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CHIP Utilization in South Texas:
A Prospective Longitudinal Study of the Children's Health Insurance Program

by Ann V. Millard and Nelda Mier

South Texas Center, School of Rural Public Health, TAMU System Health Science Center

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Children's Defense Fund, Rio Grande Valley

Research Report No. 33

December 2004

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Summary

This pilot study examined the use of health services by families with children on CHIP and Medicaid. The project focused on how families in Mission, a small city in South Texas near the border with Mexico, used the programs. The study found increasingly efficient use of health services over time, including a statistically significant drop of nearly 80% in the use of the emergency room from the first to the second year of the study. Preventive care was used regularly by most families in the study as measured through rates of visiting the dentist and getting an eye examination; however, those rates fell immediately and drastically after the state legislature cuts in CHIP came into effect in the fall of 2003.

Data collection for the City of Mission Project began in January, 2002, with a sample of 77 Hispanic families and ended in June, 2004, with 43 families with 119 children. Major quantitative findings are:

- Emergency room use decreased significantly, by 79.2%, from the first to the second year of the project.
- Although 82.2% of families had at least one employed parent, no child had employer-based health insurance.
- Families were increasingly current on immunizations, reaching 98.31% by the end of the study;
- After CHIP cuts, dental visits fell drastically, by 86.0%; eye exams, by about 58%.
- Lack of transportation prevented about 10% of children each month from going to the doctor when a parent wanted to take them.

This pilot study presents evidence supporting the following conclusions:

(1) Parents rely on CHIP and Children's Medicaid to meet the needs of their children. They are unable to purchase healthcare coverage from any other source. Most families in this study have at least one working parent; however, they did not have employer-provided insurance that could cover their children.
(2) Parents are using CHIP and Children's Medicaid appropriately and efficiently.
(3) Use of the emergency room decreases dramatically when children have health insurance.

Low-income families thus rapidly came up to speed on using health services efficiently, and they and healthcare providers demonstrated exquisite sensitivity to policy changes by responding rapidly to CHIP program cuts. The savings in emergency room services include state indigent care funds provided to the county and additional county monies.

Acknowledgements

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CHIP Utilization in South Texas:
A Prospective Longitudinal Study of the Children's Health Insurance Program

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CHIP Utilization in South Texas:
A Prospective Longitudinal Study of the Children's Health Insurance Program

Introduction

The Children's Health Insurance Program (CHIP) began as a federal stopgap measure to assist families whose incomes were too high to qualify for Medicaid, but too low to make health insurance for their children affordable. In 2002, efforts were launched around the United States to recruit eligible children into the program. This pilot study examined the relationship of CHIP to children's access to health care with the long-term goal of identifying ways to improve child health.

Background

Government-provided Health Insurance for Children

This study dealt with CHIP and Children's Medicaid as the two government-provided health insurance programs for children. The two are closely related even though they are separate programs as described further below. For example, efforts to recruit children to CHIP often resulted in Medicaid enrollment, because the family income was low enough to qualify for the latter. As CHIP began, many policy makers had assumed that enrollment in Children's Medicaid was virtually complete, and recruitment of families to CHIP would be a separate effort. As discussed further below, lack of access to employer-provided health insurance for children is also a force driving enrollment in both programs.

Children's Medicaid reimburses healthcare providers for services and medicines provided to child patients at set rates. Parents have no annual fee or co-payment required for medical care. Children are eligible for Medicaid if they meet specific requirements, including a family income below a given threshold defined by the federal government. Children's Medicaid allows two visits to the dentist annually plus as many visits as are required to fill cavities. In the South Texas region, doctors and dentists seek Medicaid patients and consider the reimbursement rates acceptable.

The Children's Health Insurance Program (CHIP), funded by the U.S. federal and state governments, provides health insurance to children (those less than 19 years old) from households with incomes too high to qualify for Children's Medicaid, but low enough to make paying for insurance prohibitive. (The program is also called SCHIP and CHIPS to indicate the involvement of state funds.) CHIP has a sliding scale payment system; until fall, 2003, the maximum total payment per family was only $18 per month to cover all eligible children.

The State of Texas made major changes to CHIP beginning in the fall of 2003: the premiums increased; co-payment amounts were raised; dental care was excluded; and other reductions of services were put into place. Parents were required to reapply every six months, and a waiting period of three months from application to the beginning of coverage was imposed. One result, according to this study, was that healthcare services received by children declined significantly.

City & Region Sociodemographic Characteristics

The City of Mission, located in Hidalgo County, was chosen as the site for the longitudinal study based on the positive response of government leaders, school administrators, medical providers, and others to the project aim of improving the health of children in the community.

Mission has a population of 45,408, an average per capita income of $12,796, and approximately 37.4% of children living in poverty (U.S. Census, 2000). Mission is located in Hidalgo County, where 88.3% of the population is Hispanic (Texas Dept. of Health, 2003).

In Hidalgo County and the surrounding region, a high percentage of families have incomes below the federal poverty threshold (U.S. Census Bureau, SF3 profiles 2002, cited by the Texas Department of Health, 2003). In 1999, the poverty line for a family of two adults and two children was $16,895 (U.S. Census Bureau, 2004). People living below the poverty threshold in Hidalgo County in 2000 included 35.9% of the population, and 45.5% of children (Texas Department of Health, 2003). Among adults at least 25 years of age, 33.8% had less than a ninth grade education, 20.2% were high school graduates, and 30.3% had at least begun higher education (U.S. Census, 2000).

Methods

Procedures

This longitudinal project was based on a quantitative and qualitative research design using a structured questionnaire administered to families in Mission. Families were selected through referrals from schools, a community health fair, and the city public library. The selection criteria consisted of (1) a willingness to participate and (2) children's enrollment in either CHIP or Medicaid. All participants were reported to be Hispanic. The data were collected from June, 2002, through June 2004.

Telephone Interviews & Questionnaire

The Data Manager collected information through monthly telephone calls to participating families. She gathered information on a 7-page questionnaire developed by Children's Defense Fund-RGV, including closed- and open-ended questions covering key domains including demographics, health insurance coverage, employment status, children's access to healthcare, children's use of the emergency room, and other topics. A new questionnaire section was added to record information on newborns and other arrivals to the study, and on children who grew too old to continue in the sample (those children reaching the age of 19 years no longer qualify for CHIP.) The Data Manager entered the questionnaire data into Excel workbooks.

Narrative Notes

She also entered her notes on parents' comments and questions into a Word document for further content analysis of issues, concerns, and strategies discussed by the parents.

Data Quality

The data in this project were reported by parents over the telephone. We do not have any direct ways to verify the information; however, the longitudinal nature of the project gave the Data Manager an opportunity to check the consistency of information, and she found it strong. She also took advantage of the monthly phone calls to develop rapport with participants, enhancing our confidence in the data. Parents could have provided misinformation in the interviews; however, the fact that they often requested information about resources for their families and their evident friendships by phone with the Data Manager lead us to think that they provided the project with the truth as they saw it.

Retention Methods

Project staff anticipated that retention of families in the sample would be a challenge. Some families forewent telephone service for a period, and then had their service reconnected. (Telephone companies allow a grace period of three months or so before they reassign a phone number.) The Data Manager continued each month with calls to numbers previously disconnected, and she re-established contact with a number of families in this way.

Families received no compensation or incentive payments for participating in the project. It is possible that if the project had had additional ways of contacting families, in addition to their telephone number, the retention rate might have been better. Some families use temporary, prepaid cell phones, some move to new addresses, and some leave the state seasonally as migrant farm workers and other seasonal employees. Despite this weakness of the study, the retention rate was acceptable, as discussed below.

Process Evaluation

The process evaluation of the project, including data analysis and reports, has been conducted with the assistance of evaluators, who are professors from a state school of public health.

Methodological Issues

This pilot study had two major methodological dimensions:

(1) Identifying the ways in which low-income families use healthcare when it is provided to them at low cost. Specifically, observing how well they use such programs for children.

The study did not use a pre- and post-program design. Therefore, the effect of CHIP enrollment, compared with no health insurance coverage, is particularly difficult to address. The strongest area for making this comparison is in visits to the ER over time.

(2) Exploring the feasibility of tracking the utilization of healthcare services by families with children under CHIP and Medicaid through time.

This study has permitted Children's Defense Fund-RGV to explore the feasibility of becoming a venue in the Rio Grande Valley to track the benefits of CHIP and Children's Medicaid enrollment in a population that is seldom researched, low-income Hispanic families. In

addition, this pilot study also has determined the most efficient means to carry out such a study. On the basis of this pilot study, therefore, it would be possible to begin a study to assess the impact of health insurance and other health service programs on children's health status and access to healthcare. Such a study would require long-term, extensive efforts. Measuring rates of use of the programs is a relatively easy task in comparison, but it does not reveal the health impact of CHIP and Children's Medicaid.

Main methodological accomplishments of the study are considerable, and they include:

- *Development of a recruitment technique tailored for the Hispanic population.*
- *Refinement of methods of data collection, including a questionnaire;*
- *Records of attrition; and insights into potential techniques for decreasing it.*
- *Identification of further refinements to make the data more accurate.*
- *The main value of the data is that they are longitudinal and quite detailed quantitatively. We are confident that the data are reliable and valid; i.e., that parents understood the questions being asked and responded in a consistent manner. The reason for our confidence in the data is partly that Soledad Flores, Project Assistant/Data Manager, called the families each month, recorded their responses to questions in a systematic manner and in detail, and rephrased questions to clarify them when it seemed appropriate.*

Results

Sample Size and Retention

The initial sample included 77 Hispanic families. At the end of the study, 43 of the original families remained. The retention rate was 55.84%; thus the results describe over half of the families who originally participated in the project. Regarding attrition of the sample, it is not clear whether families who dropped out of the project differ systematically from the remaining families, e.g., they may include migrant workers who will return to the area at a later date but are no longer accessible at the phone number on file.

Social Aspects

Family size was small on average. The final sample had 2.83 children per family on average. The small family size in this study is consistent with other studies of low-income families but contradicts the common negative stereotype of recipients of government assistance as having many children.

Employment Rates

Families who had at least one parent working accounted for 82% of the sample (November, 2003) (Figure 1 and Table 1, row 2). Twice as many fathers as mothers had jobs (Figure 2). Those who were employed included 58% who were employed full-time, 29% with temporary jobs, and 13% with ongoing part-time work (Figure 3). This is a second contradiction of the usual negative image of recipients of government assistance, who are usually characterized as unemployed.

Figure 1. Families and Employment

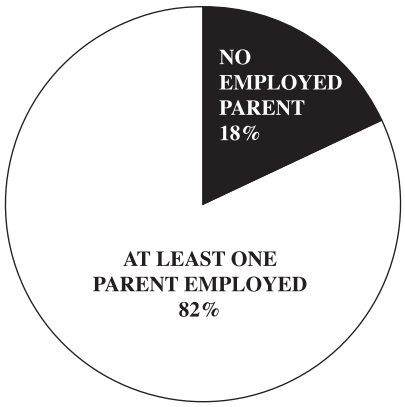
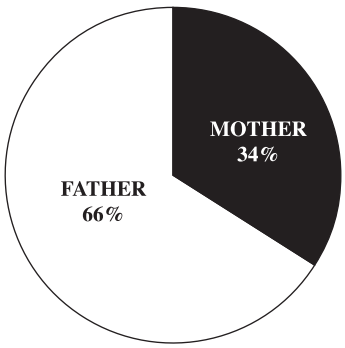


Table 1. Children's Health Insurance* in Working Families

	Number	*%*
Parent(s) Employed?**		
No	8	17.8%
Yes	37	82.2%
Total families	*45*	*100.0%*
Full-time job	22	57.9%
Part-time or temporary job	16	42.1%
Total employed parent(s)	*38*	*100.0%*
Employer Offers Health Insurance		
No	24	64.9%
Yes	13	35.1%
Total families with employed parent(s)	*37*	*100.0%*
Covered by Employer-provided Health Insurance		
Employee***	13	35.1%
Spouse	0	0.0%
Children	0	0.0%
No one	24	64.9%
Total families w/at least 1employed parent	*37*	*100.0%*

** Health insurance is defined as CHIP, Medicaid, or private insurance.*
*** The interviewer asked, "Is at least one parent in the household employed?*
**** The employer pays part of the premium for 3 employees and all of it for 8.*

Figure 2. Gender of Employed Parents



Employment-based Health Insurance

Health insurance in the United States is primarily employment-based, although low-income workers are least likely to be offered this benefit and to be able to afford it. Since the unemployment rate in Hidalgo County is one of the highest in the state, there is substantially less opportunity for people to access health insurance through their employers. Most low-wage employers in the Rio Grande Valley do not offer health benefits to employees' families, and if they do, most offer it only to full-time employees.

Availability of health insurance obtained through the employer for the employee or any family member is shown in Figure 4 (data from November, 2003). Of parents with jobs, 57.9% were working full-time (Table 1, row 4). Only 35.1% of employees had access to health insurance at work, however (row 8). During interviews for another project, we found that some employees thought that health insurance meant workers' compensation or attention to injuries at work from a doctor paid by the employer. These concepts may also be held by some of the employees in this study; thus, we consider 35.1% a maximum proportion of those to whom employer-based health insurance was available. Among the working families in this study, children and spouses of employees received no health insurance from the employer.

Figure 4. Availability of Any Health Insurance at Work

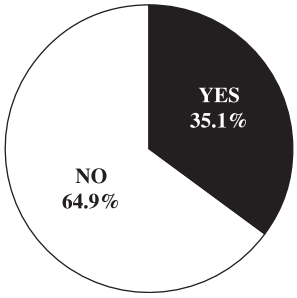


Figure 3. Employment Basis

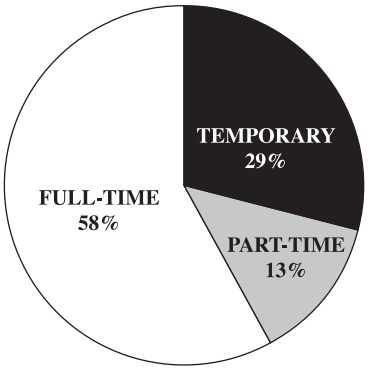
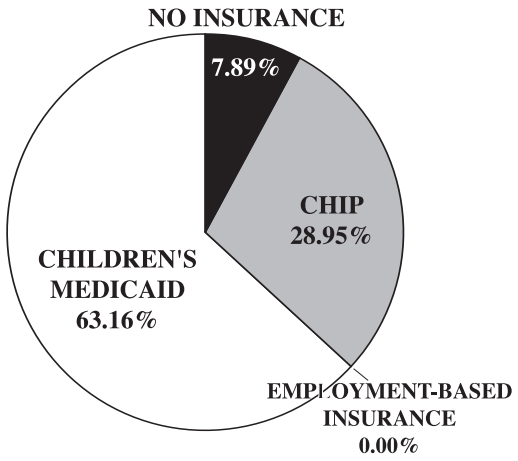


Figure 5. Children's Health Insurance



Government-provided Health Insurance and Lack of Coverage

Figure 5 shows the distribution of government insurance programs among children at the end of the study (Table 2). Those covered by CHIP were 28.95% of the children; Medicaid covered 63.16%, and 7.89% had no insurance. At the beginning of this project, 10.31% of children were uninsured, and in December, 2003, 11.11% lacked insurance. The need of low-income families for government-provided health insurance is clear in this project. The government programs fill a major resource gap faced by children of low-wage employees as well as the unemployed.

Table 2. Children's Healthcare Coverage

	Number	*%*
CHIP	33	28.95
Children's Medicaid	72	63.16
Employer-based Insurance	0	0.00
No Healthcare Coverage	9	7.89

Table 3. Medical Home, Specialist Care, and Transportation Problems						
	Feb 2003		*Nov 2003*		*June 2004*	
Children with a Medical Home	93	70.99	94	74.60	81	68.07
Children with a Primary Care Provide	37	28.24	32	25.40	38	31.93
Child Patients at a Public Clinic	130	99.23	126	100.00	119	100.00
Children with a Specialist or other Provider*	4	3.08	6	4.76	1	0.84
Transportation Problems Prevented Access to Medical Care	6	4.80	14	11.11	11	9.24

** Other providers include Speech Therapists, Counselors for mental problems, etc.*

Medical Home

At the end of the study, 100% of children had a medical home (i.e., a doctor or clinic where one is a regular patient). Many had a private doctor as the primary health care provider (68.07% in June, 2004; see Table 3, top row). Patients at a public clinic included 31.93% of the children. Only one child visited a specialist in the final month of the study (Table 3, row 5). In earlier months, that figure reached as high as 11.11% ("Specialist" here includes not only M.D.s, but also speech therapists and behavioral problem counselors).

Medical Resources in Mexico

In the South Texas region, many people from the U.S. visit a doctor or pharmacist in Mexico to obtain healthcare and medicine at low cost. In the first five months of 2003, two children went to Mexico to see a doctor due to a throat illness. In the last month of the study, no one went to Mexico to see a doctor. Use of medical care in Mexico was rare among the families in this study, indicating the importance of health insurance in allowing low-income families to access care in the United States.

Immunizations

Immunization rates were high throughout the study and reached a phenomenal 98.31% of the children at the end of the project (Table 4, row 4). Generally, immunization rates are higher in South Texas than in the rest of the state and elsewhere in the United States (Arden et al., forthcoming).

Table 4. Children Reported to have Updated Immunizations		
Month	*Total # of Children In Study*	*% with Updated Immunizations*
Feb. 2003	124	94.66
June 2003	126	96.92
Nov. 2003	126	100.00
June 2004	117	98.31

Emergency Room Visits

Visits to the emergency room (ER) for non-emergent situations are expensive. Unfortunately, they are frequent for persons without health insurance and a medical home. In this study, each participant was asked if each child had visited the emergency room in the last month and for what reason.

In 2002, the rate of visits by children in the study was 0.154%. In the first eight months of 2002, it was only 0.032%, signifying a drop of 79.22% (Table 5 and Figure 6). This huge decline in rates is statistically significant. From September, 2003 through June, 2004, the rate of visits fell further, but the comparison with the first part of 2003 was not statistically significant (see Appendix for detail on how rates were calculated). These data indicate a precipitous decline in the number of emergency room visits.

Figure 6. Emergency Room Visits, 2002 & 2003

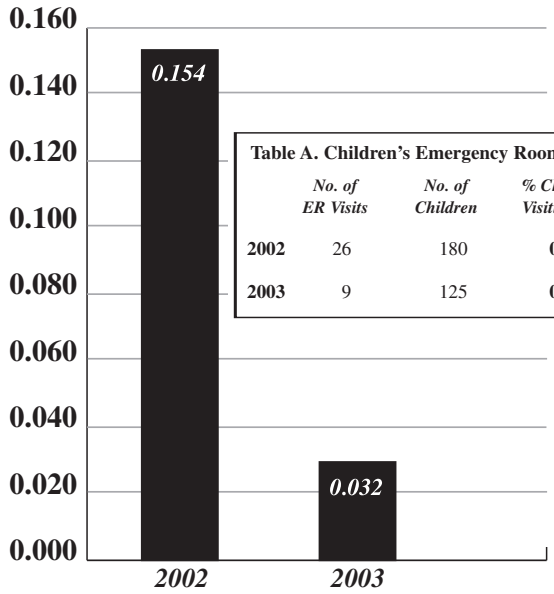


Table A. Children's Emergency Room Visits			
	No. of ER Visits	*No. of Children*	*% Children Visiting ER*
2002	26	180	**0.154**
2003	9	125	**0.032**

Table 5. Children's Visit to the Emergency Room			
	2002	*1/1/03-8/31/03*	*9/1/03-6/30/04*
Rate of Visits	0.15%	0.032%*	0.026%**

The 3 periods in the table are: the first 7 months of the study in 2002; the first 8 months of 2003 before CHIP cuts began; and the period when CHIP cuts were in effect.

Differences were examined with the exact 1-tailed binomial test (used to compare 2 Poisson Distributions)

** Significantly different from the rate in 2002 (p = 0.000)*
*** Not significantly different from the rate in the first 8 months of 2003 (p = 0.747)*

Some cases in the first half of 2003 provide detailed information about emergency room use by families in the study. Between February and June 2003, there were three visits by children to the emergency room. These three visits were by two children, one of whom went to the ER twice. Both children were enrolled in CHIP. The reasons for their visits were hand and foot injuries. In one case, a parent called the doctor or clinic before taking the child to ER and was told to go to the emergency room because the doctor's office did not have the necessary equipment to deal with the injury. In these cases, parents were using the emergency room appropriately and, at least in one case, the parent contacted the child's regular medical care provider before resorting to emergency care.

If CHIP enrollment tends to decrease emergency room visits significantly, and to put parents into contact with primary care providers before using the emergency room, a net financial effect of CHIP may be to save government funds. Specifically, the State of Texas provides indigent care funds to the counties to pay for hospital care for the uninsured hospital patients who are unable to pay their bills. Once the indigent care funds have been exhausted, the county budget and the hospitals themselves are saddled with the remaining expenditures. Therefore, CHIP may offer a sound way to save local dollars and ease hospital budget pressures.

These findings indicate that parents changed their patterns of using healthcare services after the beginning of the study. That is, they learned how to use the services more efficiently. Two ways in which they may have changed their approach include going to a primary care doctor instead of the ER and taking their children to the doctor at an earlier stage of an illness, thus avoiding an acute medical crisis and the need to use the emergency room. Our data do not show which type of change occurred. Data in this study show, however, that the new pattern of emergency room use by parents was appropriate — that it was not being used for ordinary ambulatory care or for illnesses that had been allowed to develop into acute cases. Instead, the emergency room apparently was being used for treatment of injuries.

Preventive Care

Important preventive healthcare visits reported by participants included dental care and eye examinations. Dental visits require parents to find a provider and make a separate appointment, whereas eye exams are routinely given at doctor's offices and schools and thus tend to have higher rates. Although we cannot claim that the parents' general concern in dental visits was preventive, prevention is part of routine dental care. Eye examinations are similar, except that school nurses as well as doctors perform them, and we do not know the source of the examinations for the children in the study. Before the cuts in CHIP, 64.32% of children were visiting the dentist annually, and 100% received an annual eye examination. (The rates of eye examinations by doctors would probably be less than that reported by parents, who probably included nurses' exams in at least some cases.)

CHIP Cuts

Table 6 reports on rates of visits to the dentist, eye examinations, and visits to the doctor other than emergency room cases. The rates of dental visits and eye exams declined between the period of full funding for CHIP (2002-8/31/03) and the period when CHIP cuts were imposed (9/1/03 to the end of the study, 6/30/04). The cuts removed dental and vision care from the CHIP benefit package. In this study, dental visits declined by 86.0% from the first to the second period; the decline in eye examinations was 57.8%. We consider the decline in dental visits to be accurate as based on parents' reports. The decline in eye examinations is an approximation, however, because of the likelihood that nurses' exams may have been included by at least some parents, as noted above. Although we expect that doctors will continue routine eye exams, and schools will continue to give vision tests, more specialized care is no longer be provided to CHIP patients as of fall, 2003. The result of the CHIP cuts has been an immediate, huge decline in preventive health services for children, specifically dental care, and very likely vision care as well.

Table 6. Dental & Vision Care & Non-Emergent Doctor Visits		
	2002-8/31/03	*9/1/03-6/30/04*
Rates of Visiting the Dentist*	18.28%	2.56%
Rates of Eye Examinations**	15.32%	6.47%
Rates with Non-Emergent Dr.'s Visit***	7.35%	7.77%

The 2 periods shown are the beginning period and the period with CHIP cuts in effect.

Differences were examined using Fisher's Exact Test (1-tailed; used to compare 2 binomial proportions)

** The 2 rates are significantly different (p = 0.000)*
*** The 2 rates are significantly different (p = 0.000)*
**** The 2 rates do not differ statistically (p = 1.00)*

CDF-RGV Media Use in Dissemination

In the summer of 2003, the staff of this project noted that the parents of CHIP children had found out about the impending elimination of benefits and discussed them with project staff. Project staff did not provide information about the pending cuts and did not raise the issue; apparently, parents learned about the changes through local media. The Children's Defense Fund — Rio Grande Valley has consistently provided carefully worded information to news media about CHIP and Children's Medicaid in English and Spanish. CDF-RGV also follows up on reports to ensure that accurate information was disseminated. Information also has been disseminated by staff of community-based organizations trained by and using materials provided by CDF — RGV, including posters and flyers.

The rates in Table 6 were calculated on the basis of the number of children each month in the study and those receiving dental and eye care (see Appendix for further detail). The declines since the CHIP cuts went into effect were statistically significant. There was no increase in non-emergent visits to the doctor, and this benefit was not cut. These results support the assertion that the cuts had a direct effect on parents' use of the healthcare system for their children, and that the cuts have deprived children of necessary services.

These examples thus suggest a strategic use of resources by low-income parents and an effort to access appropriate preventive care for their children. Making a strong conclusion about preventive care would require more data, however.

Current Medical Problems

Most health problems reported by parents were typical of minor ailments of the general population of children (Table 7). They include infections, need for glasses, problems with reading and speech. They also include asthma and allergies, listed among the fastest-growing childhood illnesses, and other potentially serious problems, such as fainting, headaches, and heart problems. Over 10 months in 2003, 7.35% of monthly reports included a child with current illness or use of therapy.

Transportation

Parents reported ongoing problems with transportation. In February, 2003, 4.80% of children missed getting healthcare because of lack of transportation; in December, this applied to 11.11% of children, and in June, 2004, to 9.24% of children (Table 3, last row). An employed parent in a low-income family often commutes in the family vehicle, which makes getting to the doctor during work hours a haphazard process for other family members. Some public clinics, however, are open after 5 p.m. some days. Also, some private doctors provide transportation to their clinics.

As the rates of use of preventive services seemed unusually high in the pilot study, we hypothesized that the monthly telephone calls from project staff were functioning as a reminder for parents to take their children for preventive services. Participant responses support this hypothesis by suggesting that telephone reminders may be a good way to improve the use of preventive services for children. For example, in February 2003, 85% of family participants (n=49) said that participating in the survey helped them as a reminder to take their children for health services, including visits to the doctor or clinic, eye exams, immunizations, and dental care. It is important to note that project staff did not seek to remind parents to get healthcare for their children or to instruct them in doing so, although staff did respond to parents' questions.

Healthcare Access

Findings from this project indicate that children's health insurance — CHIP and Children's Medicaid — assists families in meeting the healthcare needs of their children. Table 2 shows that approximately one third of children were enrolled in CHIP and the rest in Children's Medicaid. Some children began the study without insurance (10.31%), and somewhat fewer lacked insurance at the end of the study (7.89%). Earlier in the study, the proportion had declined to 4.03%; thus the fluctuations in uninsured mirrored the ebb and flow of enrollees in CHIP — declining percentages of uninsured children from 2002 through August, 2003, followed by increasing percentages. The cuts in CHIP are projected to lead to falling enrollments of children because of increased paperwork required for renewals and heavy asset tests. In this study, however, we lack data other than the above changes in the percent of uninsured children.

Table 7. Reasons for Doctors' Visit*				
	*Feb 2003***	*June 2003*	*Nov 2003*	*June 2004*
Neurologically & Mentally Related				
Eye Infection				1
Astigmatism			2	
Dyslexia & Other Reading Problems	1	1	1	
Fainting	1	1		
Headaches	1	1		
Speech Problems	1	1	1	
Tubes in Ears	1	1	1	
Heart Problems		1	2	
Musculoskeletal: Back Problem	1	1		
Respiratory Problems				1
Allergies	2	3		
Asthma		1		1
Cold				4
Physical Therapy	1	1	1	
Injury				1
Physical Exam				1
Follow-Up Visit				1
Other				2
Total with Medical Problems	***9***	***12***	***8***	***12***
	6.87%	***9.23%***	***6.35%***	***10.08%***

** This Table deals with outpatient visits and excludes emergency room visits.*
*** February was the first month of data collection in 2003 and June, the last, in 2004.*
This table provides snapshots of illness patterns; some cases reported are the same child at different times.

The number of families in this study was 47 in September, 2003, and fell to 43 at the end of the study in June, 2004. We have no way of knowing what happened to children's insurance status in the four families lost to the study after the CHIP cuts went into effect.

Most families in the study had at least one employed parent, but no child had employment-based health insurance. The general concept that health insurance is provided at the workplace, therefore, does not hold for the families in this study.

This finding suggests that families of low-income workers are being left out of health insurance offered by employers. Either the employers do not offer insurance for children, or the parents cannot afford the programs that are made available. Those without coverage for their families include both part- and full-time employees. For low-income workers, therefore, CHIP and Children's Medicaid have become crucial income supplements that are required to cover their families' basic needs. The large percentage of families in this category is a surprising finding and counters the stereotype that those dependent on government healthcare programs are unemployed and "lazy."

Case Management and CDF-RGV Resource List

Results from the study show that the number of visits to the emergency room by participants decreased by 79.22% between 2002 and 2003 (Table 5). Furthermore, we found that participation in the survey may have improved access to preventive care for children. This phase of the study partially documents this effect and poses questions about how to spread the effect, if it is verified, to the population beyond this project.

The Data Manager assisted families in the study in several ways. The data suggest that her monthly telephone calls to survey participants served to remind them to take their children for preventive services.

The Data Manager found that she was being asked questions that require extensive knowledge of community resources to assist families with a wide variety of needs. CDF-RGV developed a list of resources available in the area to share with families when such requests arose during the monthly phone calls. Through the use of the list by the Data Manager, the survey assisted study participants by providing another case-management function for families. If this effect can be documented in a larger study, this approach may make referrals to services more efficient for low-income families. Added benefits may extend to a decrease in emergency room visits and associated costs, effective disease management, and timely childhood preventative checkups. In addition, the list of resources was provided to those working with CDF — RGV on enrollment efforts (those working at various community-based organizations) and school nurses in Mission.

Discussion and Conclusions

The cuts in CHIP beginning in the fall of 2003 had a significant effect on access to healthcare for children. Knowledge of the impending cuts induced many parents to get their children to the dentist and to make sure they received eye examinations. Once the cuts were in place, children's access to dental and eye care dropped precipitously (Table 6). Again, more data would be required to support this finding from a pilot study.

In conclusion, this pilot study has solved a number of methodological issues in the study of Hispanic families in the lower Rio Grande Valley as they access CHIP and Children's Medicaid. Retention of families in the sample was surprisingly good considering that they received no incentives. The project team has identified ways of enhancing retention in a future study. Regarding use of health services, the project has three main conclusions:

- *CHIP and Children's Medicaid were used by the families in appropriate ways. Generally, children received preventive care in addition to care for acute conditions. These conclusions are based on reasons for emergency room visits and rates of immunization, visits to dentists, and eye examinations, three areas of prevention that we use to characterize parents' general approach to preventive care.*

- *Furthermore, this pilot study finds that emergency room visits declined dramatically from the initial to the middle period of the research. This change may have resulted from a case-management effect of project staff calling parents each month and fielding their questions about dealing with health problems and accessing resources to meet their families' basic needs.*

- *Cuts in the fall of 2003 drastically reduced children's access to dental care and to eye examinations. The data indicate a strong effort on the part of parents to access these services before the cuts. With the cuts, rates of dental visits and eye examinations fell significantly. Thus, families are highly sensitive to the details of CHIP policy, and the effects translate quite directly into health service curtailment for children.*

This information provides support for a hypothesis that low-income families manage healthcare as a resource in responsible, efficient ways that promote child health. These and other tentative findings of this project provide a basis to justify further funding to expand data collection with a larger sample.

In addition to this study, CDF — RGV mounted a major information and recruitment campaign to increase CHIP enrollment. The provision of accurate, easily understood information in English and Spanish is crucial to the success of the program, and as the cuts in the program have proceeded, new information from CDF — RGV on CHIP and Children's Medicaid has been crucial to families in the region.

This study specifically engaged in second education and communication effort, the building of a list of referral agencies for families in Mission — food banks, emergency assistance providers, and others constituting part of the safety net for local families. The referral list was important for answering the questions from parents in the study, and it was provided to those working with CDF — RGV in CHIP and Children's Medicaid enrollment efforts and to school nurses for use with the general population. These efforts of the Children's Defense Fund have provided significant assistance to low-income families in meeting the needs of their children.

Information on this pilot study has been disseminated in an international presentation, a poster session, a newsletter, and other news media, and will appear in an article in the health services literature (see Appendix). These dissemination efforts will document the methods and findings and make them available to policy makers and researchers. The project team is seeking further funding to expand the project and ensure that the sample is representative of low-income Hispanic families in the region.

Appendix

Calculation of Rates and Statistical Results

Calculations of rates of children visiting the emergency room, going to the dentist, receiving eye examinations, and visiting doctors for non-emergent care were complex. The numbers of children in the study changed over the course of the study, and the rates had to take the changing numbers into account. The variation in interview questions determined the difference in methods of calculation of the rates of use of different health services. The rates shown in the report are relatively small because rates were calculated on a per-day or per-month basis. This is the approach commonly used in the research literature because it is more accurate than calculations on a yearly basis when the sample size changes every month.

Rates of emergency room visits were calculated on the basis of the number of visits per child per day. We hypothesized that emergency room use would drop over time, because we expected that as families became used to having a medical home for their children, they would resort to the emergency room less often as a source of primary care. Partly, this hypothesis also rests on the idea that parents would begin to use ambulatory care earlier, preventing the development of an emergency and the need to use the emergency room. The exact one-tailed binomial test was used to compare the rates (because the comparison is of two Poisson distributions).

Rates of going to the dentist, receiving eye examinations, and visiting doctors for non-emergent care were calculated on the basis of the number of visits per child per month. For example, there were 1,723 possible visits to the dentist from the beginning of the study through 8/31/03, measured on a monthly basis. The number of actual visits was 315. The rate that results (315/1723) is 0.1828 or 18.28%. We hypothesized that the rate of visits to the dentist and the rate of getting eye exams would drop once the CHIP cuts went into effect, because these services were no longer covered. (Although children could get eye examinations from their primary care provider, they could not get them from a specialist.) We included visits to the doctor on a non-emergent basis as an additional point of comparison, even though there were no cuts of that type of healthcare service. Fisher's exact test was used to compare rates (because the comparison is of binomial proportions).