



Improving Lead Screening among Refugee Children: A Nursing-Led Quality Improvement Process

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Background

- Refugee children are at higher risk for elevated blood lead levels due to increased exposure to environmental lead hazards in their country of origin, exposure in low income housing after resettlement, and exposure to lead in some foods, cosmetics, and medicines.
- CDC advises screening all children 6 months to 16 years on arrival and children 6 months to 6 years again within 6 months.
- Recent data showed University of Virginia International Family Medicine Clinic (IFMC) – a clinic caring for refugees in Central Virginia- lacked a reliable process for screening and follow up (Seifu, 2020).
- Initial efforts by the RN Care Coordinator (RNCC) to increase lead screening and follow up by adding notes in the Electronic Medical Record (EMR) Specialty Comments and Problem List were unsuccessful.



Methods

- A protocol was created utilizing clear guidance from CDC and Virginia Department of Health allowing the RNCC to order lead level, complete an environmental exposure review and provide nutrition education.
- RNCC runs monthly report to identify all children ages 6 months-16 years seen for IFMC Initial Visit and adds children needing follow up to a patient list in the EMR.
- Using EMR patient list, RNCC orders lead levels as needed, contacts families to provide reminders to return to the lab, and sends reminder to providers who will see children due for lead levels at upcoming clinic appointments.

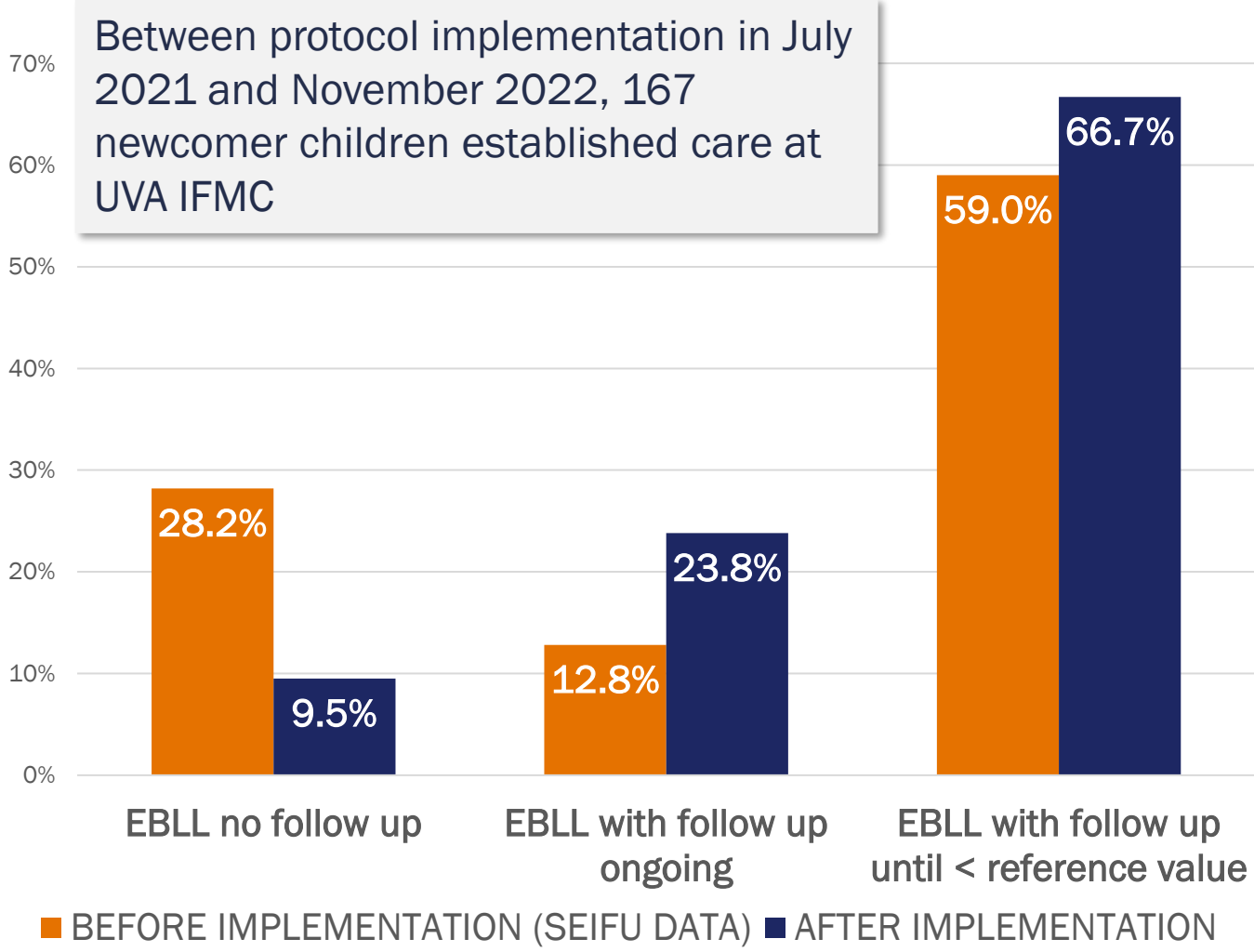


Fig 1. Children 6 months-16 years with EBLL Before and After Implementation

Results

Children 6 months-16 years with elevated blood lead levels (EBLL)

- 9.5% had no follow up compared to 28.2% before implementation.
- 90.5% of children with EBLL either had follow up until below the reference value (66.7%) or had follow up ongoing (23.8%) as compared to 71.8% before

Children 6 months-6 years with a blood lead level below the reference value at the Initial Visit

- 85.1% had a follow up lead level compared to 15.8% before implementation.
- 14.9% had no follow up BLL compared to 84.2% before

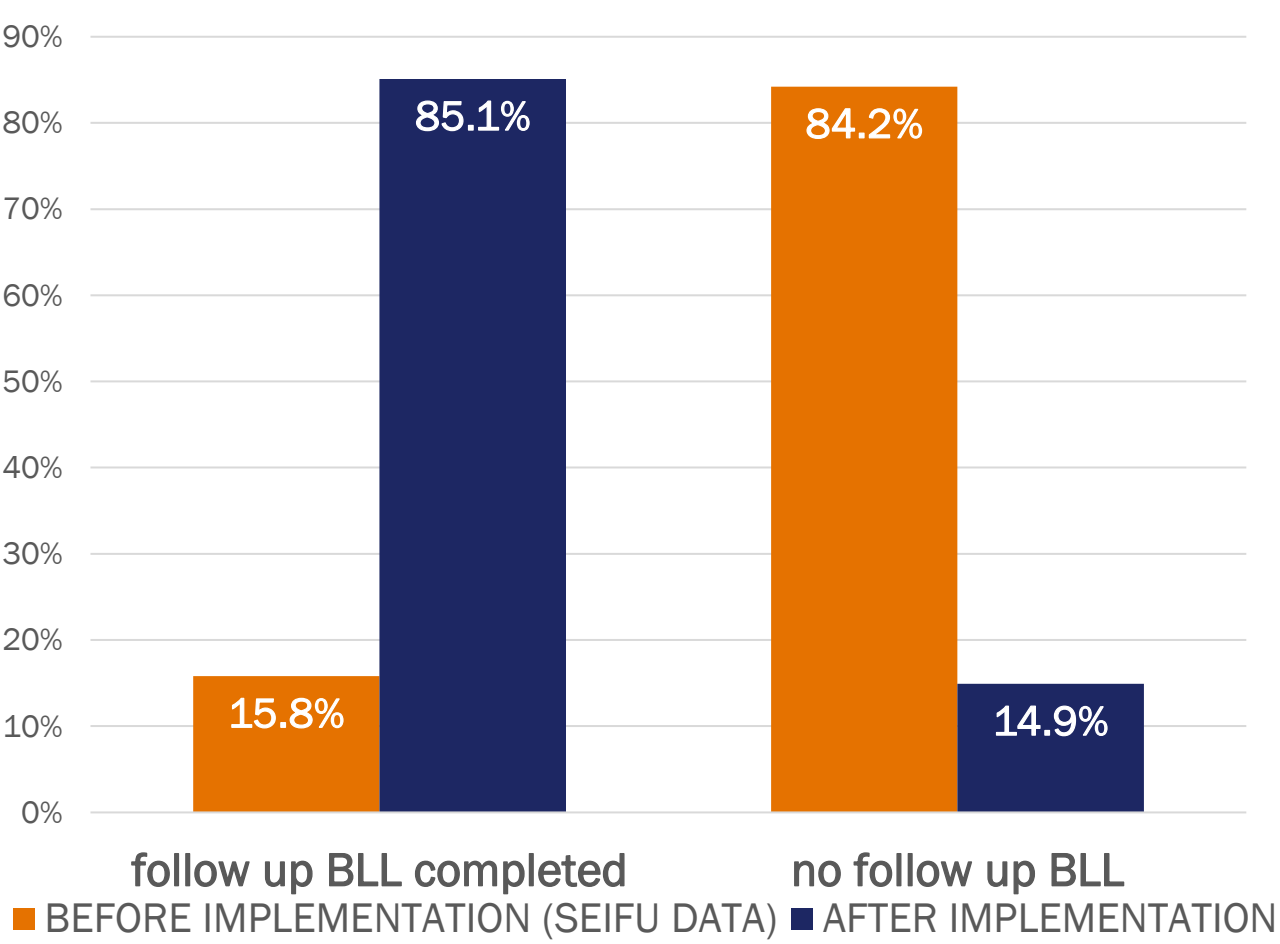


Fig 2. Children 6 months-6 years with BLL < reference value at Initial Visit

Protocol

Lead Lab Value (µg/dL)	<3.5	3.5–9	10–19	20–24	25–44	≥ 45
Environmental Exposure Evaluation		Environmental exposure history to identify potential sources of lead.	Environmental exposure history to identify potential sources of lead and coordinate with local Health Department as they case manage and complete home visit as indicated.	Coordinate with local Health Department who will be doing investigation and home visit.	Coordinate with local Health Department who will be doing investigation and home visit.	
Lead Monitoring	Order follow up blood lead monitoring (LAB6126) 3-6 months after initial testing for all refugee and SIV infants and children ≤ 6 years	Order follow up blood lead monitoring (LAB6126) in 3 months X 2 and every 6-9 months until blood lead level <3.5 µg/dL	Order follow-up blood lead monitoring (LAB6126) within 30 days (VA guideline) then monitor every 1-3 months until BLL declining. Monitor every 3-6 months until blood lead level <3.5 µg/dL	Order follow-up blood lead monitoring (LAB6126) within 30 days (VA guideline) then monitor every 1-3 months until blood lead level <3.5 µg/dL	Order follow up blood lead monitoring (LAB6126) within 2 weeks to one month until BLL declining then every one month months until blood lead level <3.5 µg/dL	LIP to develop follow-up plan and place orders.
Nutritional Needs		Provide nutritional counseling related to calcium and iron intake	Provide nutritional counseling related to calcium and iron intake If Hemoglobin or hematocrit below normal and/or RBC microcytic order -iron and transferrin (LAB829)	Order Lab work: – Iron and transferrin (LAB829) – CBC (LAB294)	Order Lab work: – Iron and transferrin (LAB829) – CBC (LAB294)	
Diagnostics				Order Abdominal X-ray (IMG7615)	Order Abdominal X-ray (IMG7615)	

Conclusions & Recommendations

- A nurse driven protocol can improve detection and follow up for elevated lead levels for newcomer children.
- The systematic chart review also provides an opportunity to identify the need for catch-up vaccines and follow up on referrals and appointment no-shows.
- Upcoming clinic appointments provide an opportunity to obtain lead levels that are due

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References available on handout

