Research Roundtable on Lead Poisoning

By the Advanced Study Institute of Asia

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The Advanced Study Institute of Asia at SGT University

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SUMMARY

The Research Roundtable on Lead Poisoning, organized by the Advanced Study Institute of Asia (ASIA) on September 6, 2024, brought together experts from public health, environmental science, and policymaking to address the critical issue of lead exposure in South and Southeast Asia. The event aimed to foster collaboration, share insights, and develop actionable strategies to mitigate lead poisoning, particularly among vulnerable populations such as children.

Proceedings Overview-

The roundtable was structured into three main rounds, each focusing on different aspects of the lead poisoning crisis. In the first round, representatives from various countries provided critical insights into the status of lead exposure. In Bangladesh, approximately 36 million children are affected, with an average blood lead level of 6.8 µg/dL, significantly exceeding the WHO's reference value. Major sources of exposure include contaminated household paints, cosmetics, and the improper recycling of lead-acid batteries, with organizations like Pure Earth identifying over 300 polluted sites and implementing remediation projects. In India, reports indicate that 23 out of 29 states have blood lead levels surpassing 5 µg/dL, primarily due to lead-acid battery recycling, resulting in approximately 165,000 deaths annually and millions of Disability-Adjusted Life Years lost. Nepal faces a staggering rate of elevated blood lead levels, with 65% of children in certain areas affected, attributed to contaminated products and occupational hazards. The country struggles with compliance to existing lead paint standards. Meanwhile, the Philippines has been actively working to eliminate lead in paint since 2007, with initiatives led by IPEN and NGOs to raise awareness and establish a lead-safe paint certification program across South Asia.

The second round focused on innovative strategies and initiatives to combat lead exposure, such as advocating for Extended Producer Responsibility (EPR) in India to manage lead-acid battery waste and enhance regulatory clarity. In Nepal, the Center for Public Health, and Environmental Development (CEPHED) is working to improve compliance with lead paint standards through public engagement and awareness campaigns. Community initiatives in Bangladesh led by the Environment and Social Development Organization (ESDO) aim to educate youth about lead exposure risks. Furthermore, international collaboration, particularly with WHO, is supporting Nepal in implementing chemical safety frameworks.

During the brainstorming session in the third round, experts emphasized the need for a comprehensive identification of lead exposure sources, advocating for stringent standards for lead in products, and implementing national blood lead level screening policies across South Asian countries to gather region-specific data. A consensus emerged on the importance of collaboration among government ministries and stakeholders to create a unified response to lead poisoning, highlighting the critical role of community engagement and awareness campaigns in addressing this public health issue.

Note: The perspectives presented in this report originate from the speakers at the Research Roundtable and do not necessarily represent the policies of the organizing bodies. This document has been prepared by the Advanced Study Institute of Asia (ASIA) in New Delhi. It aims to convey the insights of the Research Roundtable on Lead Poisoning, which took place on September 6, 2024, from 10:30 AM to 1:00 PM.

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1. INTRODUCTION

1.1 Meeting organization

The Research Roundtable on Lead Poisoning took place online on September 6, 2024. This initiative aims to enhance collaboration among experts from various fields who are actively addressing lead poisoning issues in their countries. The discussions focused on the status of lead poisoning, the obstacles to progress, and innovative strategies and recommendations for future actions to reduce lead exposure. By bringing together a diverse group of stakeholders, including policymakers, health professionals, and environmentalists, the roundtable aimed to establish a working group dedicated to combating lead poisoning. It is crucial to incorporate strategies that address the interconnected nature of lead exposure, health, environmental, and socio-economic factors. This comprehensive approach seeks to eliminate lead exposure and support the development of vulnerable communities.

Participants included representatives from various organizations: (i) a World Health Organization representative from Nepal, (ii) a representative from the Environment and Social Development Organization (ESDO), (iii) a representative from Pure Earth, Bangladesh, (iv) an IPEN campaigner, (v) a representative from The Energy and Resources Institute (TERI), India, (vi) a representative from CEPHED, Nepal, and (vii) a representative from the Foundation Quality of India (FQI). The roundtable was moderated by Shipra Agarwal, Senior Analyst for Health Disparities and Meta Evidence at the Advanced Study Institute of Asia (ASIA), with opening and closing remarks delivered by Neeti Goutam, Senior Research and Communication Manager at ASIA.

1.2 Roundtable objectives

The objectives of the meeting were:

1. Share insights on the current country-specific landscape regarding lead poisoning.
2. Facilitate a collaborative dialogue among experts aimed at addressing lead poisoning.
3. Discuss existing initiatives being implemented, identify best practices, and generate actionable strategies to combat this pressing issue.

2. PROCEEDINGS

2.1 Country status, challenges, and strategies

Country representatives presented and discussed insights in the 1st Round of the Roundtable

Bangladesh Lead Poisoning Crisis: Approximately 36 million children are affected by lead poisoning, with an average blood lead level of 6.8 µg/dL, surpassing the WHO's reference value of 5 µg/dL. Lead exposure sources include household paints, ceramic toys, cosmetics, contaminated soil, and improper recycling of used lead-acid batteries. This exposure has resulted in a loss of 20 million IQ points among children. Pure Earth has identified over 300 polluted sites and remediated around 86,000 square meters of contaminated soil, collaborating with UNICEF for extensive blood lead level testing.

India's Lead Contamination: A report by Pure Earth and UNICEF indicates that 23 out of 29 states in India have blood lead levels exceeding 5 µg/dL, affecting millions of children and adults. Lead-acid battery recycling poses significant risks, especially with the rise of electric vehicles. Contaminated products such as paint, cosmetics, and toys contribute to this public health crisis, which results in 165,000 deaths annually and 4.6 million Disability-Adjusted Life Years lost. There is a need to shift from a lead-free to a lead-safe society. Initiatives include awareness campaigns targeting industries, particularly lead-acid battery manufacturers, and educational programs for teachers.

Nepal's Lead Exposure Issues: Approximately 65% of children in certain areas have elevated blood lead levels, with some cities reporting rates as high as 100%. Contaminated products and occupational hazards in battery recycling are significant contributors. Nepal currently has only one standard related to lead in paint, with a 48% non-compliance rate.

Philippines' Lead Paint Elimination Efforts: IPEN Philippines ongoing initiatives to eliminate lead in paint since 2007 which q collaborates with NGOs to raise awareness and has established a lead-safe paint certification program, certifying six manufacturers in the Philippines. These efforts aim to significantly reduce lead exposure and protect public health. However, despite existing regulations, lead paint remains prevalent in countries like Bangladesh, Nepal, Sri Lanka, India, and Pakistan.

2.2 Tackling Lead Exposure: Various Approaches

Country representative's insights in the 2st Round of the Roundtable

Examples of initiatives addressing lead exposure and poisoning across South Asia include the emphasis on Extended Producer Responsibility (EPR) for lead-acid batteries in India, where TERI India representatives advocate for clearer regulations to manage the end-of-life processes of these products effectively. This includes setting specific targets for manufacturers and creating an inventory of contaminated sites for remediation.

In Nepal, the Center for Public Health, and Environmental Development (CEPHED) is working to enhance compliance with lead paint standards through public engagement and collaboration with policymakers. Their efforts include regular monitoring and awareness campaigns, although challenges such as corporate lobbying and lack of harmonized standards persist.

Pure Earth representative highlighted the need for increased advocacy and community engagement to address lead toxicity. They aim to formalize the sector and promote the use of high-quality batteries to mitigate health risks. Youth engagement is also a focus in Bangladesh, where the Environment and Social Development Organization (ESDO) is conducting awareness campaigns about lead exposure from paints. They are working to expand existing lead content standards and empower youth through environmental education.

The elimination of lead chromate in paint is being pursued through the Rotterdam Convention, with IPEN collaborating with NGOs to push for its inclusion in legally binding agreements. However, challenges remain regarding manufacturers' capacity and the availability of alternative ingredients.

The World Health Organization (WHO) is actively involved in addressing lead poisoning in Nepal, supporting the government in implementing chemical safety frameworks and promoting community engagement through advocacy programs.

In India, the "797 Project" by the Foundation for Quality India (FQI) aims to monitor lead levels across all districts, focusing on public education regarding lead exposure risks. Preliminary findings in Jharkhand have revealed high lead levels in soil and spices, prompting further investigation.

Grassroots engagement and collaboration are emphasized as critical components in the fight against lead poisoning, with ongoing efforts to address the public health implications of lead exposure across the region.

2.3 Brainstorming on Lead Exposure Standards

In the end, the session fostered a collaborative brainstorming atmosphere among participants. The discussion centered on the complexities of establishing unified global standards for lead exposure, highlighting the diverse economic conditions and resource limitations faced by different countries.

Key Challenges Identified

- Participants agreed that there is no universally safe level of lead exposure. The 5 µg/dL guideline serves as a trigger for review and reduction efforts rather than a safe threshold. The WHO recommends a BLL standard of 5 µg/dL, while the US CDC has set a lower threshold of 3.5 µg/dL.

- Developing nations struggle to meet these lower standards, particularly the US soil limit of 200 ppm compared to the WHO's 400 ppm. OSHA's occupational health standard is 30 µg/dL, with an action level of 50 µg/dL. Frequent exposure to lower lead concentrations in food products, such as noodles and spices, raises concerns about cumulative effects. Additionally, high lead levels in industrial paints and road markings were noted as critical issues.

2.4 Strategic Actions for Eliminating Lead Poisoning for the next 2-5 Years

Country representative's insights in the 2nd Round of the Roundtable

The experts provided their insights emphasize the urgent need for a multi-faceted approach to tackle this critical public health issue.

Comprehensive Identification and Awareness

- Both Ms Hoque and Dr. Rahman highlighted the importance of identifying all potential sources of lead exposure, including less recognized sources such as food products (e.g., noodles, fish) and adulterated spices like turmeric, which has been shown to contain lead chromate.
- Dr. Pandey proposed conducting hotspot mapping in urban areas to identify locations with high lead exposure risks, particularly around informal lead-acid battery recycling sites. This data-driven approach would facilitate targeted interventions.
- Ms. Hoque stressed the necessity of consistent awareness campaigns to educate the public about the dangers of lead poisoning, as many remain unaware of its risks. This includes community engagement and educational initiatives targeting vulnerable populations. This includes generating local data on lead content in paints and other products to support advocacy efforts.

Community Engagement and Collaboration

- There is a strong call for collaboration among various government ministries, including health, commerce, and environment, to create a unified response to lead poisoning. This collaboration would facilitate the development of comprehensive policies and regulations.
- Ms Hoque emphasized the role of NGOs in raising awareness and suggested that the government should actively support these initiatives to enhance their impact
- Mr Jeiel Guarino from IPEN emphasized the importance of building alliances with health professionals, civil society, and industry stakeholders to create a supportive network for advocacy and regulatory action.

Regulatory Framework and Policy Changes

- Dr. Rahman and Mr Sah both advocated for the establishment and enforcement of stringent standards for lead exposure in products, including paint, food, and cosmetics. This includes periodic compliance monitoring of existing regulations.
- Mr Sah and Mr Pote Shrestha proposed the implementation of a national BLL screening policy, which would involve establishing sophisticated laboratories and training personnel to effectively carry out effective testing and monitor lead exposure levels across the population.
- Dr. Sunil Pandey highlighted the successful phase-out of lead-based solder in electronics and suggested applying similar strategies to other materials, drawing on international agreements like the Minamata Convention as models for action.
- Mr Pote Shrestha called for strengthening the capabilities of government ministries responsible for health and environmental issues, including establishing dedicated focal points for lead and chemical safety.

Sustainable Remediation and Research

- There is a need for national surveys to assess blood lead levels in the population, which would help in understanding the exposure and specific health impacts of lead poisoning, moving beyond generalized knowledge to more targeted studies that can inform policy and public health initiatives.

- Dr. Rahman called for the development of sustainable, low-cost remediation strategies for contaminated sites, particularly in areas affected by used lead acid battery (ULAB) recycling.
- Dr. Sah pointed out the necessity for comprehensive studies to understand the contributions of various sources of lead exposure, which would guide effective interventions.

Financial and Technical Support

- There is a pressing need for increased financial backing from the government and development partners to support lead poisoning prevention initiatives.
- Mr Abhishek Venkatesh recommended implementing mandatory labeling on consumer products to inform consumers about lead content, alongside enhancing quality control measures to ensure compliance with safety standards.

2.5 Formation of a Working Group

During the final discussion round, an announcement was made regarding the establishment of a working group dedicated to combating lead poisoning. The formation of the working group represents a vital step toward addressing the public health crisis of lead poisoning. Participants expressed optimism about the potential for collaborative efforts to generate evidence-based solutions and improve health outcomes in affected communities.

This group will:

- Collaborate Across Disciplines: Include a chair, a secretary, and representatives from major international organizations to foster diverse expertise.
- Focus on Immediate and Long-Term Solutions: Address immediate gaps in lead exposure over the next two to five years while developing long-term strategies.
- Enhance Advocacy and Communication: Identify lead sources, such as lead chromate in spices and paints, and promote effective mitigation strategies.

Emphasis on Regional Collaboration

Participants underscored the need for:

- National BLL Screening Policies: A consensus emerged on establishing comprehensive blood lead level screening across South Asian countries to address limited and region-specific data.
- Infrastructure Development: Countries like Nepal require advanced laboratories and trained personnel to facilitate effective testing and intervention.
- Harmonization of Standards: A unified approach is essential to effectively tackle lead exposure.

3. CONCLUSIONS

The roundtable highlighted the urgent issue of lead poisoning in the region, particularly its severe effects on children's health. Multiple sources of lead exposure, such as contaminated products and harmful industrial practices, emphasizing the need for immediate action. With millions of children affected, the consequences include cognitive impairments and serious health complications, making swift intervention essential. Innovative strategies and ongoing initiatives to tackle lead exposure, stressing the importance of strong regulatory frameworks, community engagement, and collaboration among stakeholders. Successful awareness campaigns and advocacy for stricter regulations showcased the potential for meaningful change. The discussions underscored the necessity of a multi-faceted approach that addresses both immediate and long-term solutions.

4. RECOMMENDATIONS

1. Adopt a Multi-Stakeholder Approach

- Foster collaboration among key government ministries—health, commerce, and environment—to develop a cohesive strategy addressing lead poisoning. This includes building alliances with health professionals, civil society, and industry stakeholders to enhance advocacy efforts. Also, strengthen these ministries' capacity by establishing dedicated focal points for lead and chemical safety.

2. Conduct Comprehensive Lead Pollution Assessments

- Initiate a national inventory to identify all sources of lead pollution, including food products and contaminated spices. Implement routine blood lead level (BLL) testing integrated into the Ministry of Health's health information systems. Conduct national surveys to evaluate blood lead levels in the population and utilize hotspot mapping techniques in urban areas to identify high-risk locations for targeted interventions.

3. Enhance Occupational Health and Safety Standards

- Improve health and safety regulations in lead-related industries, identify contaminated communities, and implement restoration efforts. Strengthen the monitoring capabilities of the Department of Environment and the Ministry of Industry to effectively manage lead chromate imports and ensure proper industrial waste management.

4. Raise Public Awareness and Establish Stringent Standards

- Launch ongoing public awareness campaigns to educate communities about the dangers of lead exposure, particularly targeting vulnerable populations. Develop and enforce strict standards for lead exposure in consumer products, including food and cosmetics, alongside regular compliance monitoring. Implement mandatory labeling on consumer products to inform buyers about lead content.

5. Increase Financial Support and Develop Remediation Strategies

- Advocate for increased financial backing from government and development partners to support lead poisoning prevention initiatives. Create sustainable and cost-effective remediation strategies for contaminated sites, particularly in areas affected by used lead-acid battery recycling, to ensure long-term health and safety for communities.

ANNEXURES

Annex 1: Agenda for Research Roundtable on Lead Poisoning

Date and time	Friday, 6 September, **10:30 AM – 1:00 PM** (Indian Standard Time)
Objective	The Advanced Study Institute of Asia is organizing a roundtable on lead poisoning with experts fromSouth and Southeast Asia to address a pressing public health issue that significantly affects vulnerablepopulations, particularly children. The event aims to facilitate open dialogue and collaboration amongexperts in public health, environmental science, and policy-making, providing a platform for sharing insights on the current landscape of lead poisoning in their respective countries, discussing the effectiveness of existing initiatives, identifying best practices, and generating actionable strategies aimed at mitigating lead exposure, which is crucial for protecting public health.
Speakers	Siddika Sultana, Executive Director, Environment and Social Development Organization (ESDO), Bangladesh Dr. Suneel Pandey, Director, Circular Economy, and Waste Management, The Energy and Resources Institute (TERI), India Ram Charitra Sah, Executive Director, Centre for Public Health, and EnvironmentalDevelopment (CEPHED), Nepal Dr. Mahfuzar Rahman, Country Director, Pure Earth, Bangladesh Jeiel Guarino, Licensed chemist and Global Lead Paint Elimination Campaigner,International Pollutants Elimination Network (IPEN), Philippines Raja Ram Pote Shrestha, National Professional Officer, WHO, Nepal Abhishek Venkatesh, Chief Operating Officer, Foundation quality of India

SESSION FLOW

10:30 AM – 10:40 AM	**Opening Remarks** (Ms. Neeti Goutam, Senior Manager: Research Communications, ASIA)
5 minutes	Welcoming remarks to Speakers and Introduction
5 minutes	**(Moderator)** Ms. Shipra Agarwal, Senior Analyst: Health Disparities and MetaEvidence, ASIA
	Brief overview of the roundtable's purpose and objectives. *For all speakers- Setting* a tone for the roundtable
35 minutes	**First Round of questions and answers**
10:40 AM – 11:15 AM	*General question for all*
5 minutes per speaker to answer	In your opinion, what is the status of lead poisoning in your country, and what are the primary challenges hindering progress in addressing this issue? Based on your experience, could you share some initiatives that have been implemented by your organization to combat lead poisoning?
50 minutes	**Second Round of questions and answers**

11:15 AM – 12:05 AM *(7 min per speaker)*	*Tackling Lead Exposure: Various Approaches*
Advocacy Strategies for Stricter Lead Regulations: ESDO's Approach and Successes"	*Siddika Sultana, Executive Director, Environment and Social Development Organization (ESDO), Bangladesh* What specific strategies has ESDO employed to effectively engage government agencies and stakeholders in advocating for stricter regulations on lead in paints, toys, and food containers? Can you share some examples of successful policy changes that ESDO has influenced to reduce lead pollution and safeguard public health in Bangladesh?
Focus on waste management, providing an opportunity for him to share insights on practical solutions to a pressing public health issue.	*Dr. Suneel Pandey, Director, Circular Economy, and Waste Management, The Energy and Resources Institute (TERI), India* What key strategies does TERI employ to influence policy changes regarding lead poisoning, and how do you prioritize actions to ensure effective waste management and public health outcomes in India?
Challenges of implementing environmental regulations.	*Ram Charitra Sah, Executive Director, Centre for Public Health, and Environmental Development (CEPHED), Nepal* What strategies has CEPHED implemented to ensure compliance with lead paint standards in Nepal, and what specific challenges have you encountered in holding paint companies accountable? Additionally, how do you plan to address these challenges to better protect public health, particularly for vulnerable groups like children?
Addressing Lead Pollution Challenges: Pure Earth's Collaborative Strategies in Bangladesh"	*Dr. Mahfuzar Rahman, Country Director, Pure Earth, Bangladesh* What are the most significant challenges you face in addressing lead pollution in Bangladesh, particularly in informal sectors like battery recycling, and how does Pure Earth plan to tackle these challenges through collaboration with local communities and government agencies?
IPEN's Advocacy for Eliminating Lead Chromates: Actions and Challenges	*Jeiel Guarino, Licensed chemist and Global Lead Paint Elimination Campaigner, International Pollutants Elimination Network (IPEN), Philippines* What specific actions is IPEN taking to advocate for the elimination of lead chromates in paint, and what key challenges does IPEN face in promoting the transition to lead-free paints?
Enhancing International Collaboration to Combat Lead Poisoning in Nepal.	*Raja Ram Pote Shrestha, National Professional Officer, WHO, Nepal* As a National Professional Officer at WHO, how do you envision the role of international collaboration in addressing lead poisoning in Nepal, and what initiatives is WHO currently supporting to enhance community awareness and prevention efforts?
Discuss your strategies for awareness and the evaluation of their effectiveness.	*Abhishek Venkatesh, Chief Operating Officer, Foundation quality of India* What innovative strategies has the Foundation for Quality India implemented to effectively raise awareness about lead toxicity, and how do you evaluate the success of these initiatives in improving public health outcomes?
12: 05 PM – 12:15 PM **(10 minutes)**	***BREAK***

35 minutes		**Third round of forming a Working Group**
	12: 15 PM – 12:50 PM *(5 minutes per speaker)*	*Strategic Actions for Eliminating Lead Poisoning: Organizational Commitments for the next 2-5 Years*
	The moderator asks each speaker to make one last 2-minute intervention to close the round with a recommendation or priority area.	*Dr. Mahfuzar Rahman, Country Director, Pure Earth, Bangladesh* What future research and interventions do you believe are needed to effectively address this issue going forward? *Ram Charitra Sah, Executive Director, Centre for Public Health, and Environmental Development (CEPHED), Nepal* What policy changes do you recommend to reduce lead exposure and improve public health responses? *Raja Ram Pote Shrestha, National Professional Officer, WHO, Nepal* Given your expertise in environmental health and chemical safety, what specific strategies do you believe are most effective in reducing lead exposure among vulnerable populations in Nepal, specifically children and people in occupational settings?" *Jeiel Guarino, Licensed chemist and Global Lead Paint Elimination Campaigner, International Pollutants Elimination Network (IPEN), Philippines* In your experience, what are the most effective methods for raising public awareness about the dangers of lead chromates in paint, and how can communities be empowered to take action? *Dr. Suneel Pandey, Director, Circular Economy, and Waste Management, The Energy and Resources Institute (TERI), India* What strategies would you recommend for effectively reducing lead contamination in urban environments, particularly in areas with high exposure risks? *Abhishek Venkatesh, Chief Operating Officer, Foundation quality of India* What steps can we take to ensure that consumer products in India are safe by enhancing quality control, enforcing regulations on lead content, and increasing community awareness about the dangers of lead poisoning?
	5 minutes	**Questions from the participants**
		The moderator takes two questions from the audience and allows for two different speakers to respond one each.
	12: 50 PM – 1:00 PM **(10 minutes)**	**Conclusion and Closing remarks**

Annex 2: Meeting participant list

Speakers for the Roundtable

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