

COLLABORATE AND CONQUER: KEY TO EFFECTIVELY MITIGATE LEAD EXPOSURE

AUTHORS

Alfi Sina Vinci¹, Budi Susilorini¹, Edwin Siswono³, Lavanya Nambiar², Lina Noviandari¹

¹ Yayasan Pure Earth Indonesia

² Pure Earth

³ Vital Strategies

Correspondence email: budi@pureearth.org

INTRODUCTION

Effective government and community engagement is key to driving health equity, fostering local ownership and can have a transformational impact on the vulnerable communities in a society. Engagement from the outset prevents failure of programs and ensures that the solutions that are implemented can sustain themselves after the external support ends. Therefore, seeking government approval and collaborating with the relevant government institutions remains critical as part of an effort to strengthen the health system while protecting the children from lead exposure in Indonesia.

As part of this effort, Yayasan Pure Earth Indonesia (PE) has strengthened its engagement with the Ministry of Health of the Republic of Indonesia since 2022 and solidified the collaboration in 2023 by signing a partnership to strengthen health system to reduce heavy metal exposure. The embodiment of this collaboration includes - in collaboration with Vital Strategies (VS) - an inventory of national laboratory capacity to monitor lead exposure. Furthermore, PE and VS collaborated with the National Research and Innovation Agency (BRIN) carried out the first ever blood lead surveillance (BLS) in Indonesia.

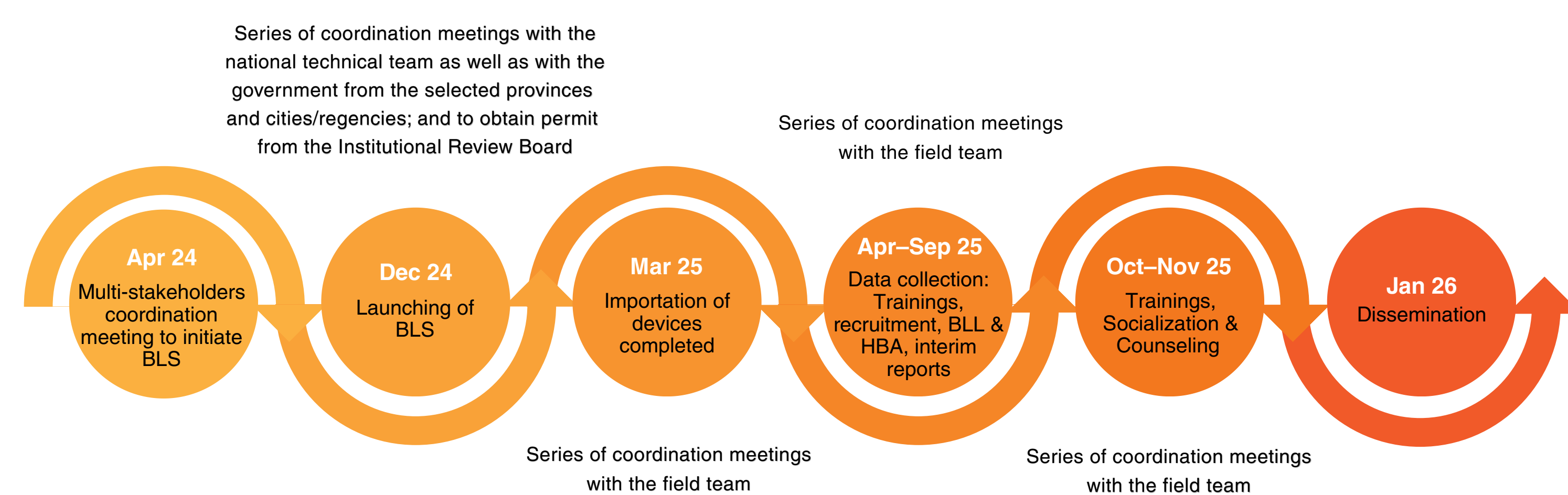
OBJECTIVES

Monitoring blood lead level (BLL) in Indonesian children and understanding the increasing prevalence of BLL in children, evaluating existing capacity of resources, and testing the facility of implementing national BLS.

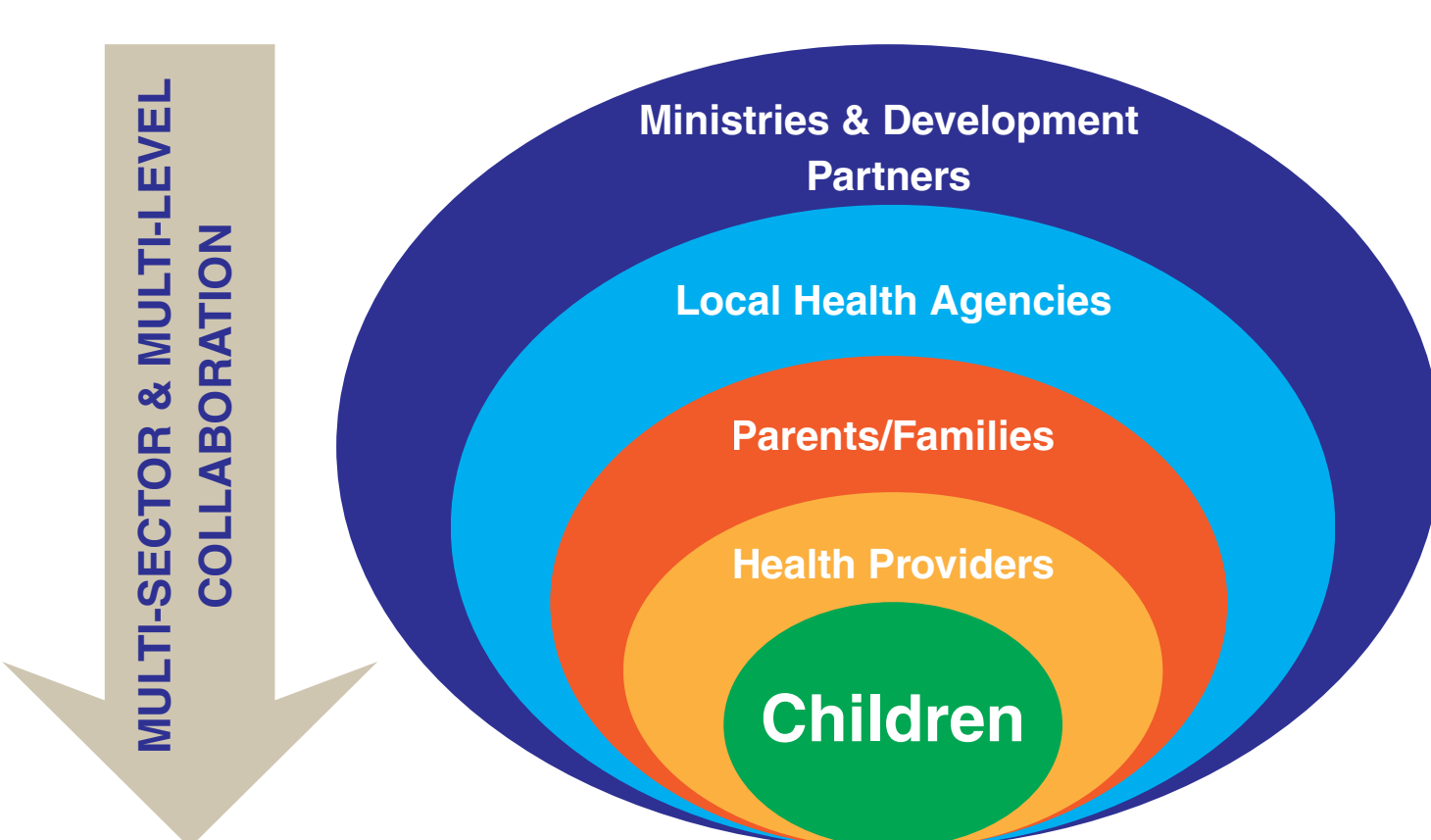
SCOPE OF STUDY & METHODOLOGY

A cross-sectional study design was used to estimate the prevalence of blood lead levels (BLLs) and identify associated risk factors. Blood samples were measured via finger-prick and analyzed on-site using a LeadCare II portable analyzer. The study was carried out in 12 districts/cities across six provinces in Indonesia. The sample size of this study was 1,609 children aged 12–59 months old. Approximately 20% of households (n = 328) were purposively chosen for home-based assessment (HBA) based on the distribution of BLLs, including households with the highest, lowest, median, and below-detection-limit levels. These environmental assessments were measured by using X-ray Fluorescence (XRF) technology to test samples from soil, dust, clothing, cookware, food ware, toys, paint and mattresses. Some samples were tested in the laboratory with the ICP-MS methods for validation.

PROCESS



KEY STRENGTH



Trust and engagement with government and community were built through communication and coordination down to the smallest levels of society, providing transparent and accountable information, involving health workers and community health workers in selected locations, providing necessary trainings, mentoring during the implementation of activities, and carrying out limited interventions referring to the national guideline.

RECOMMENDATIONS

- Strengthen the health system through a national BLS program
- Strengthen routine monitoring, reporting, and intervention for potential source of exposure
- Raise public awareness and knowledge on lead poisoning
- Promote multi-sectoral collaborations

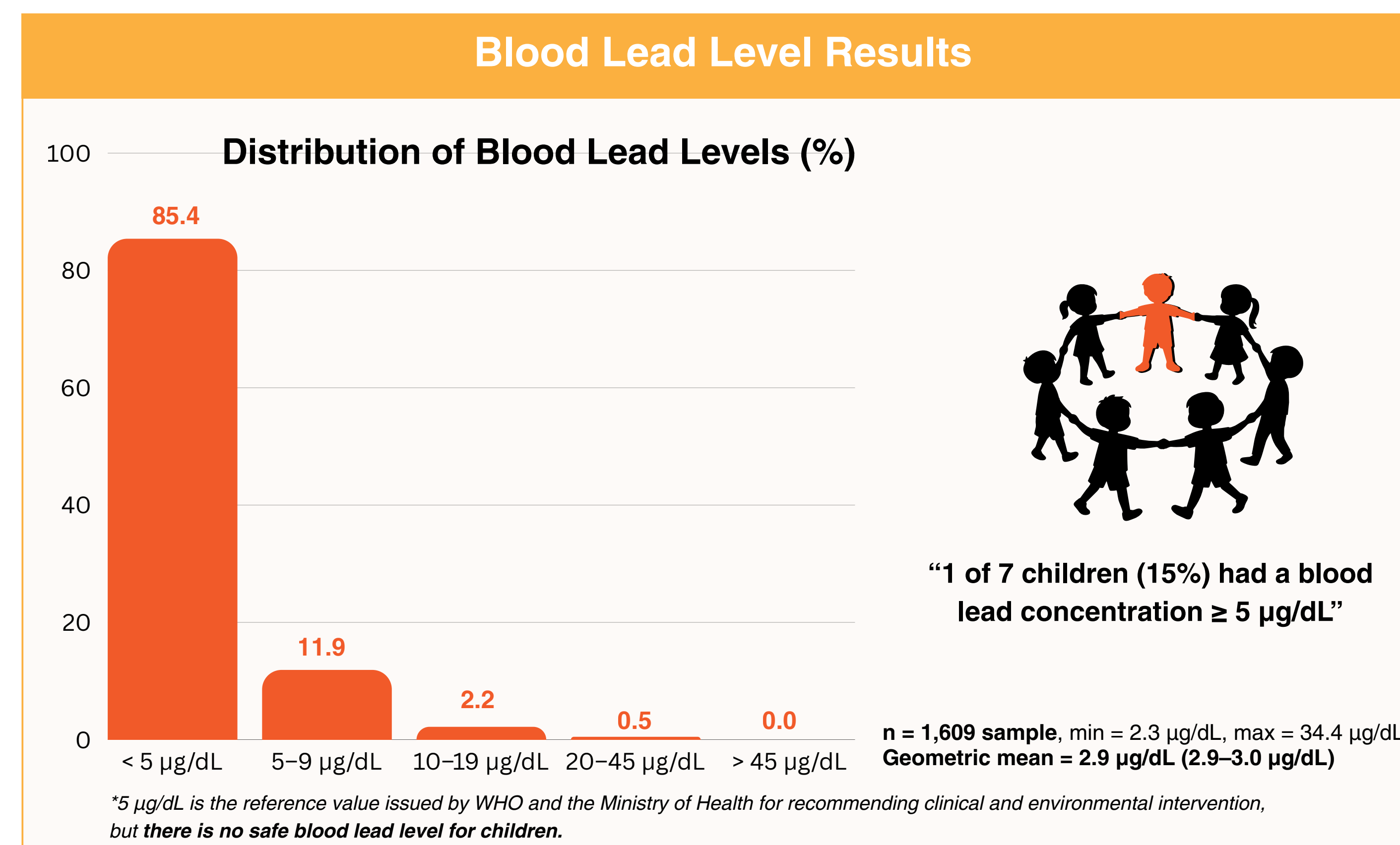
CONFLICT OF INTEREST

The authors declare no conflict of interests. The authors declare that they have no competing financial interests or personal relationships that could have appeared to influence the work in this poster.

PUBLICATION

This study contributes to an ongoing manuscript that will be published in a reputable journal.

KEY FINDINGS



Home-based assessment (HBA)

Environmental and household samples with lead levels above threshold limits	Metal cookware (71%)	Ceramic (52%) and plastic (20%) tableware
Cosmetics (34%)	Children's toys (24%)	Children's (21%) and adults' (21%) clothing
Sample sizes: metal cookware (328), ceramic tableware (199), plastic tableware (278), cosmetics (142), children's clothing (304), adults' clothing (273), and children's toys (322).		

Environmental risk factors based on home-based assessment (HBA)

For every twofold increase in soil lead concentration, the mean blood lead levels in children increased by 8%.

SCAN ME



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