

**IMPLICATIONS OF CHIPRA:  
Utilization of dental services among young children**



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# PRESENTATION OUTLINE



1. Introduction
2. Method
3. Results
4. Discussion
5. Conclusion



# INTRODUCTION





# DENTAL CARRIES

Prevalence, severity, and treatment cost increase with age and duration of delay



# DENTAL CARE

Greatest unmet  
healthcare need  
among low-income  
children under five



# CHILDREN'S HEALTH INSURANCE PROGRAM REAUTHORIZATION ACT (CHIPRA)

Goal: to motivate states to develop mechanisms for increasing enrollment of eligible children in Medicaid/CHIP

Dental health components:

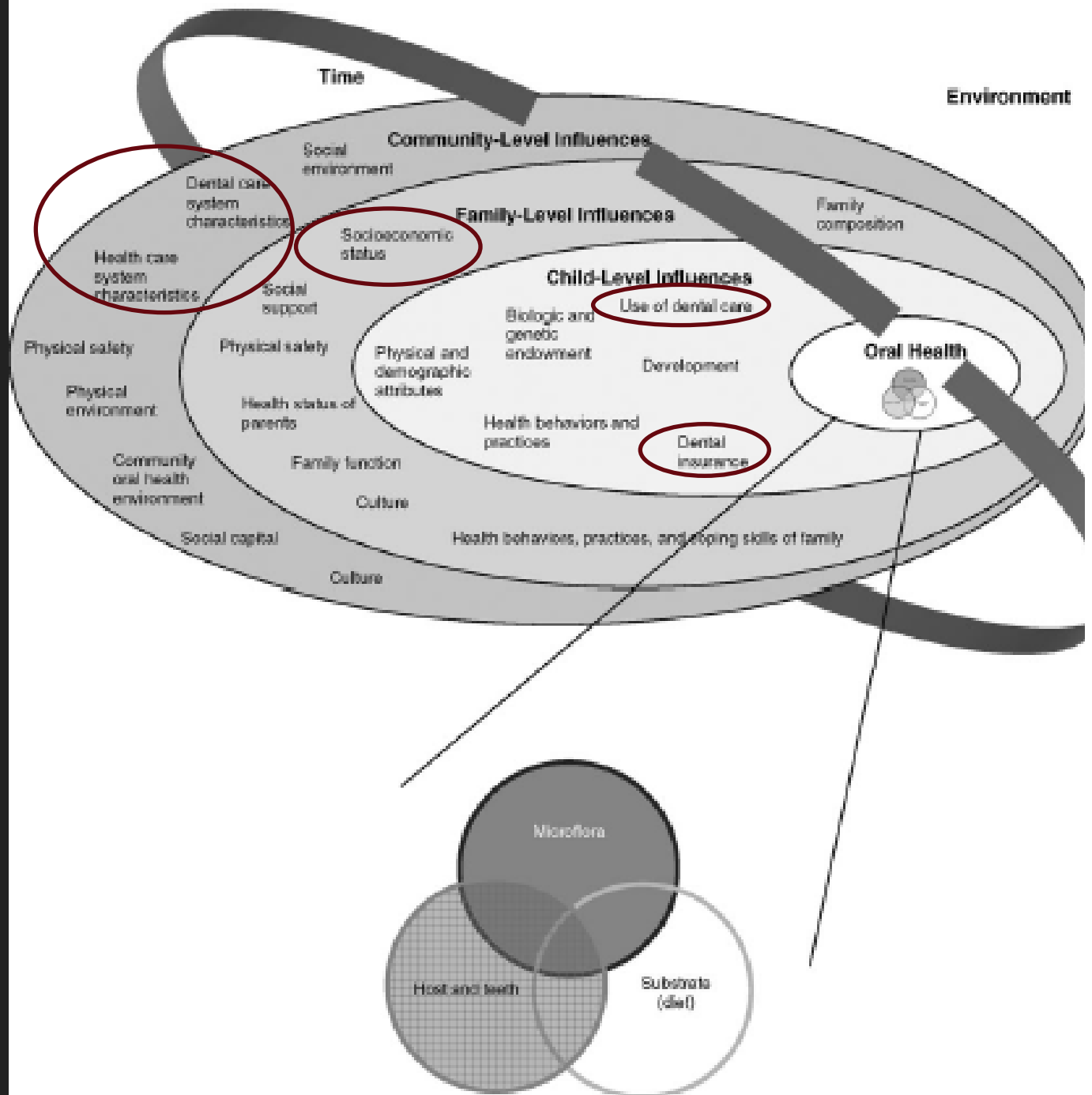
1. Federally established dental benefit parameters
2. Prenatal and early childhood dental education for parents



# METHOD



# FISHER-OWENS MODEL OF CHILDREN'S ORAL HEALTH





# STUDY DESIGN

Retrospective time-series

DV's: 1) dental visit, and 2) total dental expenditure

IV's: Based on Fisher-Owens et al. model

Child: age, sex, race/ethnicity, insurance status

Family: income level

Year: 2009-2012



# STUDY HYPOTHESES

1. The implementation of CHIPRA was associated with an increase in child dental service utilization.
2. The implementation of CHIPRA was associated with a decrease in the total Medicaid expenditures for child dental services.



# DATA SOURCE

Medical Expenditure Panel Survey,  
household component

Years 2009-2012



# STUDY CRITERIA

## INCLUSION

- 0-5 years of age
- Continuous Medicaid/CHIP enrollment (experimental group) or uninsured (control group) during survey period

## EXCLUSION

- >5 years of age
- Privately insured or non-continuous Medicaid/CHIP enrollment during survey period



# ANALYSIS METHOD

## Heckman's 2-Step procedure

1. Logistic regression of dental visit by predictors
1. Linear regression of dental expenditure by predictors

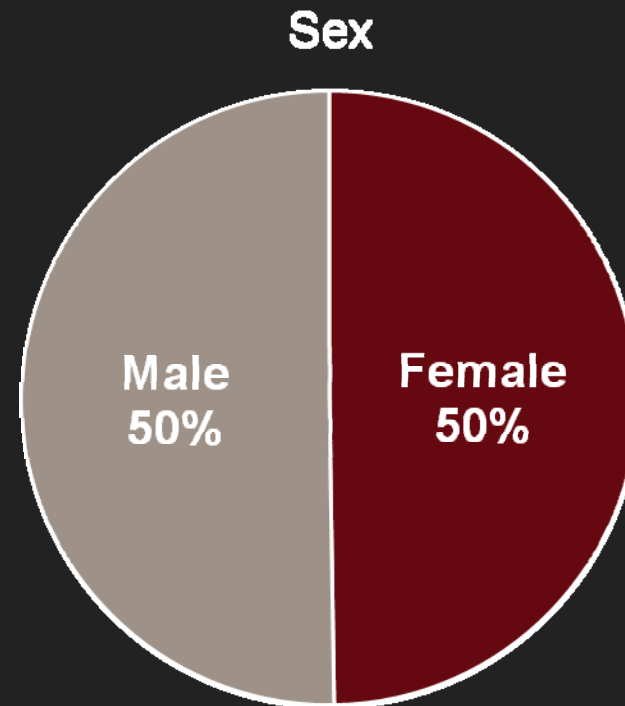
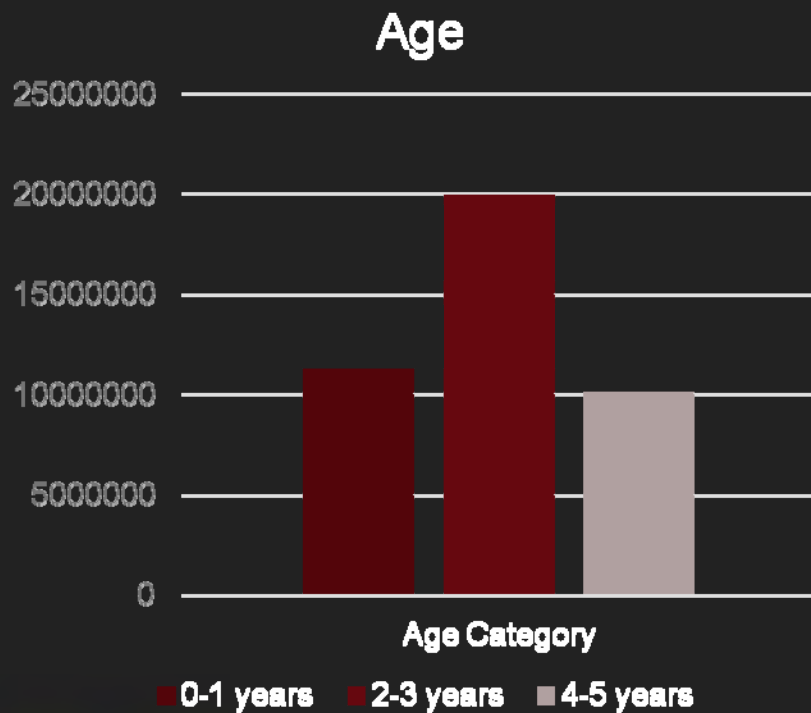


Mill's ratio generated in step 1  
Inverse Mill's ratio included in step 2

# RESULTS

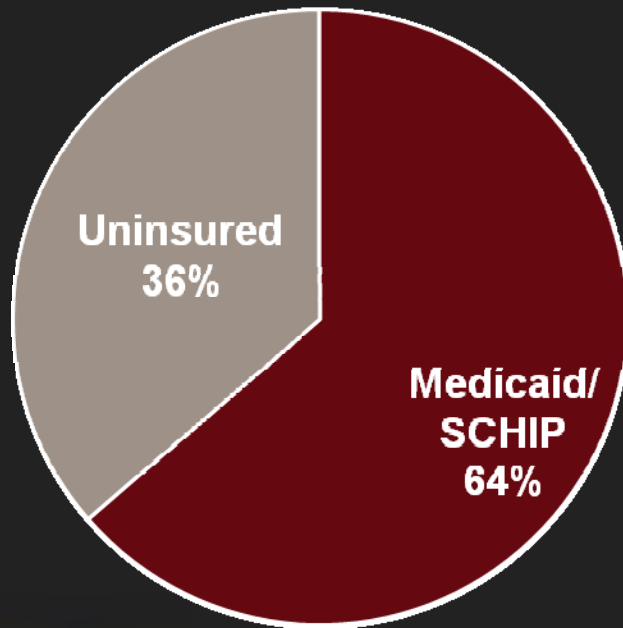


# CHILD CHARACTERISTICS

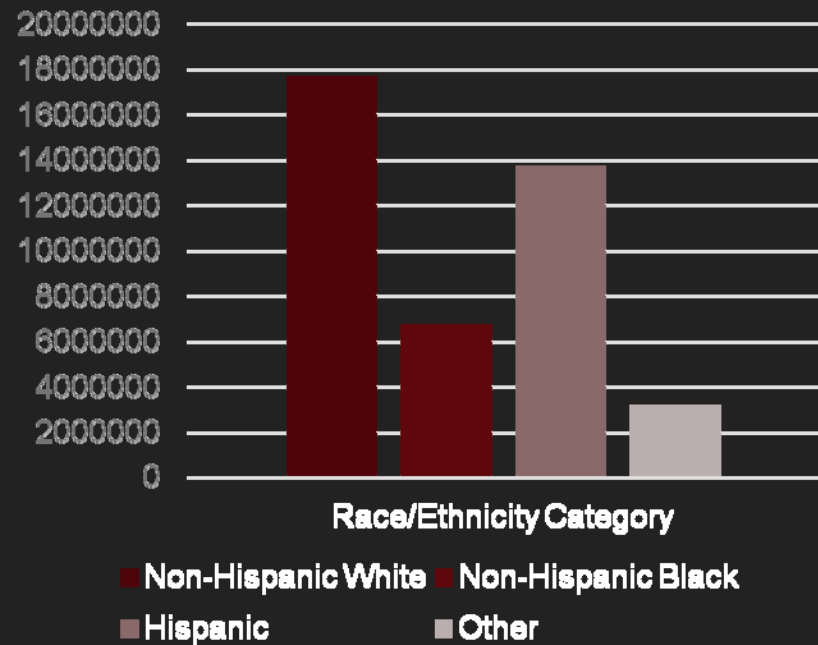


# CHILD CHARACTERISTICS

## Insurance Status



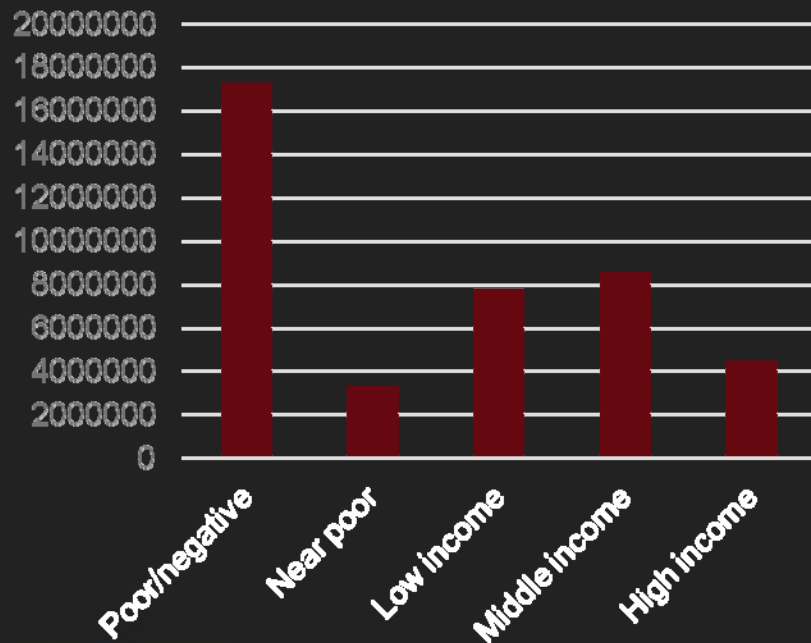
## Race/Ethnicity



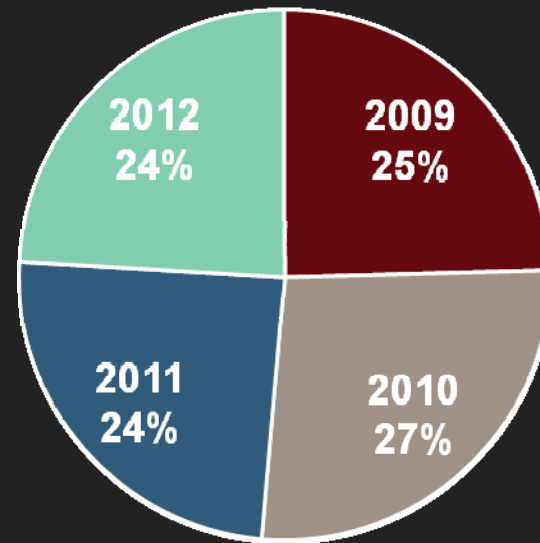


# FAMILY CHARACTERISTICS

## Family Income Level



## Year



# Weighted Odds Ratios of Dental Visit by Logistic Regression

1. Child characteristics		Odds Ratio	95% Confidence Interval
Age:	0-1 years	0.03**	(0.02, 0.04)
	2-3 years	0.13**	(0.10, 0.17)
	4-5 years	---	---
Sex:	Female	---	---
	Male	0.92	(0.79, 1.07)
Race/ethnicity:	Non-Hispanic white	---	---
	Non-Hispanic black	1.27*	(1.04, 1.56)
	Hispanic	1.41**	(1.18, 1.69)
	Other	1.33	(0.99, 1.79)
Insurance status:	Medicaid/SCHIP	1.60**	(1.34, 1.91)
	Uninsured	---	---
2. Family characteristics			
Family income level:	Poor/negative	1.11	(0.89, 1.39)
	Near poor	1.09	(0.79, 1.50)
	Low income	1.03	(0.80, 1.33)
	Middle income	---	---
	High income	1.03	(0.73, 1.44)
3. Year			
	2009	0.99	(0.81, 1.22)
	2010	---	---
	2011	1.21	(0.98, 1.50)
	2012	1.2	(0.97, 1.49)

Note: N=41,370,241; \*p<0.05; \*\*p<0.01

Data source: 2009-2012 Medical Expenditure Panel Survey

## Weighted Linear Regression of Dental Expenditure (≥ 1 dental visit)

1. Child characteristics		$\beta$	SE	p-value
Age:	0-1 years	-231.13	50.14	<.001**
	2-3 years	-97.59	20.34	<.001**
	4-5 years	---		
Sex:	Female	---		
	Male	-1.98	8.12	0.81
Race/ethnicity:	Non-Hispanic white	---		
	Non-Hispanic black	-9.77	11.32	0.39
	Hispanic	15.25	12.36	0.22
	Other	32.54	17.48	0.06
Insurance status:	Medicaid/SCHIP	110.69	12.92	<.001**
	Uninsured	---		
2. Family characteristics				
Family income level:	Poor/negative	-14.87	17.92	0.41
	Near poor	-31.76	17.68	0.07
	Low income	-15.25	17.43	0.38
	Middle income	---		
	High income	-9.25	15.36	0.55
3. Year				
	2009	-3.28	11.83	0.78
	2010	---		
	2011	29.91	8.3	0.01**
	2012	-2.49	8.3	0.76

Note: N=24,665,641; \*p<0.05; \*\*p<0.01

Data source: 2009-2012 Medical Expenditure Panel Survey

# DISCUSSION



# STUDY SIGNIFICANCE

Child age remains a barrier to dental care

No observed impact on dental utilization

CHIPRA may have contributed to increased frequency of dental service utilization among those already accessing services



# STUDY HYPOTHESES

1. The implementation of CHIPRA was associated with an increase in child dental service utilization.
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# POLICY IMPLICATIONS

CHIPRA requires improvement

Suggestions:

1. Increase dental service reimbursements
2. Reduce administrative burden on providers



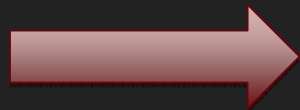
# CONCLUSION





# CONCLUSIONS

Future study of CHIPRA is necessary



It's too soon!

New policies specific to dental care are needed





**Dr. Hsien-Chang Lin**



**National Oral Health  
Conference**

# QUESTIONS?



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