1) Assess possible associations between SDOH and elevated pediatric BLLs

Introduction

Social determinants of health (SDOH) include a broad range of considerations that influence health outcomes in the general population (1). These factors include access to quality healthcare and education, community living standards, and environmental and economic conditions (2). While SDOH have been widely studied and linked to negative health outcomes (3), successful prevention efforts are lacking in low-income communities (4,5). Understanding risk factors can help inform childhood lead poisoning prevention, funding, and health policy (6). This study will continue collecting data for one calendar year. Among the participants with elevated BLLs, all families have a high school education. There is not enough data to make any conclusions about income at this time. Future research will explore this and other associations.

Materials and Methods

Sample Collection

- Blood for sample is collected from a finger stick
- Capillary tube for sample collection

Sample Collection

- Capillary tube is placed in a rack and a plunger is used to expel the fluid

Sample Collection

- The sample is analyzed via the “Lead care II” machine

Sample Collection

- Results are reported as “low”
- Results are reported as “high”

Results

- Sixty-nine children were tested. 91.3% of children recorded BLLs <3.3 µg/dL (n=63), while six children tested positive (>5 µg/dL) (n=6).

Conclusions

- Pediatric blood lead levels are still a health concern in the United States. Concerning trends in Chemung County have developed over time. This clinic will continue to collect data for one calendar year. Among the participants with elevated BLLs, all families have a high school education. There is not enough data to make any conclusions about income at this time. Future research will explore this and other associations.

References

1. Kermack, S. N. and Goyen, V. Childhood lead poisoning in Chemung County: building local capacity and coordination (2009) University of Rochester Environmental Health Sciences Center.

Acknowledgements

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Discussion

- Preliminary pediatric blood lead levels have demonstrated mixed results. Six participants measured above the safety cutoff of 5µg/dL. Some parents self-reported that their children had at least one prior positive blood lead test. Future surveys should include a question about previous testing to assess trends over time. However, the rate of elevated BLLs is lower in our population than previously measured in Chemung County, NY.

- Combined family income does not seem to be predictive of blood lead level outcome at this time.

- According to a 2019 report from the University of Rochester Finger Lakes Coalition to Stop Lead Poisoning, 10 percent of the children tested in Chemung County had elevated blood lead levels. This is the highest in the state. Therefore, continued testing efforts should record elevated BLLs as the clinic continues its screenings.

- This study will continue collecting data for one calendar year. Among the participants with elevated BLLs, all families have a high school education. There is not enough data to make any conclusions about income at this time. Future research will explore this and other associations.

Conclusions

- Preliminary pediatric blood lead levels are still a health concern in the United States. Concerning trends in Chemung County have developed over time. This clinic will continue to collect data for one calendar year. Among the participants with elevated BLLs, all families have a high school education. There is not enough data to make any conclusions about income at this time. Future research will explore this and other associations.

- Research is ongoing about current elevated blood lead levels as well as how social determinants of health impact risk of elevated results. Understanding risk factors can help inform childhood screening, funding, and health policy.

Materials and Methods

Dataset collected via the EOP Head Start program through the ACCEL Community Health Clinic from May 19 – September 22, 2022. Blood samples were collected from a finger stick collection via capillary tube. The sample was analyzed using the Lead care II machine. Results were categorized into the following categories: <3.3 µg/dL (Low), 3.3 - 6.9 µg/dL (measured), and >6.9 µg/dL (High). Demographic information was collected from all families of the pediatric participants.

Table 1

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<th>Demographic Description of Participants (N=69)</th>
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