designed to match the length of time help is provided to the length of time the family truly needs help.

6. DISCUSSION AND POLICY IMPLICATIONS

This study analyzed data from the 2001 Kansas Health Insurance Survey, providing a general description of uninsured children in the state and identifying at least three groups of uninsured children who might be targeted with efforts to increase insurance coverage rates. Insurance status was found to relate significantly to a wide range of child and family characteristics. Consistent with the national literature, socioeconomic characteristics and parental employment were found to have an especially strong relationship with insurance status. Nonetheless, some of these factors are difficult to use in the design of policies intended to increase children's insurance coverage, and many of them appear to be inter-related. Multi-variate analysis was used to measure the effects of a small number of potentially causal variables that were considered not to be jointly determined with the insurance status of the child. These models suggested that a child's age, gender, race, and ethnicity, as well as the parent's level of education and the family's structure, each have a significant effect on their coverage status. Region of residence was not found to be a statistically significant predictor of insurance coverage independent of these other factors, although the failure to find such a relationship could be the result of the relatively small number of uninsured children included in the study. Were significant regional differences found, though, it is not clear whether region-specific insurance interventions – with the exception of outreach efforts for public health insurance – would be politically or programmatically feasible. It is far more likely that insurance programs like subsidies or public health insurance expansions would target specific demographic groups on a statewide basis.

In addition to its analysis of factors that either cause or are associated with a lack of insurance, this study found three characteristics that policymakers should consider using to identify large groups of uninsured children for coverage-expanding interventions:

- **School-aged children.** The older children are, the more likely they are to be uninsured. School-aged children, in particular, comprise a large percentage of uninsured children. Hence, many uninsured children could potentially be targeted through their schools, with possible emphasis on higher grade levels.

- **Children eligible for public assistance.** Children eligible for HealthWave or Medicaid comprise the vast majority—71 percent—of uninsured children. Many of these uninsured children could conceivably be identified and targeted for intervention through their participation in other government assistance programs, e.g., the National School Lunch Program.
- **Hispanic children.** The report finds that Hispanic children are at increased risk of being uninsured and comprise almost one-third (30%) of all uninsured children in Kansas.

While these characteristics describe the vast majority of uninsured children in Kansas, use of these characteristics to design insurance interventions may be impacted by both practical and political considerations. It remains to be seen, for example, whether remaining uninsured school children can be identified in a manner that is both cost-efficient and that protects the privacy of children and their families. Coordinating across public assistance programs like Medicaid, HealthWave, and the School Lunch program offers promise, but is not necessarily a panacea. Similarly, while it appears that enhanced outreach to Hispanic children could play an important role in increasing rates of insurance coverage in Kansas, prospects for successfully recruiting a higher proportion of eligible Hispanic children into Medicaid and HealthWave are unknown.

This report finds that the largest number of uninsured children could be helped through increased participation in existing public health insurance programs. Publication of this report, however, comes at a precarious time for low-income and uninsured children in Kansas. Increasing participation in Medicaid and HealthWave would require additional resources, but the state is currently experiencing a very large budget deficit. In order to save money, the state recently increased premiums for the HealthWave program, which SRS originally predicted would result in 2,950 children dropping out of the program.⁴¹ Continuing budget deficits raise the possibility of further reductions in Medicaid and HealthWave services. Nevertheless, the insights gained from this study are expected to be relevant long after the state's economic outlook improves, and the options for expanding coverage discussed herein will be available to policymakers when discussions once again turn to the question of how to allocate increasing revenues.

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Table 1
Characteristics of Kansas Children by Insurance Status

N=all children with non-missing data (<=7,490)

	Percentage of all children	Insurance Status		
		Uninsured	Privately Insured	Publicly Insured
Total (95% confidence interval)	100%	7.8% (6.7%-8.8%)	77.0% (75.3%-78.6%)	15.3% (13.8%-16.7%)
Age*				
0-4 years	26%	6.6%	72.2%	21.3%
5-12 years	41%	7.6%	76.6%	15.8%
13-18 years	32%	8.7%	81.5%	9.8%
Race/Ethnicity*				
White, non-Hispanic	76%	5.5%	82.6%	11.9%
Black, non-Hispanic	7%	8.7%	49.4%	41.8%
Hispanic	11%	20.7%	56.3%	23.0%
Other	6%	N/A	77.0%	14.0%
Health Status*				
Very Good or Excellent	80%	6.2%	81.5%	12.4%
Poor, Fair, or Good	20%	13.9%	59.4%	26.7%
Gender				
Male	52%	8.0%	77.4%	14.6%
Female	48%	7.5%	76.5%	16.1%
Family Type*				
0 or 1 parent	26%	11.2%	61.0%	27.7%
2 parents	74%	6.5%	82.6%	10.9%
Population Density*				
Frontier	3%	7.7%	76.5%	15.8%
Rural	11%	5.8%	78.8%	15.6%
Densely-Settled Rural	23%	8.7%	75.7%	15.6%
SemiUrban	12%	6.8%	68.4%	24.8%
Urban	51%	8.0%	79.3%	12.8%
Region*				
Leavenworth/Wyandotte counties (1)	9%	13.7%	59.3%	27.0%
Johnson county (2)	17%	5.0%	89.6%	5.3%
Shawnee/Douglas counties (3)	9%	6.3%	77.6%	16.1%
Outlying Northeast (4)	7%	N/A	84.3%	13.1%
Southeast (5)	10%	9.8%	72.4%	17.7%
Sedgwick (6)	18%	8.1%	78.3%	13.6%
S. Central excl. Sedgwick (7)	11%	7.7%	77.1%	15.2%
North Central (8)	7%	7.0%	68.8%	24.3%
Northwest (9)	4%	N/A	78.8%	16.4%
Southwest (10)	9%	11.9%	70.7%	17.4%

Table 1 (continued)
Characteristics of Kansas Children by Insurance Status

N=all children with non-missing data (<=7,490)

	Percentage of all children	Insurance Status		
		Uninsured	Privately Insured	Publicly Insured
Total (95% confidence interval)	100%	7.8% (6.7%-8.8%)	77.0% (75.3%-78.6%)	15.3% (13.8%-16.7%)
Family Income (%FPL)*				
<100%	12%	17.9%	29.1%	52.9%
100-200%	25%	12.6%	62.7%	24.7%
200-400%	40%	4.7%	90.9%	4.5%
>400%	22%	1.4%	95.3%	3.3%
Father's Age*				
Teens & 20s	12%	8.8%	68.0%	23.2%
30s	42%	7.1%	80.8%	12.2%
40s	37%	4.8%	88.8%	6.4%
50s & over	9%	7.9%	82.3%	9.9%
Mother's Age*				
Teens & 20s	20%	9.3%	60.8%	30.0%
30s	45%	8.0%	78.0%	14.0%
40s	30%	5.1%	88.0%	7.0%
50s & over	5%	7.4%	73.7%	18.9%
Father's Education*				
< High School	8%	25.4%	48.1%	26.5%
High School	28%	7.5%	77.0%	15.5%
Some College	27%	4.9%	84.0%	11.1%
College or more	37%	2.5%	92.6%	4.8%
Mother's Education*				
< High School	8%	23.9%	41.2%	35.0%
High School	28%	10.4%	67.4%	22.3%
Some College	31%	5.7%	79.5%	14.8%
College or more	34%	2.3%	92.3%	5.4%
Highest parental wage per hr.*				
\$0-10	36%	11.8%	58.7%	29.5%
\$10-15	22%	8.7%	77.1%	14.2%
\$15-20	16%	3.9%	90.7%	5.5%
\$20+	26%	2.0%	95.8%	2.2%
Work Status: # FT parents*				
No full-time workers	13%	17.9%	44.3%	37.8%
1 full-time worker	54%	8.3%	76.8%	14.9%
2 full-time workers	32%	2.6%	90.8%	6.6%

Table 1 (continued)
Characteristics of Kansas Children by Insurance Status

N=all children with non-missing data (<=7,490)

	Percentage of all children	Insurance Status		
		Uninsured	Privately Insured	Publicly Insured
Total (95% confidence interval)	100%	7.8% (6.7%-8.8%)	77.0% (75.3%-78.6%)	15.3% (13.8%-16.7%)
Largest Employer in Family*				
<25	18%	13.2%	69.1%	17.7%
25-99	13%	8.1%	77.5%	14.5%
100+	69%	3.4%	86.5%	10.1%
Firm type(s) of working parent(s)*				
Either parent is a public employee	20%	3.1%	82.5%	14.5%
All working parents self-employed	2%	N/A	86.1%	N/A
Private employers only or combination	78%	8.3%	75.9%	15.8%
Child has access to Employer-Sponsored Health Insurance (ESHI)*				
Yes	79%	2.1%	90.3%	7.6%
No	21%	26.5%	30.0%	43.5%

Source: KHI analysis of KHIS data.

*Characteristic is statistically related to insurance status at the p=.01 or greater level of significance (Chi-Square).

N/A Percentages for which the relative standard error is .3 or higher are not reported.

Table 2
Insurance and Demographic Characteristics are Inter-related
 Bi-variate Pearson correlation coefficients

	Father's education	Father's age	Mother's education	Mother's age	Family type	Highest wage	Family income	Work status	Firm size
Father's age	.18**								
Mother's education	.61**	.12**							
Mother's age	.22**	.85**	.19**						
Family type (0/1 or 2 parents)	.03	.04	.13**	0.06*					
Highest wage in family	.27**	.11**	.26**	.13**	.19**				
Family income as poverty level	.45**	.22**	.46**	.24**	.30**	.46**			
Work status (# FT workers)	.02	.02	.17**	.08**	.54**	.14**	.38**		
Firm size (largest in family)	.10**	-.03	.13**	-.01	.09**	.07*	.19**	.17**	
Does child have access to ESHI?	.20**	.02	.27**	.06*	.25**	.19**	.36**	.39**	.44**

Source: KHI analysis of KHIS data.

* Correlation is significant at the .05 level.

** Correlation is significant at the .0001 level.

Table 3
Logistic Models of Children's Health Insurance Status

Population included:	All children		PHI-eligibles	PHI-eligibles	PHI-eligibles
Dependent variable:	Insured?		Insured?	Publicly insured?	Privately insured?
Explanatory variables	I	II	III	IV	V
Child's age in years	.98	.98	.95	.94	1.03
Female?	1.14	1.14	1.11	1.24	.87
Hispanic (default is white/other)	.43	.44	.65	.81	.93
Black, non-Hispanic (default is white/other)	1.10	1.20	1.52	2.40	.50
Very good, or excellent health?	1.55	1.54	1.39	.74	1.56
Region (9 dummies)*	1.02-4.16				
Urban resident?	.88		.67	.91	.88
Highest parental education >HS	2.77	2.70	1.41	.71	1.61
2 parents in family?	1.27	1.27	.76	.59	1.41
N	7163	7163	2274	2274	2274

Source: KHI analysis of KHIS data.

Reported are odds ratios: statistically significant results at the p=.05 or greater level of significance are in bold.

* Significance is reported for regions as a whole. Region 1, Leavenworth and Wyandotte counties, is the reference group. One of nine regions (outlying northeast) had a significantly higher probability of being insured. No regions had a significantly lower probability of being insured.

Table 4
Concentrations of Uninsured Children in Kansas
N=all uninsured children with non-missing data (<=467)

Selected (sub-) groups of uninsured children	(Sub-) group as a percentage of all uninsured children	Standard error
Children in low-income (<200% FPL) families with access to PHI	71.2%	.032
Children with access to ESHI	14.4%	.027
Hispanic	5.2%	.018
Non-hispanic	9.2%	.022
Largest employer in family has >= 25 employees	11.0%	.028
Largest employer in family has < 25 employees	3.7%	.018
Highest parental education is some college	3.9%	.013
Highest parental education is HS or less	10.9%	.025
0-1 parents	2.6%	.009
2 parents	11.8%	.026
Short-term uninsured (less than 1 year)	6.9%	.018
Long-term uninsured	7.5%	.023
Age 0-4	2.9%	.010
Age 5+	11.6%	.023
Has ever had Medicaid	5.3%	.016
Has never had Medicaid	8.2%	.020
Children without access to ESHI	56.1%	.038
Hispanic	15.0%	.025
Non-hispanic	40.9%	.040
Largest employer in family has >= 25 employees	25.8%	.042
Largest employer in family has < 25 employees	27.7%	.044
Highest parental education is some college	26.0%	.037
Highest parental education is HS or less	29.7%	.034
0-1 parents	19.9%	.031
2 parents	36.2%	.039
Short-term uninsured (less than 1 year)	34.9%	.038
Long-term uninsured	21.0%	.031
Age 0-4	14.8%	.023
Age 5+	41.3%	.035
Has ever had Medicaid	19.6%	.030
Has never had Medicaid	36.9%	.037

Table 4 (continued)
Concentrations of Uninsured Children in Kansas

N=all uninsured children with non-missing data (<=467)

Selected (sub-)groups of uninsured children	(Sub-) group as a percentage of all uninsured children	Standard error
Children in higher income (>=200% FPL) families, no access to PHI	28.8%	.032
Children with access to ESHI	10.0%	.019
Hispanic	3.3%	.011
Non-hispanic	9.5%	.019
Largest employer in family has >= 25 employees	12.4%	.025
Largest employer in family has < 25 employees	0.4%	.004
Highest parental education is high	7.6%	.017
Highest parental education is low	2.5%	.009
0-1 parents	2.9%	.011
2 parents	7.1%	.016
Short-term uninsured (less than 1 year)	4.5%	.013
Long-term uninsured	5.4%	.016
Age 0-4	2.1%	.009
Age 5+	7.9%	.017
Has ever had Medicaid	4.8%	.015
Has never had Medicaid	5.6%	.014
Children without access to ESHI	19.4%	.029
Hispanic	0.5%	.003
Non-hispanic	16.5%	.028
Largest employer in family has >= 25 employees	8.1%	.023
Largest employer in family has < 25 employees	10.9%	.026
Highest parental education is high	9.3%	.019
Highest parental education is low	10.3%	.023
0-1 parents	7.1%	.016
2 parents	12.3%	.025
Short-term uninsured (less than 1 year)	10.8%	.023
Long-term uninsured	9.1%	.021
Age 0-4	4.4%	.011
Age 5+	15.1%	.024
Has ever had Medicaid	4.1%	.012
Has never had Medicaid	15.5%	.027

Source: KHI analysis of KHIS data.

8. ENDNOTES

¹ Mills (2002).

² There are a number of differences between the national and state-level estimates. The KHIS rate is based upon children aged 0-18 years, while the national rate is based upon children aged 0-17 years. This difference in age ranges may reduce the difference in coverage rates between Kansas and the rest of the Midwest and the nation, since uninsurance rates among 18-year-olds are generally higher than for other children. Comparing point-in-time to full-year rates of uninsurance may also be problematic. For further discussion of the applicability of national estimates to Kansas, see Allison and St. Peter (2001).

³ See in particular Arrow (1963) and Nyman (1999).

⁴ Weinick and Monheit (1999).

⁵ See Rolett, Parker, Heck, and Makuc (2001). Additional evidence and implications of the effects of spousal coverage may be found in Farber and Levy (2000) and Dranove, Spier, and Baker (2000).

⁶ See Pauly and Herring (2002). This analysis includes adults age 18-64 without public insurance.

⁷ For example, Heck and Parker (2002) found that children with single moms were less likely to have coverage through their mother's employer even *after* controlling for the mother's level of education.

⁸ In a national study of the characteristics associated with children lacking insurance Holl et al (1995) found race, ethnicity, householder education, family composition, to be statistically significant explanators.

⁹ Davidoff, Garrett, Makuc, and Schirmer (2000) also found that non-participants were better educated, richer, were more likely to have two parents in the home, and were more likely to have fully employed parents.

¹⁰ Selden, Banthin, and Cohen (1998).

¹¹ Population estimates from the U.S. Census Bureau.

¹² See Gruber (2000) and Farber and Levy (2000).

¹³ Gruber (2000).

¹⁴ For a given level of total compensation.

¹⁵ For example, a level of significance of <.0001 implies that there is less than a .01 percent chance that the observed co-variation between the two factors is the result of random chance.

¹⁶ Children must also be legal residents of the state in order to be eligible for Medicaid or HealthWave. The KHIS does not contain information on residency, so this criteria could not be taken into account.

¹⁷ See LoSasso and Buchmueller (2002).

¹⁸ LoSasso and Buchmueller (2002) take a similar tack. A more comprehensive approach might analyze the three-way (constrained) choice of insurance status in a single model, as in Davidoff and Garrett's (2001) three-way multinomial logit model of insurance choice among children eligible for Medicaid. However, for models of insurance coverage, a multinomial probit model seems preferable to alternatives such as multinomial logit because it does not require comparisons between two of the insurance alternatives to be independent of the presence of a third. Despite statistical tests to the contrary, it seems implausible that the family's decision to enroll an uninsured child in private health insurance is not affected by the availability of public insurance. This presumption of interdependence of insurance alternatives would appear to rule out the multinomial logit model, but the multinomial probit model is not supported by the SUDAAN software used in this analysis. Hence, we present here a simpler, though preliminary, analysis.

¹⁹ The dependent variable is equal to 1 if publicly insured and 0 if privately insured or uninsured. Children are considered publicly insured if covered through state health insurance programs such as Medicaid and HealthWave, are enrolled in Medicare, or if they have military-related coverage. Since over 90% of children with public insurance in Kansas are covered by HealthWave or Medicaid, the discussion here focuses on these state-sponsored programs.

²⁰ A child is determined to have access to an employer plan if a working parent is either enrolled in or eligible for an employer-sponsored health plan that includes dependent coverage.

²¹ Note also that the KHIS did not ask any questions about citizenship, which may limit the policy-relevance of the findings in this study, especially with regard to options involving participation in public health insurance programs that are limited to citizens and certain categories of legal immigrants.

²² Source: Urban Institute estimates provided to the *Covering Kids* project of the Robert Wood Johnson Foundation. See press release at: <http://www.rwjf.org/newsEvents/mediaRelease.jsp?id=1027535543103>.

²³ The KHIS question that this finding is based on asks only about previous Medicaid enrollment and does not mention HealthWave. However, it is unlikely that inclusion of previous HealthWave enrollment in the KHIS question would have a significant effect on the percentage of the uninsured with previous experience in public health insurance given that: a.) The HealthWave program had only about one-fifth as many children enrolled as the Medicaid program at the time the KHIS was administered; b.) the HealthWave was still quite young at the time the KHIS was administered (less than three full years in operation), implying a limited number of alumni relative to the program's size; and c.) administrative records indicate that three-quarters of HealthWave enrollees have previous experience in Medicaid, and this experience is presumably reflected in the response to the KHIS question.

²⁴ For more discussion of disenrollment from public health insurance in Kansas, see Allison, LaClair, and St. Peter (2001).

²⁵ Kenney, Haley, and Ullman (1999).

²⁶ Families participating in state and federal cash assistance programs are already screened by SRS for potential (and sometimes automatic) eligibility in public health insurance.

²⁷ See Ross (2001) and Papsdorf and Horn (2002).

²⁸ Allison (2002). See also Schott, Dean and Guyer (2001) for a broader discussion on coordinating Medicaid and Food Stamps.

²⁹ Ross (2001).

³⁰ Seldon, Banthin and Cohen (1998).

³¹ Eligibility is assessed using income received in the month that medical services were rendered.

³² Since hospitals often help eligible patients apply for public coverage.

³³ The fact that the implicit coverage policy does not apply to the HealthWave (Title XIX) program may lead to confusion and misperception on the part of eligible, or potentially eligible families, especially since the Medicaid (eligible under Title XIX) and HealthWave (eligible under Title XXI) programs were integrated under the single HealthWave program name. It is not clear what effect the differing coverage policies for Title XIX and Title XXI eligibles will have on parents' decision to enroll their children in advance of health care needs.

³⁴ See, for example, the summary in Mann, Rousseau, Garfield and O Malley (2002).

³⁵ See Lambrew (2001) and Davidoff et al (2001).

³⁶ *Ibid.*

³⁷ Note that a child may become uninsured more than once over the course of time.

³⁸ The analysis uses trial and error to fit a survival function for spells of uninsurance to the point-in-time (and, presumably, steady-state) distribution of uninsurance durations observed in the KHIS, assuming that hazard rates for ending a spell of uninsurance, as well as the number of new spells begun each month, remain constant over time. The survival function was applied to 227 successive monthly cohorts of non-unique uninsured children to generate a hypothetical distribution of uninsured children that in the final month (i.e., the steady state) closely resembles the distribution observed in the cross-sectional KHIS. The resulting survival curve implies rates of turnover that are slightly higher than those estimated in reports by Czajka (1999) and the Congressional Budget Office (2003), each of which examine insurance dynamics using a large national longitudinal data set.

³⁹ For example, Stoddard, St. Peter, and Newachek (1994) show that insurance coverage is important for maintaining access to health care services. Results in Dick, Allison, Haber, Brach, and Shenkman (2002) suggest that shortening the coverage period may have a deleterious effect on program retention.

⁴⁰ Czajka (1999).

⁴¹ Meckler (2002). These estimates were based on a tripling of the original premiums, which were \$10 per family per month for families between 150% and 175% of the federal poverty level, and \$15 per family per month between 175% and 200% of the federal poverty level. This tripling of premiums to \$30/\$45 occurred in February 2003. Premiums were subsequently lowered to \$20/\$30, twice the original amounts, in July 2003.