Workshop on

Mercury-Free Dentistry

March 17, 2025 | IHC, New Delhi

Toxics Link

for a toxics-free world

Dental amalgam, a restorative material containing 50% mercury by weight, has long been used in dentistry despite being a known neurotoxin. Mercury can contaminate air, soil, and water and has irreversible health impacts on humans, especially on the nervous system.

In line with India's commitments under the Minamata Convention on Mercury, which mandates the phase-down of mercury use in dentistry, a nationwide campaign was undertaken, which included direct engagement with dentists, in collaboration with state Indian Dental Association (IDA) branches and social media campaign to reach out to general public. The objectives were:

- To sensitise dental practitioners and stakeholders about the risks of mercury amalgam.
- To assess readiness for transitioning to mercury-free alternatives.
- To catalyse regulatory, educational, and behavioural change.
- To generate public and professional support through direct engagement and social media.

In this context, a National Consultation was organised in partnership with IDA at India Habitat Centre, New Delhi on March 17, 2025.

Welcome and Introduction

The meeting began with a welcome address by **Mr. Satish Sinha**, Associate Director, Toxics Link, who underscored the importance of mercury phase-out efforts in India. He outlined the country's achievements in phasing out mercury from key sectors and pointed to persistent challenges, especially regarding unregulated online sales.

Mr. Sinha traced the decline in mercury usage within the healthcare and dental sectors between 2003 and 2010, noting significant progress, though issues such as cost disparities between mercury-based and digital alternatives remain. Several state IDA chapters, including those in Rajasthan, Madhya Pradesh, and Odisha, have made official commitments, and the Punjab

Government has reportedly ceased mercury procurement for dental use. He called for sustained advocacy, compliance enforcement, and public awareness to advance mercury-free practices.

Address by Dr. L. Swasticharan, Additional DDG & Director (EMR), Ministry of Health and Family Welfare

Dr. Swasticharan pointed out that **mercury-based devices** such as BP apparatuses continue to be used due to public familiarity and demand, especially in traditional healthcare settings.
He emphasized:

- The critical need for **greater engagement with civil society** to build broader consensus on the shift to safer alternatives.
- Leveraging **existing programs like the Ministry's Patient Safety initiatives** to promote environmentally responsible practices.
- The importance of **awareness generation**, **adaptation**, and **promotion of composite materials** among both practitioners and the public.
- Adoption of **amalgam traps** and related technologies to minimize mercury pollution from dental practices.

Key Remarks by Ms. Anu Agarwal, Consultant, WHO India

Ms. Agarwal discussed WHO's efforts to assess and address **mercury emissions in dental hospitals** across India.
She shared:

- Initial challenges in getting mercury emissions from the dental sector recognized by the Ministry of Environment, which had prioritized industrial mercury pollution.
- Subsequent progress made in documenting **mercury instrument breakages** and **releases** in dental healthcare facilities. She emphasized the need for continued focus on environmental monitoring and institutional accountability.

Session Highlights

Session 1: Global and National Perspective on Mercury-Free Dentistry

Speaker: Prof. (Dr.) Mahesh Verma, Vice Chancellor, Guru Gobind Singh Indraprastha University, New Delhi

Dr. Verma provided a comprehensive overview of mercury-free dentistry initiatives, aligning the Indian context with the global momentum under the Minamata Convention. He acknowledged the challenges of resistance to change and lack of training on alternatives, proposing:

- Scaling up **capacity-building initiatives** for dental professionals.
- Enhancing **regulatory compliance** and **stakeholder engagement**.
- Accelerating the adoption of **mercury-free alternatives** through research and awareness.

Dr. Verma also shared findings from a study conducted across small and medium-sized hospitals, which revealed alarming data—an estimated 3 kg of mercury was being released per hospital, amounting to 300–400 kg annually across Delhi. These findings led to critical engagement with policymakers. A report was submitted to the Ministry of Environment, which redirected the matter to the Delhi Government due to the local relevance. This prompted high-level discussions in 2007.

The implementation phase saw real impact—hospitals like Gangaram ceased mercury procurement entirely, and both public and private institutions began transitioning away from mercury-based tools. Maulana Azad Institute of Dental Sciences (MAIDS) continued to support these efforts through awareness campaigns and technical guidance.

Dr. Verma concluded by stressing that phasing out mercury in dental and medical practices demonstrates the effectiveness of data-driven advocacy and collaborative action.

Session 2: Experiences from the Indian Army and Broader Dental Sector

Speaker: Lt. General Vimal Arora, Chief Clinical Officer, Clove Dental; Former Director General, Dental Services

Lt. General Arora highlighted the Indian Army's successful phase-out of dental amalgam across all centres by 2014, despite logistical challenges in extreme environments.
Lt. Arora commended Toxics Link for its significant contributions towards mercury free dentistry. However, he emphasized the need for the organization to now broaden its focus and address other emerging environmental and health concerns in the dental sector. He specifically pointed out the high exposure to methyl acrylate from certain dental materials, which is known to pose carcinogenic risks. He also raised concerns regarding the toxicity of bonding agents and the widespread use of metals such as nickel and titanium in implants, which may have long-term health implications. Additionally, he highlighted the growing environmental burden of plastic waste, particularly from aligners and other disposable materials used in orthodontic treatments :

He also highlighted that Clove dental, which is a private dental clinics chain is not using amalgam from a long time. Lt. Arora also stressed the need for **continuous skill development**, integrating clinical, technical, and soft skills training to support mercury-free and environmentally sustainable dentistry.

Session 3: Advancing Policy and Practice for a Mercury-Free Future

Speaker: Dr. Rajiv K. Chugh, Former President (2023–24), Indian Dental Association (IDA)

Dr. Chugh strongly advocated for a **complete phase-out** of mercury amalgam, not just a phased down or gradual reduction. He called for:

- **Immediate dental curriculum revisions** to remove mandatory amalgam training.
- **Promotion of modern alternatives** like composites, bioactive materials, and glass ionomers.
- **Support for digitization and modernization** of dental practice infrastructure.

He stressed the need for close collaboration with the Government of India and other dental organizations to ensure a smooth and effective transition. Additionally, he underlined the critical role of the media in raising public awareness about the potential side effects of amalgam, calling for targeted communication campaigns to inform patients and encourage informed choices.

Session 4: Global Perspectives on Mercury-Free Dentistry

Speaker: Mr. Charlie Brown, World Alliance for Mercury-Free Dentistry

Mr. Brown shared a global overview and future outlook for mercury free dentistry, emphasizing:

- The influence of **consumer awareness** and **modern technology** on mercury-free transitions.

He referenced the Bangkok Declaration, adopted by the World Health Organization (WHO) in November, which calls for a global phase-out of dental amalgam. Citing international progress, he noted that countries such as Tanzania, Gabon, South Africa, the Philippines, and Indonesia have already by law banned the use of amalgam. He also emphasized the well-documented health risks associated with mercury in dental amalgam, which remain a primary driver behind mercury phase out.

He congratulated India on its commitment and urged accelerated action to align with global momentum. It was also emphasized that dentists have a responsibility to maintain transparency with their patients, particularly by informing them about the potential health risks associated with mercury amalgam and educating them on the availability of safer alternatives such as composite materials. Open communication was identified as a key component in building patient trust and supporting the broader transition to mercury-free dentistry. Additionally, it was noted that India's progress on the global mercury phase-down is commendable, reflecting the country's commitment to both public health and environmental sustainability.

Session 5: Industry Perspective and Emerging Environmental Concerns

Speakers:

- **Dr. Shweta Bansal**, Senior General Manager, Clove Dental
- **Dr. Ritika Jindal**, Consultant, Clove Dental
- **Dr. Navin**, Head of Implantology, Clove Dental
- **Major Sakshi Sharma**, Head of Quality, Clove Dental

Key points discussed:

- The importance of **proper disposal of residual mercury**, especially from old dental units.
- Risks associated with mercury exposure leading to conditions like **Minamata disease** and **Pink Disease** (Acrodynia).
- The toxicity concerns of metals used in dental implants.
- The growing **plastic waste challenge** in dentistry, calling for eco-friendly innovations.
- The need for **regulatory enforcement** and **joint action** by the Ministry of Health and Ministry of Environment.

Participants stressed the urgency of **capacity-building programs** and integrating **sustainability modules** into dental education.

Open Discussion: Key Issues Raised

- Participants noted that **amalgam is still legally available** in India, making regulatory restrictions on online sales challenging.
- Calls were made for **more research** into alternatives that match the **durability of amalgam**.
- Dental students stressed the **urgent need to update the DCI curriculum** and **raise ethical awareness** among practitioners regarding mercury risks.
- Legal concerns around **patient consent forms** and **disclosure of risks** were discussed, highlighting the moral responsibility of dentists to offer safer materials whenever possible.

Key Outcomes and Way Forward

- **Curriculum Reform:** Advocate with the Dental Council of India (DCI) for removal of amalgam-based practices and inclusion of mercury-free training.
- **Regulatory Action:** Push for guidelines on the disposal of both mercury waste and plastic waste from dental practices.
- **Capacity Building:** Conduct nationwide workshops to train dental professionals in handling mercury-free materials and waste management.
- **Public Awareness:** Launch strategic media campaigns to inform patients about mercury risks and safer alternatives.
- **Research and Innovation:** Support research into durable, eco-friendly restorative materials.
- **Policy Engagement:** Develop and submit recommendations for a **phased elimination roadmap** for mercury-based dental products.

Conclusion

The meeting concluded with **Ms. Priti Mahesh** (Toxics Link) thanking all participants for their valuable insights. She acknowledged the progress achieved so far and emphasized the need for continued collaboration among the dental community, environmental experts, policymakers, and industry stakeholders to advance toward a **mercury-free, sustainable dental sector** in India.