

Study Site



Children's Healthcare of Atlanta at Hughes Spalding

- Primary Care Clinic Site

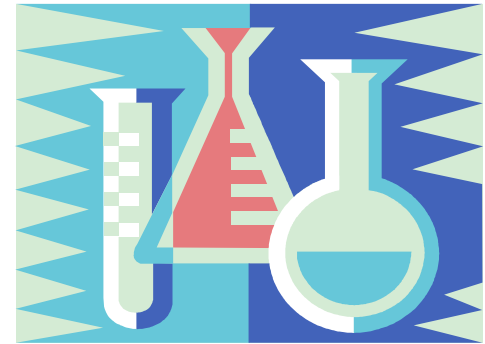
98% Medicaid Population

- Continuity Clinic site for pediatric attendings and residents at Emory University School of Medicine

Methods

- Oral fluid samples collected on 500 children aged 6 months old to 5 years old
- Children having venous blood lead levels drawn for routine screening purposes were eligible.

Methods



- The blood lead levels were measured using standard methodology at a CLIA certified laboratory.
- The oral fluid lead levels were measured using an ICP-MS (DRC II, PerkinElmer Sciex).
- Oral fluid samples from 50 children were gathered twice to provide internal controls, but were only counted once.

Results



- Five hundred patients agreed to enroll.
- No eligible patient declined to participate.
- 474 patients had both blood and oral fluid samples available for analysis.
- 26 did not have blood available.

Determining Cut-Off values

Cut – off points	Sensitivity	Specificity
2 $\mu\text{g/dL}$	0.84	0.96
3 $\mu\text{g/dL}$	0.92	0.99
4 $\mu\text{g/dL}$	0.96	0.99
5 $\mu\text{g/dL}$	0.93	0.99
6 $\mu\text{g/dL}$	0.88	1
7 $\mu\text{g/dL}$	0.85	1

Conclusions



- Oral fluid may be a reliable medium to use when screening children for lead exposure for levels $< 4\text{mcg/dL}$.
- Oral fluid lead levels $\geq 4\text{mcg/dL}$ should be confirmed by a venous blood sample.
- The sample size in the $\geq 4\text{mcg/dL}$ group ($n=19$) was inadequate to draw conclusions on accuracy at higher lead levels.
- Further studies are being conducted.

Conclusions

The use of oral fluid for lead screening should improve screening success by:

- Reducing parental refusal rates.
- Eliminating inability to obtain an adequate sample.
- Decreasing sample collection times.
- Allowing for large groups of children to be screened more quickly and easily than conventional methods.