

The Impacts of Health Insurance Coverage on Access to Healthcare in Children Entering Kindergarten

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Abstract To examine access to healthcare and health outcomes for kindergartners as they relate to insurance status and type. For the 2008, 2009, and 2010 school years, surveys were distributed to parents with a child entering kindergarten in the state of Nevada. Surveys asked parents to provide information about their child concerning their insurance status, routine medical care, medical conditions, and health behaviors. Compared to their insured peers, uninsured kindergartners were less likely to have had a check-up in the previous 12 months ($p < .001$; OR 6.14; 95 % CI 5.77–6.53), have a primary physician ($p < .001$; OR 14.32; 95 % CI 13.49–15.20), or have seen a dentist ($p < .001$; OR 3.93; 95 % CI 3.70–4.16), and were more

likely to have a reported unmet medical need ($p < .001$; OR 2.60; 95 % CI 2.19–3.07). Additionally, compared to children with private insurance, those children with public insurance were less likely to have had a check-up ($p < .001$; OR 1.73; 95 % CI 1.59–1.89), have a primary care provider ($p < .001$; OR 3.87; 95 % CI 3.55–4.21), and were more likely to have unmet medical needs ($p < .001$; OR 2.27; 95 % CI 1.83–2.81). For children in early development—a deeply critical period—insurance status and type are predictors of important access to healthcare variables.

Keywords Insurance coverage · Medicaid · Healthcare disparities · Kindergarten · Child

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Introduction

Approximately six-and-a-half million American children ages 0–18 (8.9 %) lack health insurance [1], and many more do not have continuous coverage [2]. According a report released by the Georgetown University Health Policy Institute Center for Children and Families, in 2009 and 2011, Nevada has the highest rate of uninsured children in the county [3]. These statistics are similar for our youngest children aged 0–5 years old. In 2011, 9 % of young children nationwide were uninsured, and in Nevada, that percent almost doubled at 17 % [4]. These uninsured children face a long list of problems that their insured peers do not. They are more likely to have unmet medical and mental health needs [5], are less likely to receive dental care [6, 7], and are four times more likely to use the emergency departments of hospitals than are privately insured children [8]. Between 1988 and 2005, over 16,000 child deaths in America might have been prevented by the provision of

insurance [9]. This may be because the families of uninsured children often delay seeking care for their children [2] and even when care is sought, it is sometimes denied, which can have serious health consequences [10]. In one study of a group of children who were denied care, 12.2 % became increasingly ill, and 16.3 % eventually had to seek emergency care [10].

When it comes to major barriers to accessing healthcare, the uninsured are not the only children at risk. Many children who might otherwise be uninsured are enrolled in public insurance programs. The two most popular public health care options for children are Medicaid and the State Children's Health Insurance Program (CHIP). Medicaid is currently the number one health insurer in the United States, including both public entities and private insurers [11]. Medicaid covers the health and long-term care for approximately 60 million people, serving 30 % of all of the children in the US, and 56 % of low-income children [11]. CHIP allows those families that make too little money to afford private health insurance but too much money to qualify for Medicaid the opportunity to obtain health insurance for their children [12].

Even these children insured under public options face unique barriers to health care compared. While most (95 %) physicians say that they would accept new patients, nearly a quarter (23.5 %) say they would not take new patients insured under Medicaid [13]. The majority (73.1 %) of primary care providers report that it is either difficult or very difficult to find dental care for Medicaid patients and 64 % report that it is either difficult or very difficult to find dental care for CHIP patients [14]. Kenney and Coyer found that while children with private insurance and children insured by Medicaid or CHIP have similar rates of delayed care, children with public insurance were more likely to have delayed care due to inability to attend appointment during regular office hours, long wait times to see the doctor, or due to lack of transportation are also more likely to experience delayed care than their privately insured peers [15].

The Importance of Early Childhood and Health

The research concerning insurance status discussed above has tended to report on children within a broad range of ages, typically birth to 18, rather than focus on any particular age or stage of the developmental process. Although a small number of studies on oral health do specify a narrower population [6], as far as we are aware, no studies have particularly examined the effects of insurance status and type on overall health access for children in early development. There is, however, reason to believe that such analyses would be useful.

The general importance of the first several years of life is well-documented. This is a time when children's cognitive, emotional and social capacities are developing [16], and when health factors are particularly important. Research suggests that health in those early years is a powerful predictor of health in later life: interventions on early childhood health and nutrition have had an effect on longer-term health outcomes [17, 18]; significant weight gain before 5 years of age has been associated with the onset of diabetes as an adult [19]; and childhood health conditions have been associated with cancer, lung conditions, and cardiovascular conditions at age 55–65 [20]. Additionally, academic life begins in early childhood, and research links levels of academic achievement to obesity [21], chronic health conditions [22], physical activity, and nutrition [23].

The Impact of the Economic Recession (2007–2010)

Furthermore, the United States in general—and Nevada in particular—underwent a dramatic economic struggle from 2007 to 2010. The national unemployment rate rose from 5.0 %, at the end of 2007, to 9.6 % in September of 2010 [24]. The unemployment rate in Nevada fared substantially worse and rose from 5.0 to 15.1 % in the same period [25]. Given the increase in unemployment, the rate of private medical insurance provided through an employer, employee sponsored insurance (ESI), declined and there was an increase in Medicaid and CHIP coverage [26]. Expansions in public insurance through the Affordable Care Act assisted in coverage of nonelderly adults who were unemployed and increased coverage for children [26]. While recessions have coincided with moderate decreases in overall mortality in rich countries in the past [27], a large body of research connects unemployment to various health variables on the individual adult level: stress and unhealthy lifestyle choices [28], increases in bodyweight [29], mental health problems [30], and drinking behavior [31]. Parental unemployment may also put the health of children at risk [32]. Moreover, economic shortages affect the healthcare system itself. Safety net programs have demonstrated decreased finances and increased demand for services [33] and healthcare spending overall has slowed to historic lows [34].

Present Study

Changes in health care reform that will be implemented in 2014 will drastically increase the number of children and adults that have health insurance and many will be covered through expansions in public insurance programs. Therefore it is critical to determine if young children who have public insurance are able to access healthcare, and access is an

improvement from those who are uninsured. The purpose of the present study is to examine the state of insurance status, and healthcare access and utilization for children entering kindergarten in Nevada between 2008 and 2010. It is hypothesized that access to healthcare will improve for (1) children with insurance compared to children without insurance, (2) children with private insurance compared to children with public insurance, and (3) children with public insurance compared to uninsured children. Although some national datasets (e.g., The National Survey of Children's Health) [35] provide similar information, there has been no research found that has focused on these variables for young children (approximately 5 years old) as they enter the educational system, despite the developmental importance of this age group. The present data was collected in a time of unique economic misfortune in a state strongly affected by the economic downturn and focus on children during the critical phase of early childhood.

Methods

Procedure

During the first month of the 2008, 2009, and 2010 school years, surveys were distributed to parents who had a child or children entering kindergarten in the state of Nevada by their child's kindergarten teacher, totaling approximately 90,000 surveys. Surveys were distributed in all 17 school districts in Nevada. In order to reduce burden on school staff, the most populous district—Clark County, which includes Las Vegas—requested that only a sample of their schools be included in 2009 and 2010. In each of these years, 60 % of the schools that had enrolled kindergarteners were sampled. To ensure that the samples were representative of the community at large, schools were clustered based on their Title I status. Based on the percent of Title 1 and non-Title 1 schools in the district, random samples of each were selected to receive surveys. In all other counties, all parents with a child in kindergarten received a survey. Parents who chose to participate could return the completed survey to the school office, their child's teacher, or mail the survey to the research team. Each year, this study was reviewed and approved by both the University of Nevada Las Vegas Institutional Review Board and by the Clark County School District Institutional Review Board.

Measures

Kindergarten Health Survey (KHS)

The Kindergarten Health Survey (KHS) was created in collaboration with a number of stakeholders including the

local school district and local and state health authorities to capture a range of data regarding the health status of children entering kindergarten. The research team consulted with several community organizations involved in issues related to early childhood such as the Early Childhood Comprehensive Systems team, Childcare Health Consults project staff, and the Nevada Association of the Education of Young Children to select questions and topic areas for the survey. The specific language of the questions was developed by examining similar questions on existing validated surveys (e.g., Youth Risk Behavior Survey) and revising them to fit the particular needs of the local community.

The KHS, a self-report survey completed by parents, contains 22 questions regarding demographic information, insurance status, routine medical care, medical conditions, immunizations, mental health problems, and health behaviors. The parent or guardian is asked to answer survey questions about their child that is entering kindergarten. Given Nevada's large Spanish-speaking population the final survey was translated into Spanish and then back translated by two different individuals to ensure accuracy. Please refer to "[Appendix](#)" to view the complete survey.

Key Variables

In addition to general demographic questions, seven of the 22 questions on the KHS were of particular interest for the present study. First was the current status of child's insurance coverage. This was measured, by having the respondent indicate if the child was insured (yes or no) and then if yes, the type of insurance coverage (Private, Medicaid, Nevada Check Up, or Other). Other items included if their child had been seen by a medical provider for a routine check-up in the previous 12 months (yes/no), if their child had a primary care provider (yes/no), if their child had seen a dentist in the previous 12 months (yes/no), if they thought their child may have a medical problem for which he or she had not seen a doctor (yes/no), if they had encountered any barriers in accessing healthcare for their child (yes/no), and finally, how often they were able to follow their child's doctor's recommendations (all of the time, most of the time, some of the time, or never).

Data Analysis

Three types of analyses were conducted to examine relationships of insurance status/type in regard to both demographic information and healthcare access and utilization. First, we examined the associations between a child's insurance status and that child's race/ethnicity, annual household income, and location (urban versus rural) using χ^2 tests. Second, a 2×2 contingency table was constructed

to evaluate how coverage by medical insurance (insured or uninsured) or type of insurance (public or private) was related to each of the selected health survey items. Preliminary analyses indicated that the assumptions of a χ^2 test were not violated. Specifically, each respondent contributed to only one cell of the contingency table. Furthermore, there was no cell in the contingency table whose expected frequency was below 5. Odds ratio (OR) and 95 % confidence interval (CI) were calculated for each of these contingency tables to assess the strength of association between coverage by medical insurance or type of insurance and the selected health survey items. In addition, a multiple logistic regression analysis was performed to examine the differences in each of the health access survey items (=dependent variables) by coverage/type of insurance (=independent variables), while using race/ethnicity, family income, and geographic location as another set of predictors (=covariates). All cases in our data set were unrelated, since each respondent provided only one answer to each question (i.e., independence of errors). In addition, there were no correlation coefficients above 3.0 between any pairs of independent variables shown by the point-biserial correlation analysis and the Spearman rank-order correlation analysis. Therefore, the assumptions of a logistic regression analysis were not violated. Last, in relation to coverage of medical insurance and type of insurance, we examined frequencies concerning barriers to accessing health care in addition to how well people followed a doctor's recommendations for medications and/or follow up visits.

With respect to missing data, univariate analyses showed that none of the variables examined in this study had missing values that were greater than 5 % of the data except annual household income. Based on the results of missing value analyses, there appeared to be no systematic patterns of missing values between the selected health survey items and any independent variables, including annual household income. Therefore, listwise deletion was utilized to handle missing values when performing the statistical analyses above. IBM SPSS Statistics (Version 20) was used for the data analysis, and all statistical tests were performed using the alpha level of .05.

Results

Participants

Over the three-year period, all 17 school districts submitted completed surveys for a total of 31,133 completed surveys. Of the 31,133 cases, only those who provided insurance status (insured or uninsured) were included in our data analysis (N = 30,924). The racial/ethnic background of the children included 41.3 % Caucasian, 34.1 % Hispanic,

Table 1 Characteristics of children and family by insurance coverage

Characteristic	n	Covered by medical insurance (%)		p value*
		Yes	No	
Child's race/ethnicity	29,054			<.001
Caucasian		89.58	10.42	
Hispanic		71.35	28.65	
African American		87.08	12.92	
Asian/Pacific Islander		85.64	14.36	
Multiple categories		86.79	13.21	
Other		85.64	14.36	
Annual household income	27,259			<.001
\$0–\$14,999		72.00	28.00	
\$15,000–\$24,000		70.18	29.82	
\$25,000–\$34,999		76.83	23.17	
\$35,000–\$44,999		80.57	19.43	
\$45,000–\$54,999		86.75	13.25	
\$55,000–\$64,999		90.71	9.29	
\$65,000+		96.49	3.51	
Geographic location	30,924			.018
Urban		82.25	17.75	
Rural		83.56	16.44	

Values are given as percentage

* χ^2 test

6.2 % Asian/Pacific Islander, 5.7 % African American, 1.4 % Native American/Alaska Native, 0.6 % Other, and 10.7 % were bi- or multi-racial (indicated by selected multiple categories). The gender of the children included in the study was split equally between males and females.

In the study population, almost all of the families who had an annual household income of \$65,000 or above were covered by medical insurance (96.49 %), whereas the percent of uninsured children increased as annual household income decreased ($\chi^2 = 2,191.95$; $p < .001$; Table 1). In addition, a child's race/ethnicity was significantly associated with whether or not kindergartners were covered by medical insurance ($\chi^2 = 1,393.52$; $p < .001$). Despite accounting for just over a third (34.1 %) of the total population, the largest percentage of children without medical insurance were Hispanic (56.2 %). Furthermore, it appeared that children living in rural areas were slightly more likely to be covered by medical insurance than those living in urban areas (83.56 % vs. 82.25 %; $\chi^2 = 5.64$; $p = .018$).

Insured Versus Uninsured Kindergartners and Health Care Utilization

The relationships between medical insurance coverage and the selected health survey items are presented in Table 2.

Table 2 Proportions of responses to health access survey items by insurance status and type

Selected health survey items	Covered by medical insurance (%)		<i>p</i> value*	Type of insurance (%)		<i>p</i> value*	Publicly insured vs. uninsured (%)		<i>p</i> value*
	Yes	No		Private	Public		Public	Uninsured	
Routine check-up in the past 12 months									
Yes	73.6	10.0	<.001	61.3	27.8	<.001	48.3	24.9	<.001
No	9.0	7.4		6.1	4.8		8.2	18.6	
Primary care provider									
Yes	73.8	6.5	<.001	63.0	26.5	<.001	45.0	16.2	<.001
No	8.8	11.0		4.6	5.8		11.3	27.5	
Dentist visit in the past 12 months									
Yes	62.1	7.6	<.001	51.2	24.6	.215	42.7	18.9	<.001
No	20.5	9.8		16.3	8.0		13.8	24.6	
Suspected medical problem not seen by doctor									
Yes	1.2	0.6	<.001	0.7	0.8	<.001	1.3	1.6	<.001
No	81.4	16.7		66.8	31.8		55.2	41.8	

Values are given as percentage

* χ^2 test

Having had a routine check-up in the past 12 months was significantly related to whether or not a child was covered by medical insurance. Specifically, kindergartners who were not seen by a medical provider for a routine check-up in the past 12 months were more likely to be uninsured than were children who received a routine check-up ($\chi^2 = 3,276.02$; $p < .001$; OR 6.14; 95 % CI 5.77–6.53). Similarly, kindergartners without medical insurance were significantly less likely to have a primary care provider than children with medical insurance ($\chi^2 = 7,627.60$; $p < .001$; OR 14.32; 95 % CI 13.49–15.20). In addition, kindergartners who were not seen by a dentist in the past 12 months were significantly less likely to be covered by medical insurance ($\chi^2 = 2,096.44$; $p < .001$; OR 3.93; 95 % CI 3.70–4.16) compared to students who had been seen by a dentist. Furthermore, the parents of uninsured children were more likely to report that their children had unmet medical needs ($\chi^2 = 122.42$; $p < .001$; OR 2.60; 95 % CI 2.19–3.07).

The logistic regression analysis revealed that medical insurance coverage was significantly associated with each of the four health survey items, even after adjusting for race/ethnicity, family income, and geographic location (for all models: $\chi^2 = 190.16$ – $7,075.76$; $p < .001$). Table 3 shows the results of the logistic regression analysis. It was noteworthy that children who did not have a primary care provider were almost 10 times (OR 9.99; 95 % CI 9.21–10.84) more likely to be uninsured than insured. In addition, children without having a routine check-up in the past 12 months (OR 4.74; 95 % CI 4.38–5.13), without seen by a dentist in the past 12 months (OR 3.27; 95 %

CI 3.05–3.51), and with unmet medical needs (OR 1.97; 95 % CI 1.61–2.41) were more likely to not have insurance. Follow-up analyses based on the covariates above showed that these results were consistent among different categories of race/ethnicity, family income, or geographic location.

Public Versus Privately Insured Kindergartners and Health Care Utilization

The analysis also revealed that type of insurance—private or public insurance—was significantly associated with some of the selected health survey items (Table 2). Insured children who did not have a routine check-up in the past 12 months were more likely to be covered by public insurance than covered by private insurance ($\chi^2 = 149.31$; $p < .001$; OR 1.73; 95 % CI 1.59–1.89). Children covered by public insurance were less likely to have a primary care provider than children covered by private insurance ($\chi^2 = 969.19$; $p < .001$; OR 3.87; 95 % CI 3.55–4.21). Additionally, children whose parents reported that they might have an unmet medical need were more likely to be covered by public insurance ($\chi^2 = 54.62$; $p < .001$; OR 2.27; 95 % CI 1.83–2.81), whereas the association between type of insurance and dentist visit in the past 12 months was not significant ($\chi^2 = .36$; $p > .05$; OR 1.03; 95 % CI 0.96–1.10).

According to the logistic regression analysis, there was a significant association between type of insurance (private vs. public) and each of the four health survey items with race/ethnicity, family income, and geographic location

Table 3 Logistic regression analysis of insurance status and type of insurance on health access survey items

Selected health survey items	Covered by medical insurance (yes* vs. no)		Type of insurance (private* vs. public)		Publicly insured* vs. uninsured	
	Wald χ^2	OR (95 % CI)	Wald χ^2	OR (95 % CI)	Wald χ^2	OR (95 % CI)
Routine check-up in the past 12 months (yes* vs. no)	1,490.37 ^a	4.74 (4.38–5.13)	4.09 ^b	0.87 (0.76–0.99)	926.60 ^a	4.88 (4.40–5.40)
Primary care provider (yes* vs. no)	3,090.31 ^a	9.99 (9.21–10.84)	8.51 ^b	1.22 (1.07–1.39)	1,805.11 ^a	9.02 (8.15–9.99)
Dentist visit in the past 12 months (yes* vs. no)	1,067.15 ^a	3.27 (3.05–3.51)	96.55 ^a	0.60 (0.54–0.67)	1,021.30 ^a	4.33 (3.96–4.74)
Suspected medical problem not seen by doctor (yes vs. no*)	42.76 ^a	1.97 (1.61–2.41)	4.96 ^b	1.48 (1.05–2.09)	4.96 ^b	1.48 (1.04–2.09)

OR odds ratio, CI confidence interval

* Reference category

^a $p < .001$; ^b $p < .05$

being held constant (for all models: $\chi^2 = 81.38$ – $1,429.48$; $p < .001$; Table 3). Children without a primary care provider (OR 1.22; 95 % CI 1.07–1.39) and with unmet medical needs (OR 1.48; 95 % CI 1.05–2.09) were more likely to be covered by public insurance than by private insurance. On the other hand, after adjusting for the covariates above, children without having a routine check-up in the past 12 months (OR 0.87; 95 % CI 0.76–0.99) and without a dentist visit in the past 12 months (OR 0.60; 95 % CI 0.54–0.67) were less likely to be publicly insured than to be privately insured. All the significant results observed in the follow-up analyses by different categories of race/ethnicity, family income, or geographic location were consistent with those reported above.

Publicly-Insured Versus Uninsured Kindergartners and Health Care Utilization

There was a significant association between children with public insurance and those with no insurance regarding access to healthcare (Table 2). For instance, children who were not seen by a medical provider for a routine check-up in the past 12 months were more likely to be uninsured than to be publicly insured ($\chi^2 = 1,223.65$; $p < .001$; OR 4.38; 95 % CI 4.02–4.78). A lack of insurance was significantly associated with a lack of a primary care provider ($\chi^2 = 2,330.64$; $p < .001$; OR 6.77; 95 % CI 6.24–7.34). Furthermore, children who were not seen by a dentist in the past 12 months were more likely to be uninsured than to be publicly insured ($\chi^2 = 1,316.42$; $p < .001$; OR 4.02; 95 % CI 3.72–4.34). Lastly, families reporting that their children had unmet medical needs were more likely to be uninsured ($\chi^2 = 19.74$; $p < .001$; OR 1.61; 95 % CI 1.30–1.98).

The associations of publicly-insured or uninsured to health care utilization described above remained statistically significant, after adjusting for race/ethnicity, family

income, and geographic location using the logistic regression analysis (for all models: $\chi^2 = 81.38$ – $2,573.56$; $p < .001$; Table 3). Of the four health survey items, having a primary care provider or not appeared to be the most associated with publicly-insured or uninsured. Children without a primary care provider were 9 times (Wald $\chi^2 = 1,805.11$; $p < .001$; OR 9.02; CI 8.15–9.99) more likely to be uninsured than publicly insured.

Reported Barriers to Healthcare and Health Outcomes

Approximately 18 % of respondents indicated that they experienced barriers to accessing healthcare. For those that indicated barriers, lack of medical insurance (61.7 % out of 5,649 respondents) and lack of financial resources (56.9 % out of 5,648 respondents), respectively, were the barriers most reported by parents with regards to accessing health care for their kindergartner. When examining barriers experienced by insured and uninsured children, parents whose children were covered by medical insurance were more likely to follow a doctor's recommendations for medications and/or follow up visits than did those whose children were not covered by medical insurance ($\chi^2 = 949.27$; $p < .001$). In addition and as expected, families whose children were not covered by medical insurance felt that the lack of insurance was a barrier to their children receiving health care ($\chi^2 = 775.66$; $p < .001$). When examining barriers of children with private and public insurance, those with public health insurance, as compared to those with private health insurance, were more likely to report that the lack of transportation was a barrier to their children receiving health care ($\chi^2 = 178.23$; $p < .001$). Moreover, coverage by public insurance was significantly related to the decreased likelihood of following a doctor's recommendations for medications and/or follow up visits ($\chi^2 = 443.46$; $p < .001$). Finally, when examining barriers of children with public

insurance and no insurance, parents/guardians of publically insured children were more likely to report problems with transportation ($\chi^2 = 277.23$; $p < .001$), lack of quality medical providers was a barrier to their child receiving health care ($\chi^2 = 160.08$; $p < .001$), whereas parents/guardians of uninsured children were more likely to report financial difficulties ($\chi^2 = 8.91$; $p < .001$) and were less likely to follow a doctor's recommendations for medications and/or follow up visits ($\chi^2 = 181.52$; $p < .001$).

Discussion

Findings from this study support previous research concerning uninsured children and children with public health insurance. It also expands existing knowledge by demonstrating disparities regarding types of insurance coverage in early childhood, a critically important developmental stage when health outcomes have lasting impact, and by highlighting the size of such disparities in a time and place of unusual economic struggle. Both kindergartners without insurance and those with public insurance were found to experience differences in their healthcare access and utilization relative to privately insured kindergartners. Relative to their privately insured peers, publically insured kindergartners experienced significant differences on all items examined in this study, with the single exception that kindergartners with private and public insurance were equally likely to have had seen a dentist in the past year. Kindergartners with public insurance were less likely to have a primary care provider, less likely to have received a routine check-up in the past 12 months, and more likely to have an unmet medical need relative kindergartners covered by private insurance.

Compared to children with public insurance, children without insurance experienced significantly more challenges on all items examined in this study. Furthermore, uninsured kindergartners face additional dental care challenges, as results indicate that they are less likely to have seen a dentist compared to children with insurance, regardless if that insurance was private or public. Oral health is important for children, and visits with pediatricians are likely not sufficient to address oral health issues [36]. Dental care is the most common unmet healthcare need in children [4] and 51 million school hours are lost annually due to dental problems [37]. Cavities and plaque present in one-year-old children is associated with poor dental health later in childhood [38] and, according to the Surgeon General's Oral Health Report, oral health is linked to overall health [39].

Our data suggest that publically insured and uninsured children in early childhood both experience difficulties accessing healthcare. Although public insurance programs

have reduced the number of uninsured children [40], the children enrolled in these programs continue to face problems with transportation, finding quality medical providers, and with following doctor's recommendations. Without access to adequate care, children's health may be in jeopardy, which can lead to an increased number of school absences and more academic deficiencies [21]. Poor academic performance has adverse impacts on the child but also on the nation's economy as these children are at higher risk to drop out of high school therefore limiting their employment opportunities [41]. By investing in children's health at a young age, children will develop a strong mental and physical foundation to perform better throughout their academic career and beyond.

There are a few limitations to the current study. First, our study is limited in that our data is based on self-report. We were not able to verify the accuracy of the reported insurance status of the child and we rely on the parental perceptions of unmet healthcare needs. Second, reports of insurance status and type of insurance were reported at the time of the survey. It would have been beneficial to gather more specific details regarding continuity of coverage. Third, our findings may not be generalizable to broader populations given that our data was obtained from children attending kindergarten in Nevada. However, Nevada's population possesses certain features that make it a relevant location for study. For example, the state has a large metropolitan area as well as substantial rural areas. Additionally, the state is ethnically diverse, and economically comparable to the US at large [42]. Finally, while this study examines access to care among children without insurance, with private insurance, and with public insurance, this study did not examine differences in quality of care children are receiving. As access to healthcare expands and children reliant on public insurance increases, it will be extremely important to examine not only access to healthcare, but quality of the care received.

Policy Recommendation to Improve Access to Healthcare

All children have the right to quality healthcare, and early childhood is a particularly important time in a child's development, when the foundations for academic success, social success, and health are laid. However, not all children receive equal care during this critical stage. Insurance type matters, even as early as kindergarten. Both uninsured and publically insured children entering kindergarten experience less favorable health outcomes and greater barriers in accessing healthcare than privately insured kindergartners.

As the nation moves forward with the Affordable Care Act (ACA), it is expected that insurance coverage for children will increase as insurance opportunities expand for

families beginning in 2014. However, there are still policies that need to be implemented or improved upon to improve healthcare for children. First, given the high percent of uninsured young children both nationally and in Nevada, there should be more investments in outreach and enrollment efforts that target at-risk populations/neighborhoods, and that target women as early as pregnancy. Nearly three quarters of children who are uninsured are also eligible for public insurance [43], but many parents are not aware of the resources available to their children or find the application process overwhelming. Nevada has increased outreach efforts due to the ACA, as well as the implementation of a health exchange program and a new electronic application system, however more grassroots (versus broad based media) campaigns should be established to target efforts in neighborhoods and among populations with high uninsured rates. In addition, it is important to implement presumptive eligibility for pregnant women and young children to avoid delays in seeking care. Additionally, pregnant women who are publicly insured might be more likely to enroll their children upon birth.

As enrollment into public health insurance programs increase, it is important to ensure that those children and families have access to quality providers. It is recommended that provider reimbursement policies are reviewed and ensure that providers who accept public health insurance programs are reimbursed utilizing current (or recent) market rates and that payment systems ensure timely delivery of payments to providers (including use of electronic billing and deposit systems). In addition, policies should be implemented that establish incentives for providers to locate in underserved communities and to accept public health insurance programs. Incentives may include, but are not limited to, assistance with securing New Market Tax Credits for capital projects; business tax abatements; and/or a tiered reimbursement rate system.

Another consideration for policy makers regarding health insurance programs is to ensure that public health insurance programs provide adequate coverage for dental health care, as per recommended schedules for preventive visits for young children. Increased efforts should be made to educate policy makers and the public about the importance of preventive dental health care for young children, and

Finally, a barrier for many families, even those with insurance, is lack of transportation to access medical providers, especially for uninsured and publically insured young children. Policy makers should study the feasibility of including transportation vouchers and/or reimbursement for transportation costs are part of the benefits for public health insurance programs. In addition, as previously mentioned, insurance programs can provide incentives to providers to relocate to underserved communities where families have an easier commute to the physician's office.

Public policy, as it considers healthcare, education, and the state of young children, should make revision so that regardless of life circumstances one of American's most vulnerable populations all have access to quality healthcare. Insurance systems have a clear role in the well-being of young children and both a lack of insurance and public insurance coverage are indicative of difficulties in health access that should not be acceptable. Policies need to be implemented to ensure that all children have timely access to quality physicians, and that physicians treat all children regardless of healthcare status in a quality manner.

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Appendix: Survey Tool



Kindergarten Health Survey

DEAR PARENT OR GUARDIAN: This survey has been designed by the Nevada Institute for Children’s Research and Policy at the University of Nevada Las Vegas, in partnership with the State of Nevada, Department of Health and Human Services and the local County School District. The information from this survey will be used to help understand the health of children entering kindergarten this year. You have been asked to participate because you will have a child in kindergarten. All information from this survey will be used to discuss children’s health on a group level. Your child’s name will never be connected to your responses in any way or known by the researchers. All information in this survey is confidential.

Child’s age: _____	Annual household income (check one)	Your HOME zip code: _____
Name of elementary school: _____	<input type="checkbox"/> \$0 - \$14,999	Child’s race / ethnicity:
Child’s gender: Male Female	<input type="checkbox"/> \$15,000 - \$24,999	<input type="checkbox"/> African American
Child’s weight: _____ lbs.	<input type="checkbox"/> \$25,000 - \$34,999	<input type="checkbox"/> Asian / Pacific Islander
Child’s height: _____ ft. _____ in. (12in = 1ft)	<input type="checkbox"/> \$35,000 - \$44,999	<input type="checkbox"/> Caucasian
Total number of children in your household: (ages 0-17): _____	<input type="checkbox"/> \$45,000 - \$54,999	<input type="checkbox"/> Hispano / Latino
Total number of adults in your household: (ages 18+): _____	<input type="checkbox"/> \$55,000 - \$64,999	<input type="checkbox"/> Native American / Alaska Native
	<input type="checkbox"/> \$65,000 - \$74,999	<input type="checkbox"/> Other (please specify): _____
	<input type="checkbox"/> \$75,000 - \$84,999	
	<input type="checkbox"/> \$85,000 - \$94,999	
	<input type="checkbox"/> \$95,000 +	

Please answer the following questions for the child that is enrolled in kindergarten this year.

- Is your child currently covered by medical insurance? Yes No
If “Yes”, what is the type of insurance?
 Private Medicaid Nevada Check-Up
 Other _____
- Has your child been seen by a medical provider for a routine check-up (not an illness) in the past 12 months? Yes No
- Does your child have a primary care provider (regular doctor, nurse practitioner, or physician’s assistant)? Yes No
- Has your child seen a dentist in the past 12 months? Yes No
- Has your child ever had a cavity? Yes No
- Within the last 12 months, how many times have you taken your child to the Emergency Room (not Urgent Care) for an illness or injury that was not life-threatening?
 None (0) 1-2 3-5 6-9 10 or more
- Please check all medical conditions listed below that your child has:
 Asthma Glasses / Contacts
 Diabetes Hearing Aid / Impairment
 Seizures Physical Disability
 Mental Health Condition ADD / ADHD
 Cancer None
 Other (specify) _____
- Do you think your child may have a medical problem that he/she has not seen a doctor for?
 Yes No
If “Yes”, what is it: _____
- If immunizations were not required for school, would you still have your child immunized?
 Yes No
- Where do you take your child for immunizations (shots)? If you have used more than one of these locations, please check the last location:
 Primary Care Provider (Child’s regular doctor) Health District
 Community Health Clinic School-based clinic
 Other (specify): _____
- Has your child ever been tested for lead poisoning? Yes No
- Have you experienced any barriers to accessing health care for your child? (check all that apply)
 None Lack of transportation
 Lack of insurance Lack of good medical providers
 Lack of money Other (specify): _____
- Have you ever tried to get mental or behavioral health services for your child?
 Yes No
If “Yes”, have you had trouble getting services?
 Yes (explain) _____ No
- In general, are you able to follow your doctor’s recommendations for medications and/or follow-up visits?
 All of the time Some of the time
 Most of the time Never
If you did not say “All of the time”, please explain why not: _____
- In general, how many times a week does your child do at least 30 minutes of physical activity? (circle one)
0 1 2 3 4 5 6 7
- What type of pre-school did your child attend most often in the past 12 months? (check one)
 Home-based School / University campus
 Head start Private None / Stayed home
 Other _____
- What is the name of the pre-school that your child most recently attended (if he/she attended)? _____

PLEASE RETURN THIS SURVEY TO YOUR CHILD’S TEACHER BY FRIDAY, SEPTEMBER 10, 2010

Thank you for your participation. If you are interested in participating in future research, please contact the Nevada Institute for Children’s Research and Policy at (702) 895-1040 or via email at nicrp@unlv.nevada.edu.

TEACHERS: Please return the survey to your school’s front office, or mail to:
NICRP, Kindergarten Health Survey, 4505 Maryland Parkway, Box 453030, Las Vegas, NV 89154



Cuestionario de Salud de Kinder

ESTIMADOS PADRES DE FAMILIA O GUARDIAN: La siguiente encuesta ha sido diseñada por Nevada Institute for Children's Research and Policy en la Universidad de Nevada Las Vegas, en colaboración con el Centro de Salud de Sur de Nevada y el Distrito Escolar del Condado. La información adquirida en este estudio se utilizará para ayudar a comprender la salud de los niños que comienzan la escuela preescolar este año. Le hemos pedido que participe porque usted tiene un niño en la escuela preescolar. Toda la información obtenida será utilizada para discutir y estudiar el nivel de salud colectiva del grupo. Nunca habrá conexión entre el nombre de su niño(a) y sus respuestas. **Todo información en este estudio será confidencial.**

Edad del niño(a): _____	Ingreso anual del hogar (cheque uno)	Su código postal CASERO: _____
Nombre de la escuela primaria: _____	<input type="checkbox"/> \$0 -\$14,999	Etnicidad del Niño(a)
Sexo del niño(a): Masculino Femenino	<input type="checkbox"/> \$15,000 -\$24,999	<input type="checkbox"/> Afro Americano
Peso del niño(a): _____ lbs.	<input type="checkbox"/> \$25,000 -\$34,999	<input type="checkbox"/> Asiático / Isleño Pacifico
Estatura del niño(a): _____ ft. _____ in. (12in = 1ft)	<input type="checkbox"/> \$35,000 -\$44,999	<input type="checkbox"/> Caucásico
Total de niños(as) viviendo en casa: _____	<input type="checkbox"/> \$45,000 -\$54,999	<input type="checkbox"/> Hispano / Latino
(edades 0-17): _____	<input type="checkbox"/> \$55,000 -\$64,999	<input type="checkbox"/> Nativo Americano / Nativo de Alaska
Total de adultos viviendo en casa: _____	<input type="checkbox"/> \$65,000 -\$74,999	<input type="checkbox"/> Otro (especifique): _____
(edades 18+): _____	<input type="checkbox"/> \$75,000 -\$84,999	
	<input type="checkbox"/> \$85,000 -\$94,999	
	<input type="checkbox"/> \$95,000 +	

Por favor conteste las siguientes preguntas sobre el niño(a) que se va a matricular en kinder este año.

- ¿Su niño(a) en este momento cuenta con seguro médico?
 - Si No
 ¿Encaso de sí? ¿que tipo de seguro?
 - Privado Medicaid Nevada Check-Up
 - Otro _____
- ¿Su niño(a) ha sido visto por un proveedor de servicio médico este año para un examen de rutina (no por enfermedad) en los últimos 12 meses?
 - Si No
- ¿Tiene su niño(a) un médico familiar (médico, enfermera de práctica o asistente de médico)?
 - Si No
- ¿Ha visto su niño(a) a un dentista en los últimos 12 meses?
 - Si No
- ¿Ha tenido su niño(a) caries? Si No
- En los últimos 12 meses, ¿cuántas veces ha tenido que llevar a su niño(a) a la sala de emergencias por una enfermedad o lesión sin peligro la vida?
 - Ninguna (0) 1-2 3-5 6-9 10 o mas
- Por favor seleccione todas las condiciones medicas que tenga su niño(a):
 - Asma Lentes/ de Contacto
 - Diabetes Oído/Discapacidad Auditiva
 - Convulsiones Discapacidad física
 - Condición de Salud Mental ADD/ADHD
 - Cáncer Ninguno
 - Otra (especifique) _____
- ¿Cree que su niño(a) tenga un problema médico pero usted no ha ido a ver a un médico?
 - Si No
 Si la respuesta es sí, por favor especifique: _____
- Si las vacunas no fueran necesarias para la escuela, ¿Vacunaría (inmunizaciones) a su niño?
 - Si No
- ¿Dónde lleva a su hijo para inmunizaciones (vacunas)? Si ha utilizado más de un tipo de local, por favor, indique la más reciente:
 - Proveedor cuidado primario Centro de Salud (médico regular) Clínica de salud basada en la escuela
 - Clínica de Salud Comunitaria Otro (especifique): _____
- ¿A sido su niño(a) examinado por contaminación de plomo?
 - Si No
- ¿Se ha enfrentado con obstáculos en el acceso de salud para su hijo? (cheque todo que aplique)
 - Ninguno Falta de transportacion
 - Falta de aseguransa Falta de proveedores médicos de calidad
 - Falta de of dinero Otro (especifique): _____
- ¿Alguna vez ha tratado de obtener servicio de salud mental o de comportamiento para su niño(a)?
 - Si No
 En caso que sí, ¿ha tenido problemas para obtener servicios?
 - Si (especifique) _____ No
- En general, ¿Puede seguir recomendaciones del médico en cuanto a medicamentos o seguimiento de las visitas?
 - Todo el tiempo Algunas veces
 - La mayor parte del tiempo Nunca
 Si no contesto "Todo el tiempo", por favor especifique porque: _____
- En general, ¿Cuantas veces a la semana hace su niño(a) por lo menos 30 minutos de actividad física? (circule uno)

0	1	2	3	4	5	6	7
---	---	---	---	---	---	---	---
- ¿Que tipo de escuela preescolar atendio su niño(a) mas en los ultimos 12 meses? (cheque uno)
 - Badado en Casa Campamento en Escuela/Universidad
 - Head start Privada Ninguna/Permaneció en la Casa
 - Otra _____
- ¿Qué es el nombre de la escuela preescolar que su hijo más recientemente atendió a (si atendió alguna)? _____

VUELVA POR FAVOR ESTA INSPECCION A MAESTRO DE SU NIÑO POR EL VIERNES, SEPTIEMBRE 10, 2010

Gracias por su participación. Si esta interesado en participar en investigaciones futuras por favor contacte al Nevada Institute for Children's Research and Policy al (702) 895-1040 o por email al nicrp@unlv.nevada.edu .

TEACHERS: Please return the survey to your school's front office, or mail to:

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