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INTRODUCTION:

- Dental caries (tooth decay) is the single most common chronic childhood disease in Kentucky affecting 20% of preschoolers, 50% of second graders, and 75% of 15 year olds
- Dental problems are linked to inability to pay for dental care, lack of insurance, limited access to dental providers, and parental inability to take their children to dentists
- Mobile dental clinics that are tied with school-based dental programs is one approach to deliver oral healthcare

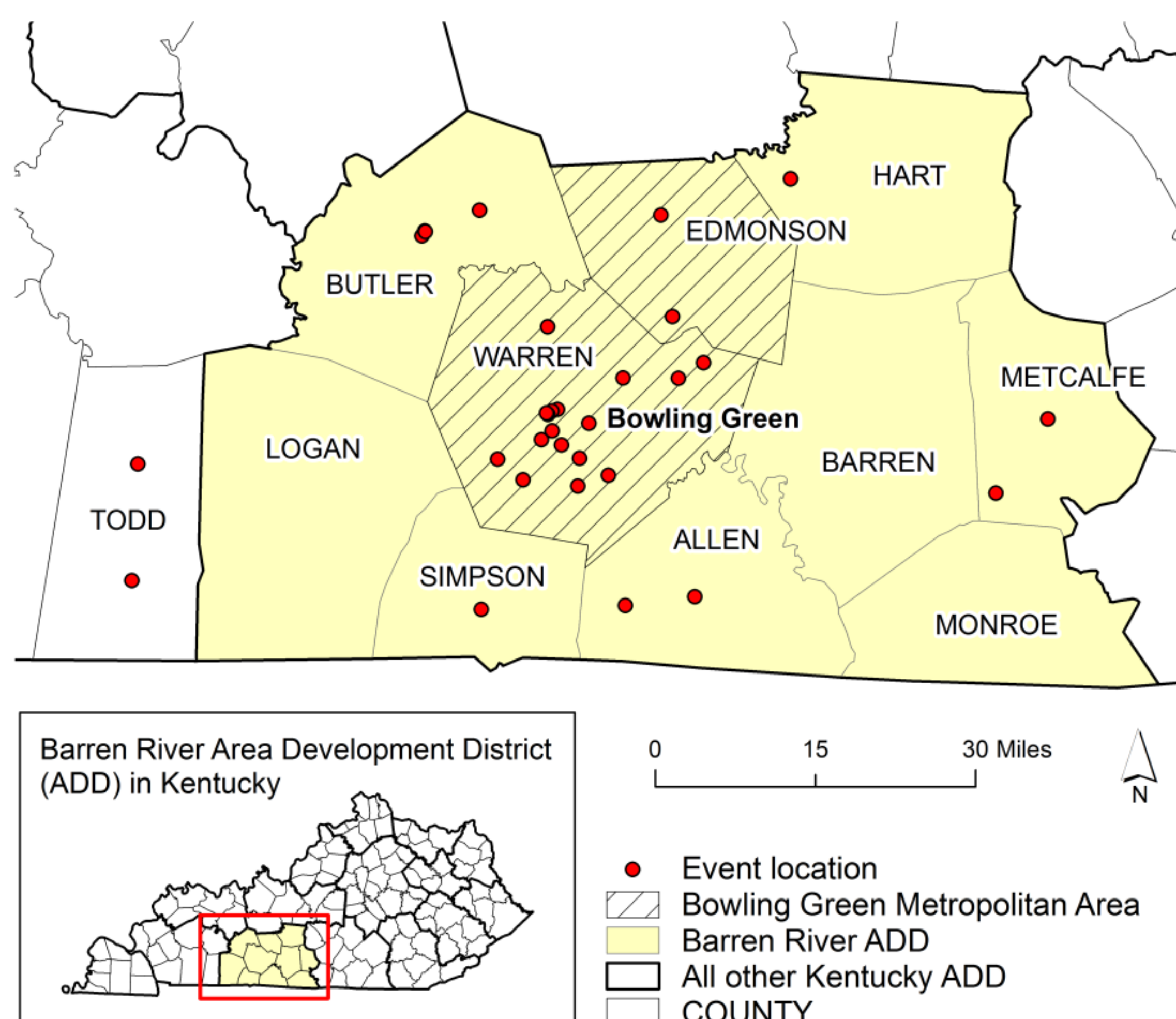
OBJECTIVES:

- To assess the factors which affect the number of caries found in children (1-18 years old) who received oral examinations provided by the Mobile Dental Unit (MDU) operated by the Institute for Rural Health (IRH) in South Central Kentucky between 2006 and 2011

DATA & METHODS:

- Study consists of data from IRH MDU, 2010 U.S. Census, and the Kentucky Dental Association.
- IRH MDU Data were collected by a dentist, a dental hygienist and supervised dental hygiene students
- Map of the IRH MDU service area (**Figure 1**)
- Characteristics of the IRH MDU sample (**Table 1**)
- Bivariate Association for Caries Severity Index (**Table 2**)
- Multivariate Logistic Regression of Caries Status (**Table 3**)

Figure 1:



MDU event locations in the IRH's service area

Table 1 Sample Characteristics (n= 3,451)

	Frequency	%
Caries Severity		
0 (No caries)	1309	38
1-3 caries	940	27.29
≥3 caries	540	15.67
Race		
White	2564	74.3
Non White	887	25.7
Gender		
Male	1718	49.78
Female	1733	50.22
Age		
0-6	697	20.2
6-13	2647	76.72
13-18	106	3.07
County Income		
>35,000	1931	55.95
<35,000	1515	43.9
	Mean	Std Dev
Provider Density	11.11	11.22
Education Level	78.13	11.72

Sample characteristics for children who received care through MDU for 2006-2011. County Income, Provider Density and Education Level are measured at County Level. Data for n=3,451. Provider density is calculated by the number of dentist found in each county divided by 10,000 people. Educational Level per County equals the percentage of people in the county who have high school diploma or higher

Table 2 Bivariate Association for Caries Severity Index

	0 caries	1 to 3 caries	≥3 caries	P-Value
Race				
White	953(45.62%)	734(35.14%)	402(19.24%)	0.013
Non White	356(50.86%)	206(29.43%)	138(19.71%)	
Gender				
Male	629(46.15%)	469(34.41%)	265(19.44%)	0.17
Female	680 (47.69%)	471(33.03%)	275(19.28%)	
Age				
0-6	353(64.30%)	137(24.95%)	59(10.75%)	0
6-13	946(43.57%)	767(35.33%)	458(21.10%)	
13-18	10(14.71%)	35(51.47%)	23(33.82%)	
Provider Density				
>10	654(41.18%)	571(35.96%)	363(22.86%)	
<10	655(54.54%)	369(30.72%)	177(14.74%)	0

Characteristics of children who receive care through MDU, comparisons by caries severity index (0, 1-3, ≥3 caries). Number in parenthesis refer to row%. Due to rounding error and missing variables some tables will not equal 100%

Table 3 Multivariate Logistic Regression of Caries Status

Characteristic	Odds Ratio (95% Conf Interval)
Race	
White	0.825 (0.679-1.003)*
Non White	Reference
Gender	
Male	1.107 (0.950-1.289) NS
Female	Reference
Age	
0-6	0.112 (0.555-0.228)***
6-13	0.240 (0.1220-0.474)***
13-18	Reference
County Income	0.448 (0.126-1.596) NS
Provider Density	1.039 (0.979-1.102) NS
Education Level	0.969 (0.948-0.989)***

Note CI= Confidence Interval
Data are odd ratio (95% CI). Odds ratio > 1 indicates likelihood of caries.
The following symbols/letters specifies significance level;
*** significant @ p<0.001;
** significant @ p<0.01;
* significant @ p<0.05;
NS = Not Significant
N= 3,451

FINDINGS & CONCLUSIONS:

- Race, Age, and County Education level have significant relationship with caries status.
- County Education Level has indirect relationship with caries status.
- County education level which is a proxy for the availability of resources is a key determinant in reducing caries status in children, however future research is needed.
- Future research will focus on factors which possibly affects caries severity index.

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