Assessing the Awareness of Lead Hazards in the Greater Burlington Area

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Introduction

- Lead is a common heavy metal found in and around homes built before 1978, which comprises more than 80% of the housing stock in Burlington and Winooski. The Burlington Lead Program renovates homes to reduce lead-based paint hazards, it also focuses on community outreach to educate parents about home lead hazards.
- Lead exposure during infancy and childhood resulting in blood lead levels as low as 5μg/dL, can have a number of deleterious effects on development including lowering IQ, attention deficit, language development, impaired fine and gross motor skills, but any level of lead can be harmful.
- Housing renovations to reduce lead hazards are correlated with a consistent decline in blood lead levels in children over time. Targeted, family-based intervention has also been shown to lead to a reduction in children’s blood lead levels.
- Our study aims to assess baseline community understanding in Chittenden County of potential lead hazards in and around the home to identify at-risk populations eligible for potential intervention through this program and how to appropriately target communication to these families.

Methods

- A 10 question survey was generated to assess lead based knowledge as it relates to demographic background in Burlington, VT.
- Inclusion criteria for eligible survey takers include residents of the Chittenden County area.
- 123 Chittenden County residents were randomly surveyed at health centers, child care centers and grocery stores within Burlington, VT.
- Scores were treated as continuous variables, demographically grouped and analyzed using non-parametric statistical analysis (Mann-Whitney & Kruskal-Wallis).
- Individual questions were treated as dichotomous variables.

Results

- Performance of lead based knowledge survey stratified by individuals earning <$60,000 and those who had completed less than a graduate degree scored statistically lower than their higher-earning and graduate-level educated peers on measures of overall lead knowledge and the symptoms of lead poisoning.
- 54.5% were aware of the Burlington Lead Program’s assistance program, showing there is room for the HUD to improve their community outreach.
- Home ownership indicated the greatest difference in performance, as home owners performed significantly better on five of the ten questions, compared to their non-home-owning peers.
- Limitations of the study include sampling bias, and small sample size. Future studies should have a larger sample size and should focus on surveying families with children.

Conclusion

- Lower known lead poisoning symptoms and affordable home interventions that decrease lead exposure should be emphasized to the community regardless of demographic features.
- High risk groups requiring targeted education include those who rent, have lower income and lower education levels.
- Primary Care Providers could play a larger role in providing lead poisoning education to their patients.
- Additional efforts should be made to advertise services offered by the Burlington Lead Program.

References