



E-NEWSLETTER

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FROM THE EDITOR'S DESK:

BURNING ISSUES: WASTE, WORK, AND WELLNESS IN SUMMER 2025

Dear Readers,

As the heat of Summer 2025 grips the nation, it also brings into sharper focus the intersecting crises of environmental degradation and occupational health. We are pleased to present the second issue of the first volume of our newsletter from the Centre for Occupational and Environmental Health (COEH), with a spotlight on one of the fastest-growing and under-regulated threats in India—electronic waste (e-waste).

With over 1.7 lakh tonnes of e-waste generated annually, the challenge is no longer limited to regulation—it demands action on the ground. In collaboration with the Department of Community Medicine, Maulana Azad Medical College, COEH has led community-based awareness initiatives this quarter, including health talks and transect walks to promote safe waste disposal and highlight the hazards of informal e-waste handling.

This issue also features updates from our ongoing efforts to address the needs of India's invisible workforce, covered under the segment From Toil to Triumph: Securing India's Unorganised Workforce, along with a new addition—Research Rendezvous—spotlighting original research on occupational and environmental health.

Our professional development sessions this year have brought together national and international experts to deepen understanding on topics ranging from sanitation and space medicine to climate and gender-affirming care. These engagements continue to build vital capacity among India's medical professionals.

We hope this edition provokes reflection, encourages collaboration, and builds momentum for sustainable action. As always, we welcome your feedback and contributions.

Here's to a summer of sustainable choices, safer workplaces, and a cleaner environment!

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STAY IN THE LOOP: STAY INFORMED!

Up-to-Date With Events and Recent Advances

Tackling India's E-Waste Surge: Policy Reforms and Progress in 2025

India is witnessing a steady surge in electronic waste generation, driven by rapid urbanization and growing dependence on electrical and electronic devices. Recognizing the urgent need to address the mounting health and environmental risks, the Ministry of Environment, Forest and Climate Change revised the earlier E-Waste (Management) Rules, 2016, and introduced a more robust framework through the E-Waste (Management) Rules, 2022, which came into force on April 1, 2023. These revised rules aim to strengthen environmental safeguards through an enhanced Extended Producer Responsibility (EPR) regime, mandating all producers, manufacturers, recyclers, and refurbishers to register on the Central Pollution Control Board (CPCB)'s EPR portal to improve accountability and transparency.

Currently, India has 322 registered recyclers and 72 refurbishers, with a combined annual e-waste recycling capacity of over 22 lakh metric tonnes. To further streamline the process, the CPCB has released comprehensive guidelines for scientific dismantling, recycling, and refurbishment, while states have been instructed to clamp down on informal recycling units, allocate designated industrial zones for e-waste management, and closely monitor compliance with EPR obligations. These measures are enforced through regular inspections and reporting by State Pollution Control Boards (SPCBs). The progress and ongoing efforts were recently highlighted in the Rajya Sabha by Shri Kirti Vardhan Singh, Minister of State for Environment, Forest and Climate Change.

Source: Press Information Bureau

BIS Strengthens Workplace Safety with New Standards for Respiratory Protection, Fall Prevention, and Fire Safety

To enhance occupational health and safety, the Bureau of Indian Standards (BIS) has introduced comprehensive Indian Standards focusing on respiratory protection, fall prevention, and fire safety across various high-risk industries such as construction, mining, and chemical processing. These standards ensure access to high-quality protective equipment and systems, reducing the risk of workplace injuries and illnesses. The BIS framework operates under the BIS Act, 2016, and mandates certification through 187 Quality Control Orders (QCOs) covering 769 products. Notably, two horizontal QCOs notified in 2024 focus exclusively on electrical appliance and machinery safety, reinforcing mandatory compliance for manufacturers.

BIS also conducts stakeholder engagement sessions—Manak Manthans—in cities like Hyderabad, Chennai, and Dehradun to raise awareness and encourage adoption of these safety standards. Key Indian Standards include the IS 9473 and IS 10245 series for respiratory protective devices, IS 3521 series for personal fall protection systems, and IS 16890 and IS 15683 for fire safety gear. These initiatives aim to build a robust safety culture in workplaces, promoting risk reduction and aligning with national goals for quality assurance and workforce well-being.

Source: Press Information Bureau

Contributed By: Dr Madhvi Dhamania (SR, PSM)

India Launches 'Srjanam': First Indigenous Automated Biomedical Waste Treatment Plant

In a major stride toward sustainable healthcare, Union Minister Dr. Jitendra Singh launched India's first indigenous Automated Biomedical Waste Treatment Plant, named "Srjanam," at AIIMS New Delhi on 10th February 2025. Developed by CSIR-NIIST Thiruvananthapuram, this eco-friendly rig marks a breakthrough in biomedical waste management, eliminating the need for energy-intensive incineration. With a capacity of 400 kg per day, "Srjanam" safely disinfects waste like blood, urine, and lab disposables while neutralizing foul odors. Validated for its antimicrobial action, it offers a safer, cleaner alternative to traditional methods. Dr. Singh emphasized the government's commitment to converting "Waste to Wealth," aligning with India's broader sustainability and innovation goals. He also highlighted support for science-led initiatives, including major funding boosts for clean technologies and space startups.

This innovation responds to the challenge of managing the 743 tonnes of biomedical waste India generates daily, offering a replicable, scalable model for hospitals nationwide.

Source: Press Information Bureau

Towards Equal Footing: A Round Table on Women's Workforce Participation

In line with the Viksit Bharat 2047 vision of 70% female workforce participation, the Ministry of Labour & Employment and LBSNAA held a Round Table Discussion on 3–4 March 2025 in Mussoorie. The event brought together policymakers, industry leaders, global organizations, and skilling institutions to explore strategies for boosting women's economic participation in India.

Smt. Sumita Dawra, Secretary, Ministry of Labour & Employment, highlighted the positive shift in workforce dynamics. The Female Labour Force Participation Rate (FLFPR) rose from 23.3% in 2017–18 to 41.7% in 2023–24, while unemployment among women dropped from 5.6% to 3.2%. She emphasized the need for policy reforms that address systemic barriers and ensure equitable access to jobs, skilling, and safe workspaces.

Deliberations spanned key themes like expanding quality care services, future-ready skilling aligned with industry needs, enforcement of workplace safety and gender laws, and harnessing digital and AI platforms to create inclusive job opportunities.

The Ministry reaffirmed its commitment to translating the discussion into action through a dedicated task force and stakeholder collaboration. This initiative signals the start of a sustained national effort to reshape India's workforce into a more inclusive, equitable, and empowered space for women.

Source: Press Information Bureau

Upcoming Events: Mark Your Calendar!!

National Events:

- Occupational Safety and Health- OSH India Expo – Mumbai from September 16-18, 2025, in Mumbai, Maharashtra

International events:

- International Conference on Waste Management, Recycling, and Environment (ICWMRE) on September 4, 2025 (Prague, Czech Republic)
- International Conference on Occupational Health and Safety (ICOHS-25) on August 14–15, 2025 (Milan, Italy)





ECOHEALTH DIALOGUES: EMPOWERING COMMUNITIES AS ROOTS OF CHANGE



From Trash to Transformation: Community Awareness on Waste and Health

On May 10, 2025, the Centre for Occupational and Environmental Health (COEH) and the Department of Community Medicine, Maulana Azad Medical College, New Delhi, organized a health awareness camp in the Mirdard area as part of the Family Adoption Program (FAP) for the 2024 MBBS batch. Attended by 50 residents, the session focused on waste disposal methods and their impact on health.

During a transect walk, students and faculty engaged residents in health talks on the importance of waste segregation into wet, dry, and hazardous categories, along with the benefits of composting and recycling. Special emphasis was placed on raising awareness about electronic waste (e-waste), highlighting its risks and the need for safe, formal disposal.

The event encouraged community participation, with residents expressing willingness to adopt cleaner, more sustainable practices. The camp underscored the strong link between environmental hygiene and public health, inspiring local action toward a healthier living environment.



ECOHEALTH DIALOGUES: BUILDING EXPERTISE AMONG MEDICAL PROFESSIONALS

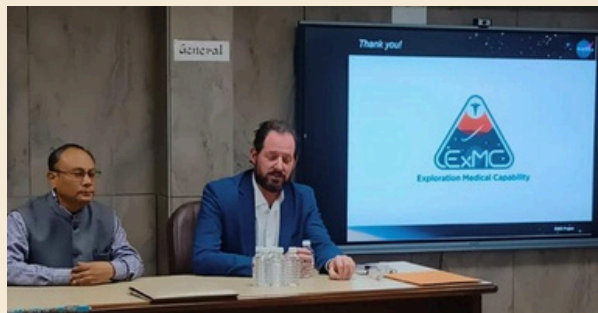


Workplace Health, Climate, and Care: A Learning Series

In an era where the intersection of environment, occupation, and public health is becoming increasingly critical, the **Centre for Occupational and Environmental Health (COEH)** and the Department of Community Medicine, Maulana Azad Medical College (MAMC), New Delhi, actively conducted a series of knowledge-building sessions in the first half of 2025. These academic sessions brought together national and international experts to foster dialogue and build capacity among medical professionals on pressing issues of occupational, environmental, and social health determinants.

The year began with a distinguished online session on “**Occupational Health of Workers and the Working Environment**”, held on January 17, 2025, by **Dr. Arthur L. Frank**, Professor Emeritus at Drexel University, USA. The session was well attended by 44 participants and provided critical insights into workplace hazards and safety standards.

On February 11, 2025, **Dr. Jay Lemery**, Professor at the University of Colorado and a global voice in climate and health, delivered a thought-provoking lecture on ***“The Role of Space Medicine in Understanding Human Physiology”***. The session, attended by 35 participants, explored the applications of space-based research in clinical and preventive medicine.



Continuing the momentum, a session on ***“Health of Sanitation Workers in India”*** was conducted by **Dr. Ashish Mittal** (Occupational Health Specialist), on February 27, 2025. With over 50 attendees, the session addressed occupational vulnerabilities, stigma, and policy gaps faced by sanitation workers.

On March 7, 2025, a special ***“Biomedical Waste Management Awareness Programme”*** was jointly held by the **Delhi Pollution Control Committee** and **COEH**. This in-person programme targeted **all medical superintendents and nodal officers from Delhi government hospitals**, underscoring institutional responsibilities in ensuring safe and sustainable waste practices.



Another noteworthy event was the session on ***“Assistive Technology in Community Health and Disability Care”*** on March 20, 2025. Led by **Dr. Suraj Sensem**, Professor of Community Ophthalmology at AIIMS, the programme was attended by 31 participants and highlighted innovative tools for disability inclusion in health systems.

On April 19, 2025, a session on ***“Counselling Skills for Adolescent Clinics”*** was conducted by **Dr. Uday K. Sinha** (Additional Professor, Department of Clinical Psychology) from the Institute of Human Behaviour and Allied Sciences (IBHAS), Delhi. With 26 participants, this session focused on effective communication techniques and psychosocial support for adolescents.

In May 2025, **two Continuing Medical Education (CME)** events were held. The first, Towards ***“Gender- and Sexuality-Affirming Healthcare”***, was conducted on May 1, with sessions by **Dr. L. Ramakrishnan**, **Ms. Khushi Pahuja**, and **Dr. Sanjay Sharma**. It drew 25 attendees and focused on inclusive healthcare practices. The second, titled ***“Lost Homes – Wars, Refugees, and the Erosion of Human Rights”***, held on May 5, featured lawyer and Human Rights Activist **Ms. Nandita Haksar**. This powerful discussion, attended by 21 participants, examined the intersection of conflict, displacement, and health.

Together, these sessions reflect a strong commitment to integrating environmental and occupational health into mainstream medical education and practice. COEH and MAMC continue to foster interdisciplinary learning spaces, nurturing a responsive and well-informed healthcare workforce equipped to address the evolving challenges of public health.

FROM TOLL TO TRIUMPH: SECURING INDIA'S UNORGANISED WORKFORCE

e-Shram – India's Digital Backbone for Unorganised Workers

India's unorganised sector, comprising over 30 crore workers such as street vendors, construction workers, and domestic helpers, now has a powerful digital ally — the e-Shram portal. Launched in August 2021 by the Ministry of Labour and Employment, this platform serves as a centralised database offering a Universal Account Number (UAN) to each worker. As of January 2025, more than 30.58 crore workers are registered, with 1.23 crore new additions in 2024 alone, averaging 33,700 registrations daily. The portal has been integrated with 12 key central government schemes, including Ayushman Bharat, PM Awas Yojana, MGNREGA, and PMJJBY, enabling workers to access benefits and track their entitlements from one place. Further linking with the National Career Service, Skill India Digital, and myScheme platforms allows users to explore job opportunities, skill training, and relevant schemes based on eligibility. In January 2025, the platform became more inclusive with multilingual functionality in 22 Indian languages, thanks to the Bhashini platform. With its evolving features, e-Shram is becoming a One-Stop Solution for improving the visibility, welfare, and dignity of India's informal workforce.

Dignity After Work: The Pradhan Mantri Shram Yogi Maandhan (PM-SYM) – A Pension Promise for the Invisible Workforce

PM-SYM, launched in 2019, is a landmark pension scheme designed for India's unorganised workforce—those earning less than ₹15,000 per month. Open to workers aged 18 to 40, the scheme offers a guaranteed monthly pension of ₹3,000 starting at the age of 60. Contributions are shared equally by the worker and the government, making it both affordable and equitable. The amount contributed varies by age at enrolment, starting as low as ₹55 per month at age 18 and up to ₹200 at age 40. Enrolment is simple and accessible, facilitated through Common Service Centres (CSCs) or the Maandhan portal, requiring just an Aadhaar number and bank account details. Upon registration, beneficiaries receive a PM-SYM card. In case of the subscriber's death, the spouse is eligible for 50% of the pension as a family pension.

The scheme is administered by the Ministry of Labour and Employment, with the Life Insurance Corporation (LIC) serving as the Pension Fund Manager. In a major advancement, PM-SYM is now integrated with the e-Shram portal, enabling smoother access for registered workers. The scheme includes thoughtful features such as flexible exit options, interest-bearing refunds on premature exit, revival of dormant accounts, and a unique "Donate-a-Pension" option, allowing employers or well-wishers to contribute on behalf of workers. By combining inclusivity, flexibility, and long-term security, PM-SYM represents a significant step toward recognising and safeguarding the contributions of India's invisible workforce.

Contributed By: Dr Madhvi Dhamania (Senior Resident)








E-WASTE MANAGEMENT IN INDIA: A STRUCTURED APPROACH TO A GROWING THREAT



Electronic waste (e-waste) refers to discarded electronics such as phones, computers, TVs, and appliances. With over 4,000 tons generated every hour worldwide, e-waste is among the fastest-growing waste streams globally.

 **India's E-Waste Landscape:** India generates over 1.7 lakh tonnes of e-waste annually, with Mumbai, Delhi, Bangalore, and Chennai as top contributors. IT industries, due to rapid hardware upgrades, account for a significant share—up to 30% of devices are obsolete each year. However, most e-waste is processed in the informal sector using unsafe methods like open burning and acid baths. A Nokia survey highlighted that only 3% of users recycle phones and nearly 50% are unaware of their recyclability.

 **Health & Environmental Implications:** Health studies from e-waste hubs like Guiyu (China) and Agbogbloshie (Ghana) reveal a disturbing pattern: workers and residents face higher rates of respiratory issues, skin disorders, headaches, and even stunted growth in children. Elevated levels of toxic substances such as lead, mercury, and dioxins have been found in human tissues, particularly among workers handling e-waste without protection. Even formal recyclers are at risk—air sampling has shown 10–30 times higher metal exposure compared to office staff.

 **India's Three-Level E-Waste Treatment Framework:** To address this, the Central Pollution Control Board introduced the E-Waste (Management and Handling) Guidelines, 2009, aiming to shift e-waste from the informal to the formal sector. The guidelines outline a three-tier treatment system focused on environmentally sound technologies and material recovery.

Level	Main Processes	Purpose
1st Level	Decontamination, Dismantling, Segregation	Remove hazardous parts and sort components
2nd Level	Shredding, Electromagnetic & Eddy Current Separation	Recover ferrous/non-ferrous metals, plastics, and glass
3rd Level	Final Recovery & Incineration	Extract valuable materials; dispose non-recyclables safely

A special focus exists for CRT devices, which are treated using controlled glass separation and phosphor recovery.

Method	Function
Ni-Chrome Wire	Heat-based splitting via thermal stress
Laser Cutting	Precision separation using heat and rapid cooling
Diamond Saw/Wire	Mechanical cutting using diamond tools
Water-Jet Cutting	High-pressure water stream with abrasive for clean cuts

Despite the policy framework, implementation gaps persist. Only a small fraction of e-waste reaches formal recyclers. Public awareness remains low, and the informal sector continues to dominate. To improve, India must expand authorized recycling infrastructure, enforce collection targets, and integrate informal workers into the formal chain.

Conclusion:

Effective e-waste management in India hinges on scaling formal recycling operations, strengthening enforcement of CPCB guidelines, and building public and industry awareness. Without such measures, the country risks irreversible damage to both environmental and human health.



RENDEZVOUS WITH RESEARCH

Knowledge and Practices Regarding e-waste and its Management among Adults Living in Siliguri: A Cross-sectional Study

Background

India is projected to be one of the largest consumers of electronics and producers of e-waste in the world. There is a dearth of literature regarding the knowledge and practices of the general Indian population regarding e-waste. The present study was conducted to assess the knowledge and practices of the general populace of Siliguri regarding electronic waste.

Methods:

A cross-sectional study was conducted among the households of Siliguri, West Bengal. Consenting adults were interviewed using the questionnaire. A multi-stage sampling strategy was employed for the study to obtain a sample of 375. A researcher-administered questionnaire was used to collect data.

Results

The mean age of the head of the household was 50.2 ± 13.6 years. Most of the households were nuclear families (56.5%), and 34.4% of them belonged to the upper middle socioeconomic class. The households possessed a median of five devices. It was seen that 93.4% knew that e-waste was harmful to their health. The commonest practice regarding the disposal of e-waste was selling these items to recyclers (47.5%). However, 29.3% of the households reported that due to them not knowing what to do with broken electronics, they stored them at home. A majority (84.8%) of the households reported that they did not use any personal protective equipment while handling e-waste.



India's E-Waste Mess Stinks

What is E-Waste?

Any electronic or electrical product, which is discarded.



What is the issue?

India's e-Waste generation is rising at the rate of 4 to 5%.



What is the problem?

Huge gap between the e-Waste generation and e-Waste dismantling/ recycling.



What can be DONE?

Handle e-Waste in scientific manner.



Proper disposal of all components that cannot be recycled.



Increase number of recycling/dismantling units from the current number - 148.



Increase awareness among consumers.



Conclusion

While the households assessed knew about the harm of e-waste, their knowledge about e-waste disposal was varied. Furthermore, there was a knowledge-practice gap, leading to them either storing e-waste at home or having other improper handling and disposal practices.

Source: Bandyopadhyay A, Mukherjee A. Knowledge and Practices Regarding e-waste and its management among adults living in Siliguri: A cross-sectional study. Indian Journal of Community Medicine. 2025:10-4103.