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**Environmental Health Section**  
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# **Children's Environmental Health Organization**

- **Program Manager**
- **Field Supervisor**
- **10 Regional Consultants**
- **Surveillance Coordinator**
- **Data Manager**
- **4 Epidemiologists**

# Environmental Health Section

- **Children's Environmental Health**
  - **Childhood Lead Poisoning Prevention (CDC/Federal Grant)**
  - **Child Care & School Sanitation**

# Children's Environmental Health (Regional Staff):

- **Kimly Blount, Field Supervisor**
  - **Brenda Bass**
  - **Donna Gilbird**
  - **Robert Hunt**
  - **Carissa Moore**
  - **Nykesse Roberts**
  - **Tonya Zimmerman**
  - David Brown**
  - Barrette Gregory**
  - Alan Huneycutt**
  - Rob Pearsall**
  - Brittany Stevenson**



**Licensing**  
Division of  
Child Development



**Sanitation**  
Division of Public Health  
Environmental Health Section

# Local Health Departments: Child Care Sanitation

- **Separate Authorization**
- **Inspection each 6 months**
- **Limited enforcement capacity**



# History

- **Health-based Rules since 1991**
- **Program Reorganization in 1996**
- **Child Care Law Amended in 1997**
- **Administrative Rule Amendments 2006/2007**
- **Child Care Water Lead Testing Rule Amendment 2019**

# Administrative Rules

## 18A NCAC 15A .2800

- **Definitions**
- **Plan Review**
- **Handwashing**
- **Food Supplies**
- **Food Storage/Protection**
- **Food Preparation**
- **Food Service**
- **Food Service Equipment**
- **Kitchen Specifications**
- **Cleaning/Sanitizing**
- **Equipment Storage**
- **Water Supply**
- **Lead Poisoning Hazards**
- **Toilets**
- **Lavatories**
- **Diaper Changing**

# Administrative Rules (cont.)

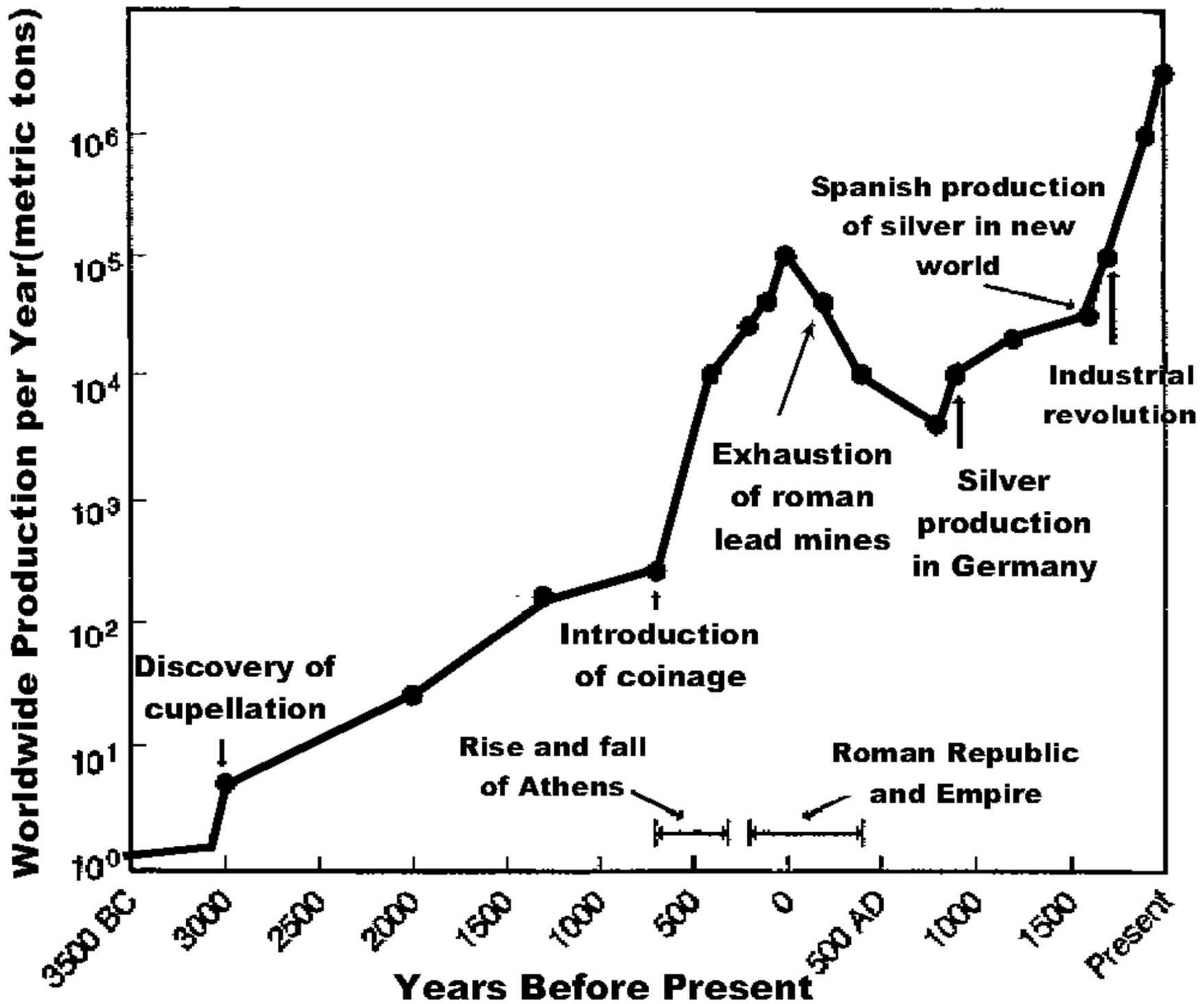
- **Storage**
- **Beds/Cots/Mats/Linens**
- **Toys/Furniture**
- **Personnel**
- **Floors**
- **Walls/Ceilings**
- **Lighting/Thermal Environment**
- **Appeals Procedure**
- **Communicable Diseases**
- **Wastewater**
- **Solid Wastes**
- **Animals/Vermin Control**
- **Outdoor Learning Environment**
- **Swimming Pools**
- **Compliance/Inspections**
- **Mildly Ill Children**

# **New Rule Amendment**

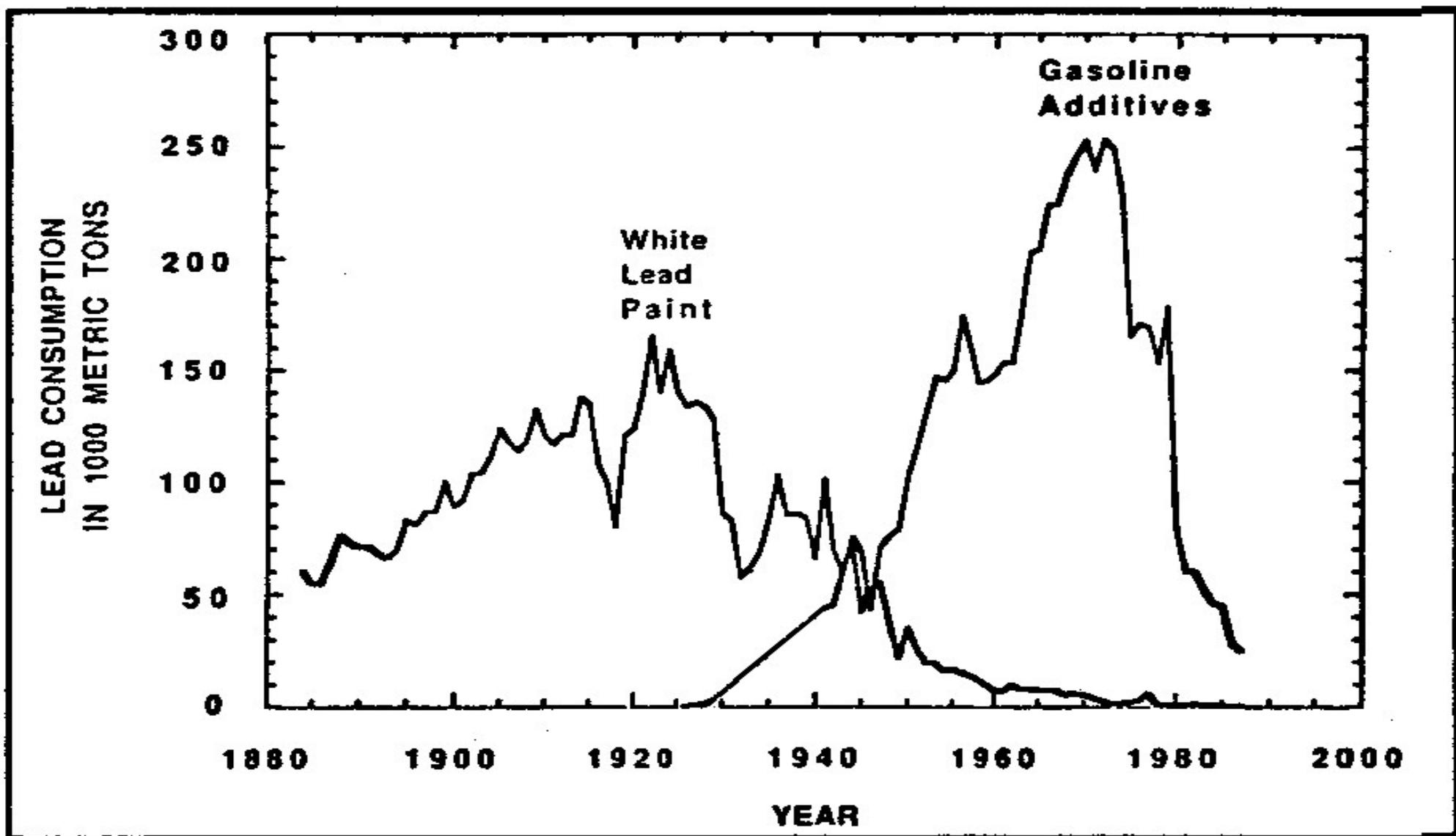
**Effective October 1, 2019**

- **Amendment to Child Care Sanitation Rule .2816**
- **Testing of Water in Child Care Centers**
  - **Required Testing**
  - **Follow- up testing**

**This amendment requires that all licensed child care centers test all drinking water faucets and food preparation sinks for lead contamination within one year, and new centers must test upon application for a license. After that, centers will need to test once every three years.**



**Historical record of industrial lead production in last 5,000 years**



**Figure 2.** United States lead consumption, 1880-1987. Reprinted with permission from Clark S et al. Urban lead exposures of children in Cincinnati, Ohio. *Chemical Speciation and Bioavailability*. 1991;3:163-171. Copyright © 1991.

# Sources of Lead

**Lead-Based Paint, Dust & Soil**

**Air Pollution**

**Drinking Water**

**Traditional Medicines**

**Lead-Glazed Ceramics**

**Parental Occupations & Hobbies**

**Food (Mexican Candy)**

**Vinyl Miniblinds**

**Lead-Contaminated Toys**

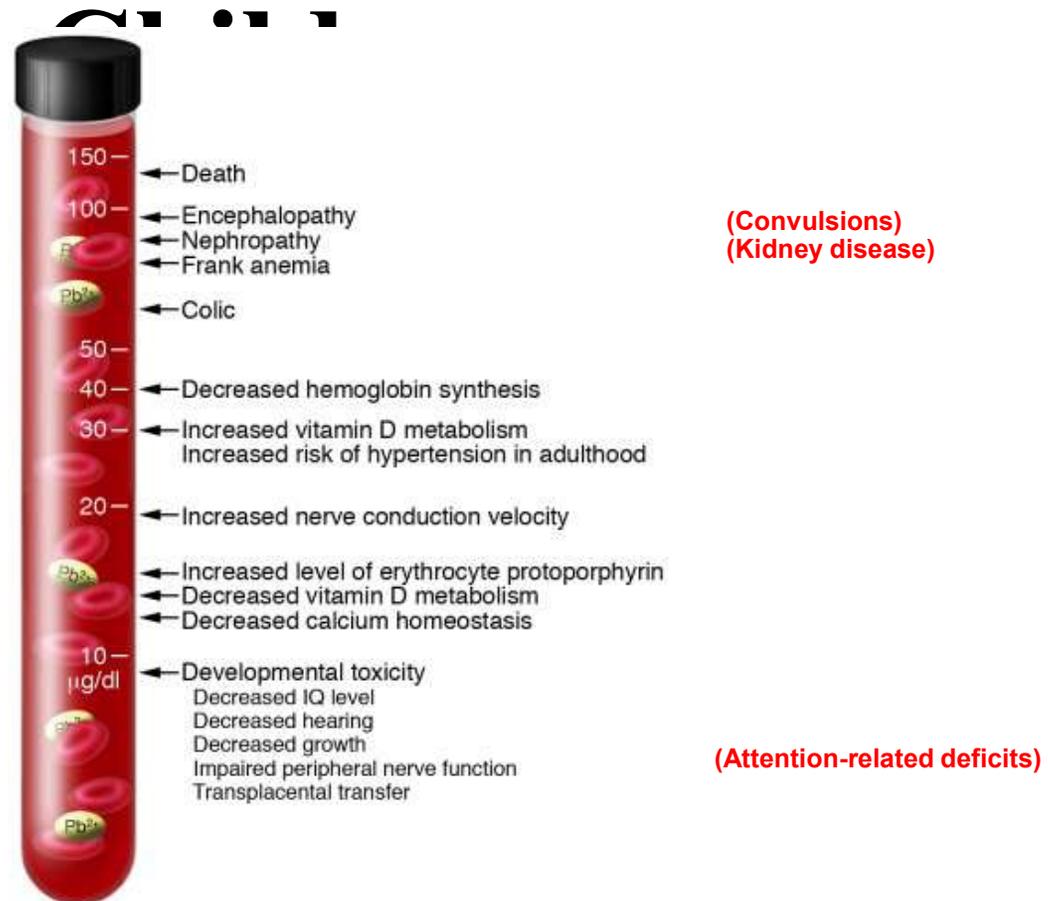


# Children are at Greater Risk

- **hand to mouth activity**
- **greater sensitivity to lead**
- **absorb more lead**



# Health Effects of Lead in



Bellinger DC, Bellinger AM. Childhood Lead Poisoning: The Torturous Path from Science to Policy. J Clin Invest. 2006 Apr;116(4):853-7. <http://www.jci.org/articles/view/28232>

# **Childhood Lead Poisoning Costs To The State:**

**Direct Medical & Public Health Costs**

**Special Education**

**Juvenile Justice**

**Lost Future Earnings**

# NC Childhood Lead Poisoning Prevention Program

State Childhood Lead Surveillance Team and Regional EHSs  
Division of Public Health/Environmental Health Section

Data management

Coordinate training & response

Environmental investigation & sampling

Local Health Department EHSs/Lead Nurses

Blood Lead Testing

Environmental investigation & sampling

Clinical case management

Education

Primary Care Providers

Risk screening

Blood Lead Testing

Clinical evaluation & interventions

# **CDC Terminology**

**New Reference Value:**

**3.5  $\mu\text{g}/\text{dL}$  or greater**

## **North Carolina State Law**

**Elevated blood lead level (EBL):**

**5  $\mu\text{g}/\text{dL}$  or greater**

**Confirmed lead poisoning:**

**10  $\mu\text{g}/\text{dL}$  or greater**

# **CDC Screening Guidelines**

**Universal assessment/targeted screening at 12 and 24 months or at first entry before age 6**

**In North Carolina, mandatory blood lead testing for Medicaid, WIC, & HealthChoice**

**Analysis at no charge through the State Laboratory**



# Blood Lead Testing of Medicaid-Enrolled Children

Report for Individual Medicaid Providers  
for the period January 1, 2007 through December 31, 2007

**Provider** WENDOVER PEDIATRICS PA  
1307 WEST WENDOVER AVENUE  
GREENSBORO NC 27408-8117

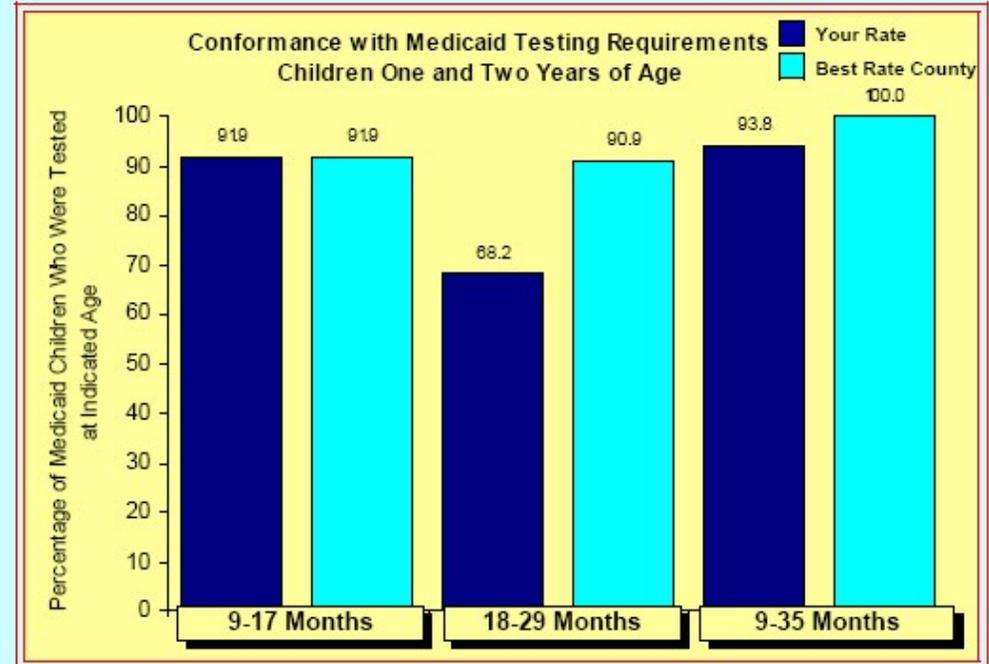
**Your Overall Testing Rate:** <sup>(1)</sup> **93.8 %**

## Your Testing Rate Information

Testing Numbers and Rates Among Medicaid Children	Age <sup>(2)</sup> 1	Age <sup>(2)</sup> 2
Number of Children Seen	458	365
Number of Children Tested	421	249
<b>Testing Rate (%)<sup>(3)</sup></b>	<b>91.9</b>	<b>68.2</b>
Number of Children Seen <sup>(4)</sup> But Not Tested	37	116

**Explanation:**

- Overall testing rate includes children ages 9-35 months.
- Age 1 includes children between 9-17 months of age. Age 2 includes children between 18-29 months of age.
- Percentage of Medicaid children who were seen by your practice and received blood lead test(s) during the indicated age by your practice or elsewhere.
- Number of children who were seen by your practice but were not tested during the indicated age.



## Did You Know That...

Federal rules require that ALL CHILDREN who are enrolled in Medicaid receive a blood lead test at:

- 12 months of age and
- 24 months of age
- children between ages 36-72 months must be tested if they have not previously been tested

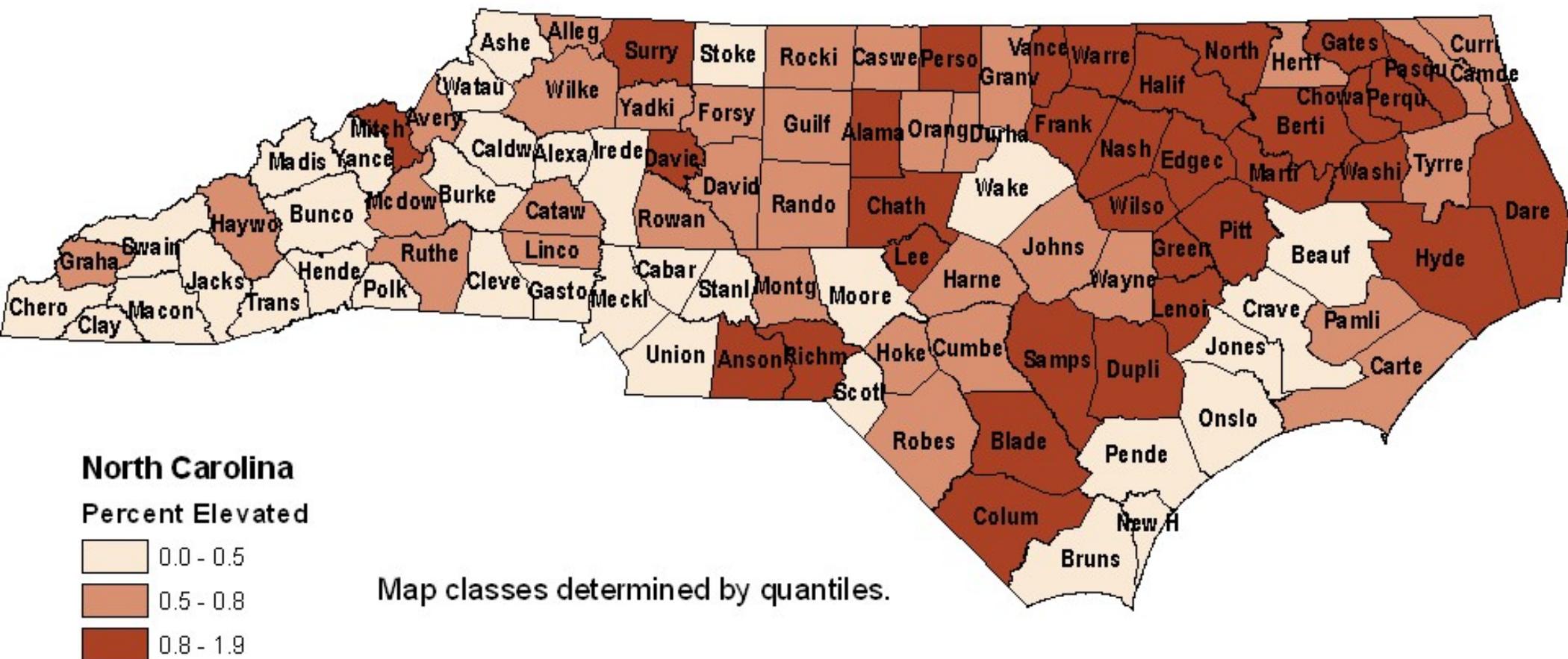
2,071 North Carolina children were identified with lead poisoning ( $\geq 10 \mu\text{g/dL}$ ) during the previous five years (2002-2006)

- 82% of these children were enrolled in Medicaid

**Characteristics and Estimated Prevalences of North Carolina Children  
Tested<sup>1</sup> for Lead Poisoning During 2005-2009, Ages 6 months to 6 years**

Variable	Testing Population N (Percent of Total)	Blood lead level <sup>2</sup> (µg/dL)	
		N (Percent) ≥10	≥20
Age	6-12 months	37,933 (5.3)	180 (0.5)    35 (0.1)
	1 year	348,436 (48.4)	2,114 (0.6)    313 (0.1)
	2 years	214,779 (29.8)	1,551 (0.7)    213 (0.1)
	3 years	42,293 (5.9)	356 (0.8)    55 (0.1)
	4 years	44,674 (6.2)	247 (0.6)    40 (0.1)
	5 years	32,142 (4.5)	180 (0.6)    26 (0.1)
Race/Ethnicity <sup>3</sup>	Black	177,918 (24.7)	1,499 (0.8)    197 (0.1)
	White	308,649 (42.9)	1,634 (0.5)    240 (0.1)
	Hispanic	127,975 (17.8)	842 (0.7)    149 (0.1)
	Native American	8,784 (1.2)	70 (0.8)    12 (0.1)
	Other	21,716 (3.0)	261 (1.2)    43 (0.2)
	Unknown	75,215 (10.4)	322 (0.4)    41 (0.1)
Sex	Male	354,316 (49.2)	2,487 (0.7)    405 (0.1)
	Female	358,221 (49.7)	2,119 (0.6)    272 (0.1)
	Unknown	7,720 (1.1)	22 (0.3)    5 (0.1)
Residence	Rural County	466,322 (64.7)	3,314 (0.7)    486 (0.1)
	Urban County	253,935 (35.3)	1,314 (0.5)    196 (0.1)
Income <sup>4</sup>	Medicaid	380,258 (67.9)	3,052 (0.8)    446 (0.1)
	Non-Medicaid	179,436 (32.1)	839 (0.5)    121 (0.1)
<b>Overall</b>	<b>720,257 children tested</b>	<b>4,628<sup>▼</sup> (0.6)</b>	<b>682 (0.1)</b>

# Percent of 1- and 2-Year Old Children with Blood Lead Level $\geq 10$ ug/dL 2005-2009



# Multi-tier Approach to Follow-up

**diagnostic testing / periodic retesting /  
health education & nutritional counseling**  $\geq 3.5 \mu\text{g/dL}$

**environmental investigation (required to  
be offered)**  $\geq 5 \mu\text{g/dL}$

**medical evaluation / environmental  
investigation & remediation (mandatory)**  $\geq 10 \mu\text{g/dL}$

**chelation therapy**  $\geq 45 \mu\text{g/dL}$

# North Carolina Law



- **laboratory reporting of all blood lead test results**
- **investigation of confirmed lead poisoning and EBL cases**
- **remediation of identified hazards for confirmed lead poisoning cases**

# **Other State & Federal Lead Laws**

- Abatement (EPA/DHHS)**
- Renovation, Repair & Painting (EPA/DHHS)**
- Disclosure (EPA/HUD)**
- Lead Hazard Control (HUD)**
- Worker Protection (OSHA)**

