



Collaborative for Air Pollution and Health Effects Research-India

## Air Health Bulletin

### BACKGROUND

CAPHER-India is a collaboration between two Premier Institutes in the field of science and technology – All India Institute of Medical Sciences, Delhi and Indian Institute of Technology, Delhi. It is a dedicated network focused on air pollution and health effects research in India. Air Health Bulletin is official publication of CAPHER India which aims to disseminate the work, activities, science news on air pollution and health.

### CAPHER-INDIA ACTIVITIES

#### National Consultation on “Air Pollution and Health in India - Actions for moving forward on Science, Policy, Programme and Community engagement”, New Delhi

A National Consultation was held on 17th November, 2023 at All India Institute of Medical Sciences, New Delhi with around 50 participants.

The goals of the consultation were to understand policy and programme needs with respect to science of air pollution and health effects in India, to conduct a stock take on barriers in translating science into action - from programme implementer's perspective, to identify targeted opportunities for collaborative actions for community engagement and to create a networking platform for experts across research, policy, and programme domains.

Recommendations:

- Air pollution was labeled as the new villain for health policy as the minimal individual risk in contrast to the significant population risk will be challenging to address
- There is need for comprehensive collaboration with scientific innovations, community involvement, and regional approaches to address air quality challenges and improve public health outcomes.
- Interventions needs to focus on both on household and ambient air pollution



## CAPHER-INDIA ACTIVITIES

**Early career training on Air Pollution and Health, Kathmandu, Nepal**

The Health Effects Institute (HEI), the International Centre for Integrated Mountain Development (ICIMOD), and the Collaborative for Air Pollution and Health Effects Research—India (CAPHER-India) conducted a training program for early-career researchers on Air Pollution and Health in Kathmandu, Nepal, from August 12-14, 2024. The event brought together 21 early-career researchers from Bangladesh, India, Nepal, Pakistan, and Sri Lanka, along with a group of international and regional experts. The training covered modules on air pollution monitoring, exposure assessment, epidemiology, health impact assessment, as well as grant writing, scientific writing, and science communication. This was the first regional workshop we organized, and we look forward to hosting more such capacity-building initiatives in the future. Regional network for early career researchers in line with CAPHER-India has been discussed in the meeting. Training materials can be accessed here:

<https://www.healtheffects.org/meeting/early-career-training-air-pollution-and-health>

**Continuous Medical Education on “Research Perspective on Air Pollution”, Arunachal Pradesh**

The Department of Community Medicine, TRIHMS, Arunachal Pradesh in collaboration with All India Institute of Medical Sciences, New Delhi and National Academy of Medical Sciences conducted CME on the topic “Research Perspective on Air Pollution” on 9th August, 2024. Dr. Harshal Ramesh Salve represented CAPHER India in the CME. He presented talks on the following topics : “Health inequality and its vulnerability to climate change” and Health effects of air pollution: Experience sharing”. The panel discussion was conducted on the topic “Strategizing to Counter Eventual Ill Health Effects of Climate Change in Arunachal Pradesh. Dr. Harshal Ramesh Salve was an eminent speaker along with Dr. Faruqueuddin Ahmed, Dr. Lobsang Jampa, Dr. Anoop Dev, Dr. Tamar Paley, Dr. Tulika Goswami Mahanta. Recommendation includes strengthening of research capacities in North-Eastern States.



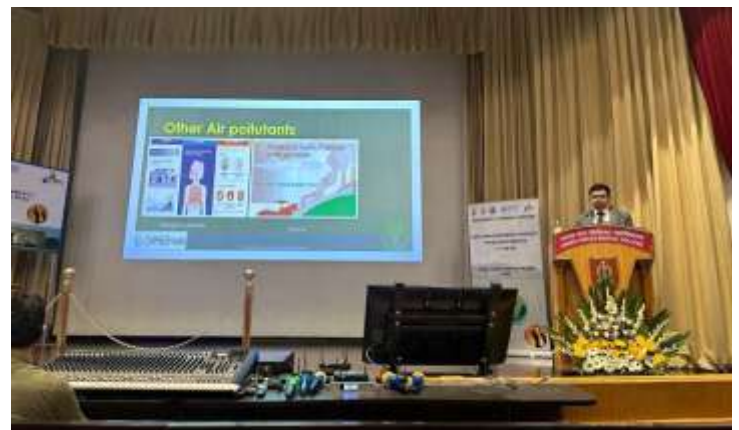
## CAPHER-INDIA ACTIVITIES

**Scientific session “Armed Forces Conference on Climate Change and Environmental Susceptibility: The Public Health Perspective”, Pune**

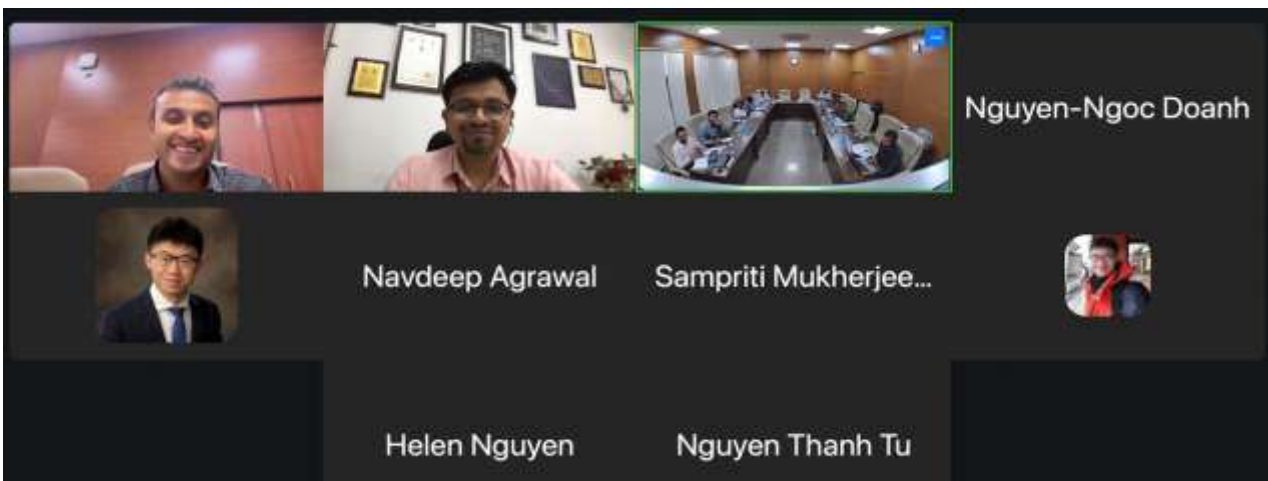
Dr. Harshal Ramesh Salve delivered a talk on the topic “Health Impact of Air Pollution- Evidences and Cues for Action” on 9 August 2024.

Environment is an important determinant of community health with mortality rate being 235 globally. Various health impacts of air pollution were discussed. Inter-sectoral coordination, community engagement, capacity building and working with national programmes is way forward. CAPHER India is a collaboration between AIIMS, New Delhi and IIT, Delhi.

Panel Discussion: The theme of the panel discussion was “Public Health Measures to Address the Impact of Climate Change on Population Health: Are we doing enough?”. The session was moderated by Retd. Col MP Cariappa and panellists of the sessions were Lt Gen AK Jindal, Retd Dr K Madan Gopal, Col Amitav Banerjee, Dr Harshal Salve and Dr. Ravindra Khaiwal. Dr. Harshal Ramesh Salve discussed how does climate change exacerbate air pollution and what specific health risks are associated with increased exposure to pollutants.

**Scientific session “Smart Transportation for Reducing Emissions and Congestion in Indian Cities (STREC)”, NOIDA, Uttar Pradesh**

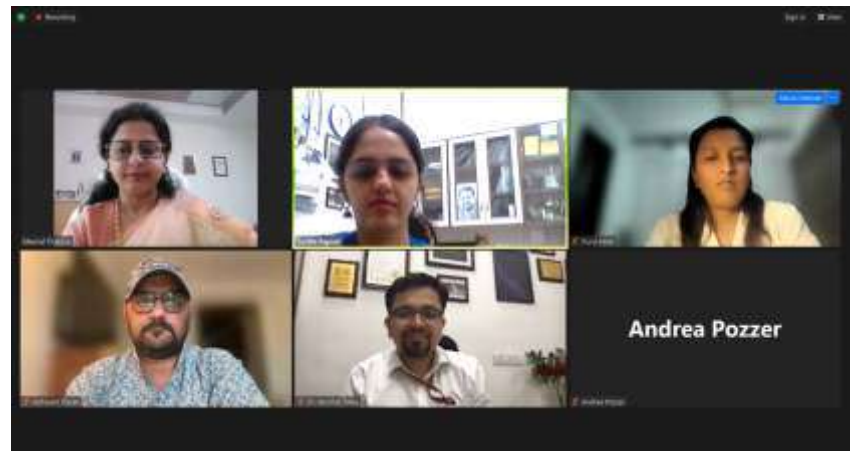
IIT Kanpur in collaboration with University of Illinois at Urbana Champaign (USA) organised one day workshop on the theme of Smart Transportation for Reducing Emissions and Congestion in Indian Cities (STREC). CAPHER India was represented by Dr. Harshal Ramesh Salve who delivered a talk on the topic “Health Impact of Air Pollution- Evidences and Cues for Action”. Air pollution is responsible for 1 in every 8th death in India, 2nd most common cause of DALY in India, 99% of India's population exposed to more than recommended ( $10 \mu\text{g}/\text{m}^3$ ). Impact of climate change is on all the organ system. The various measures that needs to be adopted for mitigation are community engagement, collaboration, generating local scientific evidence, capacity building, advocacy and communication. At the level of national programme level includes situation analysis, identifying risk reduction strategies, health system strengthening, monitoring and surveillance. Several activities have been conducted under CAPHER India like Multistake holder round table conferences, capacity building initiatives for early career researchers like webinars etc.



## CAPHR-INDIA WEBINAR SERIES

**Webinar 4 “Impact of Heat on health amidst higher Air Pollution exposure – Current evidences and cues for action”**

The 4th webinar was conducted on the topic “Impact of Heat on health amidst higher Air Pollution exposure – Current evidences and cues for action”. The speakers for the webinar were Dr. Andrea Pozzer, Germany; Dr. Abhiant Tiwari, NRDC; Dr. Purvi Patel, NCDC. The webinar aimed to understand the linkages between heat, air pollution and health outcomes. Climate change can pose a threat on universal health coverage. The need of the hour is to promote multi-sectoral coordination among Health care workers, scientists, environmentalist, researchers and policy makers. the policies of air quality and climate change should be developed together

**Webinar 5 “Impact of Air Pollution on Early Childhood Development – Current evidences and cues for action”**

The 5th webinar was conducted on the topic “Impact of Air Pollution on Early Childhood Development – Current evidences and cues for action”. The speakers for the webinar were Dr. Beate Ritz, UCLA; Dr. Sheffali Gulati, AIIMS; Dr. Harshal Ramesh Salve, AIIMS. The webinar aimed to understand the linkage between air pollution and early childhood development at national and international level. The reproductive outcomes of air pollution exposure pose a grave problem affecting greater parts of the world. Both indoor and outdoor air pollution has an impact on this vulnerable group. In spite of many evidences on this topic the policy makers are yet to take concrete actions and bring about major changes. The government needs to make arrangements as per the burden of disease and country specific air pollutants guidelines. There exists various scientific literatures but the early careers researcher still can focus their research on constituents of air pollution and its effect on neurodevelopmental disorders, biomarkers of neurological outcomes and other areas which are less explored.



## SCIENTIFIC ABSTRACTS

**Ambient and household air pollution exposure as determinants of acute respiratory infection among rural households of Jodhpur, Rajasthan - A case-control study.**

DOI Number: AHB/2023-24/01

**Authors:** Dr. Ranjitha R, Dr. Neeti Rustagi, Dr. Thamizhanban A, Dr. Pankaja Ravi Raghav

**Affiliation:** AIIMS, Jodhpur

Jodhpur, a city under the National Clean Air Programme, struggles with poor air quality. As part of the arid Thar Desert, Jodhpur's determinants of acute respiratory infections (ARI) may differ from other regions.

**Aim:** to investigate the exposure to ambient and indoor air pollution and determine its association with ARI in rural households of Jodhpur, Rajasthan.

**Objectives:** To determine the burden of ARI among these patients, identify risk factors for ARI, assess exposure to ambient and indoor air pollution in rural Jodhpur households, to determine the association between ARI and air pollution exposure.

**Methodology:** The case-control study will be conducted in rural households of Jodhpur, Rajasthan. A pre-tested, semi-structured, interviewer-administered questionnaire will be used to gather socio-demographic details, air pollution exposure (both indoor and outdoor), and respiratory morbidity history. Cases and controls will be selected according to a case definition, and air quality monitors will be placed indoors and outdoors of their houses with participants' consent to measure pollution exposure accurately. Data analysis will follow.

**Outcomes:** include identifying risk factors/predictors of ARI in rural households, measuring ambient and indoor air pollution exposure levels in the study population, and establishing the association between air pollution exposure and ARI.

Awarded by the National Institute for Health and Care Research (NIHR), United Kingdom, Royal Society of Tropical Medicine and Hygiene (RSTMH), London Early Career Grants Programme

**Health and Economic Benefits of reducing PM2.5 pollution in an Indian megacity**

DOI Number: AHB/2023-24/02

**Authors:** Lavanyaa V. P, Srikanth R

**Affiliation:** National Institute of Advance Studies, Indian Institute of Science Campus, Bangalore

Fine Particulate Matter (PM2.5) poses a significant public health hazard in India. While there are numerous studies on PM2.5 exposure assessment in India, there are only a handful of studies on health risk estimation.

**Aim:** This study addresses this critical gap by estimating the short-term effects on respiratory health in Bengaluru with the high spatial resolution PM2.5 model.

**Method:** A cross-sectional study was conducted in 1400 households in the city of Bengaluru. Time-weighted PM2.5 exposure for the survey respondents was derived from the PM2.5 model for 2019 based on residential and work/education locations. This study also used the Tobit model to estimate the economic benefits of reducing PM2.5 pollution

**Results:** Nearly 25% of the respondents had respiratory illnesses (RI). The study utilized a logit model to develop risk estimates for RI due to PM2.5 pollution. The logit model results revealed that higher levels of PM2.5 significantly increase the probability of respiratory illness, particularly among lower-income individuals. The OR of 1.38 (95% CI: 1.16-1.64) is observed for the probability of RI corresponding to an increment of 10  $\mu\text{g}/\text{m}^3$  in PM2.5 concentration. The Tobit model results show that a 10  $\mu\text{g}/\text{m}^3$  reduction in PM2.5 is associated with an estimated cost avoidance of Rs. 369 in public hospitals and Rs. 498.4 in private hospitals at an individual level.

The key findings of this study highlight the disproportionate economic burden on lower-income individuals for PM2.5-attributed respiratory illnesses.

## SCIENTIFIC ABSTRACTS

**Exploring association of Respiratory conditions and Health risk perception of biomass fuel with intent-to-use and willingness to pay for clean fuel in rural Jodhpur**

DOI Number: AHB3/2023-24/03

**Authors:** Dr. Rahul Solanki, Dr. Neeti Rustagi, Dr. Prasanna Thirunavukkarasu<sup>1</sup> Dr. Suman Saurabh

**Affiliation:** AIIMS, Jodhpur

Around 2.4 billion people worldwide use open fires or inefficient stoves fuelled by kerosene, biomass (wood, animal dung, and crop waste), and coal, which generates harmful household air pollution.

**Aim:** The current study explores association of Respiratory conditions and Health risk perception of biomass fuel with intent-to-use and willingness to pay for clean fuel in rural area of Jodhpur.

**Methodology:** The study will be conducted in rural blocks of Jodhpur.

**Outcomes:** findings of this study will help in understanding how the health risk perception influence households decision-making regarding the use of cleaner fuel and the barriers stopping them from shifting from biomass to cleaner fuel.

**Gender-based meta-analyses of death due to respiratory diseases**

DOI Number: AHB3/2023-24/04

**Authors:** Shobhna Shankar, Ranu Gadi

**Affiliation:** Amrita Institute of Medical Science, Kochi

Numerous governmental and private agencies/groups are relentlessly working towards reduction of air pollution by implementing various policies at local as well as global level, which ultimately aim at improving environmental and public health.

**Methods:** Daily PM<sub>2.5</sub> levels were curated for the functional monitoring sites out of total (40) CPCB sites in Delhi, for the duration 2015-2019. The death records due to lower and upper respiratory diseases and other respiratory ailments in females and males were analysed for Delhi and the world (as per data availability). Because of the presiding influence of COVID-19, the later years were not included in the study.

**Results:** In Delhi, the number of deaths due to lower respiratory diseases was found to have an increasing trend over time in both females (ranging from 583 to 910) and males (ranging from 1070 to 1733) in Delhi. The upper respiratory diseases showed overall decrease in death in both females (ranging between 633 and 44) and males (ranging between 1152 and 97). Globally, the number of deaths due to lower and upper respiratory diseases showed decreasing pattern in females (ranging between 1208347 and 1192961; 5240 and 4566, respectively) and males (ranging between 1325536 and 1301520; 6752 and 5770, respectively). The other respiratory ailments in Delhi and the world showed slight increasing trend accompanied with periodic decrease for both females (ranging between 3102 and 2416; 24608733 and 25840071, respectively) and males (ranging between 5207 and 3823; 29522043 and 30651223, respectively). The levels of PM<sub>2.5</sub> in Delhi were also studied in order to check the correlations, but little information was drawn regarding the temporal pattern of decrease over 2015 to 2019 (ranging from 135.12 and 104.45 ug/m<sup>3</sup>) due to improved policies. This may infer for chronic or accumulated impact of the inhaled PM<sub>2.5</sub> over time.

## SCIENCE NEWS

**Kochi intervention for tobacco smoke free homes (KIFT)- Project**

The project, "Effectiveness of Tobacco Smoke-Free Home Intervention in Partnership with Women's Self-Help Groups in the Slums of Kochi Corporation, Kerala: A Cluster Randomized Trial," aims to reduce indoor tobacco smoking and second-hand smoke (SHS) exposure, particularly among women and children. This study, a collaborative effort between Amrita Hospital Kochi, Kochi Corporation, and the National Health Mission (NHM), was funded by the Harvard T.H. Chan School of Public Health. Primary objective of the study was to determine the effectiveness of an intervention led by women's self-help groups to reduce indoor tobacco smoking by measuring urinary cotinine levels and PM 2.5 as an indicator of tobacco smoke in the home environment. A socio-ecological model was used to deliver the multipronged intervention at the individual, interpersonal and community level. The intervention, launched by Mayor, involves training self-help group members and ASHAs to conduct household surveys, sensitization, air quality monitoring using indoor air quality monitors, and lung function testing with COPD6 monitors, along with sample collection for urine cotinine analysis. Baseline data collection included demographics, smoking behaviour, indoor air quality and other health and environment related information of smokers and their families. The intervention featured health education using flipcharts, training on the health impacts of smoking and SHS exposure, the formation of children's groups called "Kuttikootam," and the distribution of educational materials. The intervention also incorporated the 3 A's model for smoking cessation—Ask, Advise, and Act. Monthly home visits by the ASHA-SHG team reinforce the message of not smoking indoors. Customized messages based on baseline survey findings were delivered, and two post-intervention surveys were conducted 6 months and 12 months after the intervention to assess the sustainability of effectiveness. Implemented in 30 clusters with 4,596 families starting in 2021, the study faced challenges due to the COVID-19 pandemic and floods but was successfully completed.

*Authors: Dr Aswathy S, Dr Navami S, Dr Sreelakshmi Mohandas, Dr Vishnu B Menon, Dr Jaideep C Menon*

**Knowledge and practices related to Ambient Air Pollution in an urban population in the Capital City of India**

Ambient Air Pollution (AAP) is major and challenging risk factor of ill health to address in low and middle income country like India. Community perception of air pollution, as well as health risk perception is crucial for formulating public health action driven policies. This study aimed to assess knowledge and practices regarding ambient air quality, its health impacts and mitigation measures in an urban community of National Capital of India, Delhi. A community based cross-sectional study using a semi-structured questionnaire was conducted among the population residing in resettlement colonies of South-East District of Delhi. Knowledge and practices related to Ambient Air Pollution were reported using descriptive analysis. Among the 300 participants enrolled in the study. Mean age (SD) of the participants in the study was 36.7 years (13.2) and both genders were equally represented. Of the study participants, 90% went to formal schooling. Vehicular emission was the commonest (88.3%) reported source of AAP followed by firecracker use and industrial emissions. Only 40% of the participants were aware of the health hazards of AAP. Breathing difficulty was the common reported health effect. Elderly and under five children were identified as vulnerable section of the population. Only 18.3% of the population were aware about the Air Quality Index and of which only four percent able to classify an air quality as per color coding. More than two-third of the participants had felt the need for reduction of AAP in their locality. However, only one-tenth of the participants practiced measures to reduce AAP, such as wearing masks in outdoors, closing windows/ doors and changing early morning exercise schedule. The study reported good knowledge regarding sources and impacts of APP but poorer practices of mitigation and protective measures in an urban population.

*Authors: Nagappan Madhappan, Harshal Ramesh Salve, Anand Krishnan, and Kiran Goswami*

## SCIENCE NEWS

**Air quality and health co-benefits of climate change mitigation and adaptation actions by 2030: an interdisciplinary modeling study in Ahmedabad, India**

Ahmedabad is a city in India where air pollution levels exceed national health-based standards—through an interdisciplinary modeling approach. The changes in fine particulate matter (PM<sub>2.5</sub>) air pollution and all-cause mortality in 2030 from increasing renewable energy use (mitigation) and expanding Ahmedabad's cool roofs heat resilience program (adaptation) were quantified. Local demographic and health data was applied to compare a 2030 mitigation and adaptation (M&A) scenario to a 2030 business-as-usual (BAU) scenario (without climate change response actions), each relative to 2018 pollution levels. The 2030 BAU scenario results in an increase of PM<sub>2.5</sub> air pollution of 4.13  $\mu\text{g m}^{-3}$  from 2018 compared to a 0.11  $\mu\text{g m}^{-3}$  decline from 2018 under the 2030 M&A scenario. Reduced PM<sub>2.5</sub> air pollution under 2030 M&A results in 1216–1414 fewer premature all-cause deaths annually compared to 2030 BAU. Achievement of National Clean Air Programme, National Ambient Air Quality Standards, or World Health Organization annual PM<sub>2.5</sub> Air Quality Guideline targets in 2030 results in up to 6510, 9047, or 17 369 fewer annual deaths, respectively, relative to 2030 BAU. This comprehensive modeling method is adaptable to estimate local air quality and health co-benefits in other settings by integrating climate, energy, cooling, land cover, air pollution, and health data. The city-level climate change response policies can achieve substantial air quality and health co-benefits. Such work can inform public discourse on the near-term health benefits of mitigation and adaptation.

*Limaye VS, Magal A, Joshi J, Maji S, Dutta P, Rajput P, Pingle S, Madan P, Mukerjee P, Bano S, Beig G. Air quality and health co-benefits of climate change mitigation and adaptation actions by 2030: an interdisciplinary modeling study in Ahmedabad, India. Environmental Research: Health. 2023 Mar 1;1(2):021003.*

**Mitigation pathways towards national ambient air quality standards in India**

Exposure to ambient particulate matter is a leading risk factor for environmental public health in India. While Indian authorities implemented several measures to reduce emissions from the power, industry and transportation sectors over the last years, such strategies appear to be insufficient to reduce the ambient fine particulate matter (PM<sub>2.5</sub>) concentration below the Indian National Ambient Air Quality Standard (NAAQS) of 40  $\mu\text{g}/\text{m}^3$  across the country. Various pathways towards achieving the NAAQS in India in the context of the dynamics of social and economic development needs to be explored. The exposure to ambient air pollution in the current legislations and alternative policy scenarios based on simulations with the GAINS integrated assessment model was estimated. The analysis reveals that in many of the Indian States emission sources that are outside of their immediate jurisdictions make the dominating contributions to (population-weighted) ambient pollution levels of PM<sub>2.5</sub>. Consequently, most of the States cannot achieve significant improvements in their air quality and population exposure on their own without emission reductions in the surrounding regions, and any cost-effective strategy requires regionally coordinated approaches. Advanced technical emission control measures could provide NAAQS-compliant air quality for 60% of the Indian population. However, if combined with national sustainable development strategies, an additional 25% population will be provided with clean air, which appears to be a significant co-benefit on air quality (totaling 85%).

*Purohit P, Amann M, Kieseewetter G, Rafaj P, Chaturvedi V, Dholakia HH, Koti PN, Klimont Z, Borken-Kleefeld J, Gomez-Sanabria A, Schöpp W. Mitigation pathways towards national ambient air quality standards in India. Environment international. 2019 Dec 1;133:105147.*

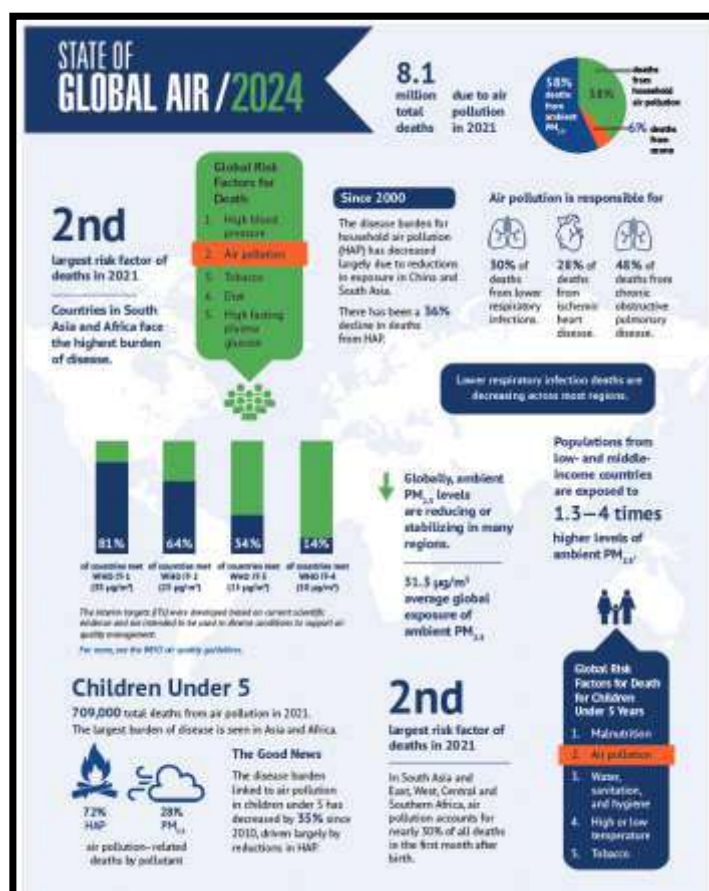


## SCIENCE NEWS

## State of Global Air Report 2024

The State of Global Air 2024 reports provides a comprehensive analysis of data for air quality and health impacts for countries around the world. The analysis finds that:

- Air pollution accounted for 8.1 million deaths globally in 2021, becoming the second leading risk factor for death, including for children under five years. Of the total deaths, non-communicable diseases including heart disease, stroke, diabetes, lung cancer, and chronic obstructive pulmonary disease (COPD) account for nearly 90% of the disease burden from air pollution.
- In 2021, more than 700,000 deaths in children under 5 years were linked to air pollution; this represents 15% of all global deaths in children under five.



Available at :

<https://www.stateofglobalair.org/resources/report/state-global-air-report-2024>

## High ambient air pollution erodes the benefits of using clean cooking fuel in preventing low birth weight in India

A large fraction of the population in rural India continues to use biomass fuel for cooking and heating. In-utero exposure to the resulting household air pollution (HAP), is known to increase the risk of low birth weight (LBW). Mitigating HAP, by shifting to clean cooking fuel (CCF), is expected to minimize the risk associated with LBW. However, India also has high levels of ambient air pollution (AAP). Whether exposure to AAP modifies the effect of reducing HAP by switching to CCF on LBW is not known. The knowledge gap was addressed by analyzing the National Family Health Survey (2019–21) data of the most recent full-term, singleton, live births from rural households born after 2017 (n = 56 000). In-utero exposure to AAP was calculated from satellite-derived ambient fine particulate matter (PM<sub>2.5</sub>) concentration at the level of the primary sampling unit for the pregnancy duration of the mothers. The moderation by ambient PM<sub>2.5</sub> level on the odds of LBW among CCF users was examined by logistic regression analysis with interaction. The adjusted odds ratio (aOR) of LBW was 7% lower among users of CCF. At the lowest Decile (20–37 µg m<sup>-3</sup>) of ambient PM<sub>2.5</sub> exposure, the aOR of LBW among CCF users was 0.83 (95% CI:0.81–0.85). At every 10th percentile increase in ambient PM<sub>2.5</sub> exposure (in the range 21–144 µg m<sup>-3</sup>), aOR increased gradually, reaching the value of 1 at PM<sub>2.5</sub> level of 93 µg m<sup>-3</sup>. The benefit of using CCF during pregnancy may be downgraded by moderate to high ambient PM<sub>2.5</sub> exposure.

Available at : Parchure R, Chaudhary E, Darak S, Ghosh S, Kumar A, Dey S. High ambient air pollution erodes the benefits of using clean cooking fuel in preventing low birth weight in India. *Environmental Research Letters*. 2024 Jan 9;19(1):014075.

## SCIENTIFIC DATABASES

### Database of South Asia – Air Pollution and Health (DoSAAH)

The Health Effects Institute has developed the Database of South Asia – Air Pollution and Health (DoSAAH), an interactive and comprehensive bibliographic resource on air pollution and its health impacts in South Asia. The database includes peer-reviewed studies and select gray literature from Afghanistan, Bangladesh, India, Nepal, Pakistan, and Sri Lanka, sourced from PubMed, Web of Science, and Google Scholar. It offers free public access with customizable filters by criteria such as publication date, country, study type, and health outcome. Designed to support researchers, policymakers, and public health professionals, DoSAAH serves as a valuable tool for accessing targeted evidence on air quality and health across the region. For inquiries or to submit additional articles, please contact Dr. Abinaya Sekar at [asekar@healtheffects.org](mailto:asekar@healtheffects.org). We also welcome collaborative opportunities to disseminate and utilize this database for wider applications. Explore the database here: <https://www.healtheffects.org/global/database-south-asia-air-pollution-and-its-health-effects-dosaah>



### Database of India – Air Pollution and Health

CAPHER India Secretariat has developed Database of India – Air Pollution and Health, an interactive and comprehensive bibliographic resource on air pollution and its health impacts in India. The database includes peer-reviewed studies and select gray literature sourced from PubMed, Web of Science, and Google Scholar. It offers free public access with customizable filters by criteria such as publication date, country, study type, and health outcome. It has been designed for early career researchers, scientists, medical professionals and environmentalists. Explore the database here: <https://capherindia.org/spatial-bibliography>



## CENTRE OF EXCELLENCE

### Centre for Excellence for Air Pollution and Health under National Program for Climate Change and Human Health

AIIMS, New Delhi has been declared as The Centre for Excellence for Air Pollution and Health. This centre has been developed in collaboration with National Centre For Disease Control (NCDC), Delhi is under administrative control of the Director General of Health Services, Ministry of Health and Family Welfare, Govt. of India. The focus areas of this collaboration is as follows:-

- To update subject specific national health adaptation plan (HAP) on air pollution and human health.
- To develop Standard Operating Procedures (SOPs) related to implementation of action plan and subject related advisory /guidelines on air pollution
- To support States/ Districts for developing health action plan on air pollution to address the concern in the State
- To develop training module for State Programme Officials including Medical Officers on air pollution health concerns
- To build capacity for State Programme Officials including Medical Officers on air pollution health concerns
- To support States in setting up of a functional surveillance system on air pollution related illnesses
- To develop IEC on air pollution related illnesses
- Monitoring and Evaluation of programme activities through field visits to States
- To develop reports, newsletters, articles, publication on air pollution and health related matters

**Centre is located at Centre for Community Medicine, AIIMS, New Delhi. Dr Harshal Ramesh Salve is the principal investigator.**

MEDIA COVERAGE

प्रदूषण नियंत्रण व जन स्वास्थ्य के लिए सरकार का सहयोग करेंगे डॉक्टर-इंजीनियर

नई दिल्ली, 19 नवम्बर (नवीन टाइम्स): नया प्रदूषण के चलते दुनिया में करीब 60 लाख लोग मर जाते हैं, भारत में करीब 24 लाख लोग प्रतिवर्ष अपनी जान गंवा देते हैं। (पृष्ठ 1)



प्रदूषण से निपटने के लिए एम्स दिल्ली और आईआईटी दिल्ली के विशेषज्ञ बनाएंगे गाइडलाइंस

विश्वीय करने वाली नीति के साथ राष्ट्रीय स्तर पर समन्वय का अभाव है। इस कारण जनजागृति, परिवहन से लेकर पर्यावरण संरक्षण और प्रदूषण नियंत्रण के अनेक प्रभावी योजना अस्तित्व में नहीं आ पा रही हैं।

नई दिल्ली, 19 नवम्बर (नवीन टाइम्स): नया प्रदूषण के चलते दुनिया में करीब 60 लाख लोग मर जाते हैं, भारत में करीब 24 लाख लोग प्रतिवर्ष अपनी जान गंवा देते हैं। (पृष्ठ 1)

दूर तक में अस्थिर प्राकृतिक आपूर्तिकार संभव (एमएस डिल्ली) के अन्वय विरोधियों और भारतीय प्रौद्योगिकी संस्थान (आईआईटी दिल्ली) के प्रौद्योगिकी विशेषज्ञों के साथ देश के प्रमुख शोधकर्ताओं और नीति निर्माताओं ने भेंट किया। इस दौरान एम्स के अध्यक्ष डॉ. विवेक कुमार ने कहा कि देश में प्रदूषण व स्वास्थ्य पर दुष्प्रभाव डालने वाले तत्वों को

एडिक्ट एयर क्वालिटी मॉनिंग लगाई गई है जो मॉनिंग भूतकर्मों (दोष 2.5 व पीएम 10) के साथ सल्फर डीऑक्साइड, नाइट्रोजन डीऑक्साइड, ओजोन, कार्बन मोनोऑक्साइड समेत अन्य गैसों के स्तर का मापन भी करते हैं। इस मॉनिंग पर निगरानी रखने की जिम्मेदारी एनडीए प्रशासक कार्यालय और सार्वजनिक सेवा विभाग को सौंपी गई है। ये स्तर जब प्रदूषण स्तर बढ़ते हैं तो प्रदूषण से निपटारे के लिए एनडीए प्रशासक कार्यालय और सार्वजनिक सेवा विभाग को सौंपी गई है। ये स्तर जब प्रदूषण स्तर बढ़ते हैं तो प्रदूषण से निपटारे के लिए एनडीए प्रशासक कार्यालय और सार्वजनिक सेवा विभाग को सौंपी गई है।

...And patients start lining up at hospitals with breathing woes

Andia.Jaiswal @timesgroup.com

New Delhi: People are approaching hospitals in the city with complaints of respiratory discomfort, attributable perhaps to the worsening air quality in Delhi with the onset of winter.

- DOs: Follow a healthy lifestyle, Nutritious diet, including fruits and plenty of liquids, Breathing exercises, Contact your doctor in case of wheezing, breathing difficulty, fever and inability to lie down, Get vaccinated, Flu vaccination must for all high-risk patients, Pneumonia vaccine for people above 65. DONTS: Don't go for early morning walks when there is a possibility of smog.



TIMES VIEW: The rising number of patients of respiratory illnesses underlines that the city is fighting a losing battle against toxic air. With winter approaching, the situation will only get worse. In 2021, studies showed that the average lifespan lost to pollution was roughly 10 years in the city. Two years later, it jumped to 12 years. TDH has repeatedly said that authorities should get into mission mode and that workable solutions, Delhi deserves and desperately needs better air.

Phase II of plantation drive launched

Environment minister Gopal Rai on Monday launched the second phase of the tree plantation drive, from northeast Delhi's Gurgaon, under the winter action plan. More than 80 lakh saplings have been planted this year by Delhi government. This year, the government has set a target of planting 52 lakh saplings. The target is being accomplished by the green agencies of all the 21 concerned departments. More than 60 lakh saplings have been planted this year and hence, about 77% of the target of tree plantation has been achieved. Apart from this, 54 lakh saplings and shrubs are being planted by the NDMC, said Rai. He said he believes that if we all include tree planting into our culture and daily lives, we will be able to solve the pollution issue.

advised people with chronic bronchitis and asthma, cardiac conditions and diabetes to be extra careful at the onset of winter. He also took the opportunity to launch the winter action plan. He said that the government is taking various steps to reduce air pollution. He said that the government is taking various steps to reduce air pollution. He said that the government is taking various steps to reduce air pollution.

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Feeling anxious? Toxic air could be to blame

Andia.Jaiswal @timesgroup.com

New Delhi: Long term exposure to air pollution could lead to higher risk of depression and anxiety, besides respiratory disorders. People who breathe in polluted air experience changes within the brain that control the emotions and as a result their chances of developing anxiety and depression are much higher than those who breathe in the cleaner air, said doctors on the eve of World Mental Health Day.

HAVING A BAD-AIR DAY?

- A study from researchers at Harvard, published in March 2023, adds to the evidence connecting exposure to air pollution (small particulate matter (PM2.5), nitrogen oxide and nitrogen dioxide) to increased risk of dementia. A study published in journal NeuroToxicology reveals that people who breathe polluted air are more likely to develop mental health problems than those who breathe clean air. Some researchers have associated air pollution with higher levels of stress, psychological distress, increased



risk of dementia and Alzheimer's and depression. A study published in Environmental Health Perspectives found an association between short-term exposure to elevated levels of air pollution and increased emergency room psychiatric visits among children.

sky causes frustration and anxieties about our health." Rastogi said going out and exercising on heavily polluted days has to be limited, but one should ensure activity indoors, say through yoga, dance and anything that gets one moving. "Exercise helps us stay positive in an environment of doom and gloom," he said. The review of existing literature on the subject claims that exposure to air pollution increases chances of depression by 1%, noted Harshal Ramesh Salve, additional professor, community medicine, AIIMS. Like any other body part, air pollution, particularly particulate matter, can hit the brain, causing depression, he said, adding that neurodevelopment-related diseases are also associated with exposure to air pollution.

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हिन्दुस्तान

एम्स में देश के बड़े संस्थानों के प्रोफेसरों, विशेषज्ञों और वैज्ञानिकों ने बैठक करके कई सुझाव दिए धूल और जाम के खात्मे दिल्लीवालों को धूपखिलने, हवा चलने से मामूली राहत

नई दिल्ली, प्रदूषण नियंत्रण और जन स्वास्थ्य के लिए सरकार का सहयोग करेंगे डॉक्टर-इंजीनियर

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पराली नहीं, स्थानीय कारकों से गैस चेंबर बनी दिल्ली

केंद्रीय प्रदूषण नियंत्रण बोर्ड ने खुद 'गैस चेंबर' कि मौजूदा साल और बीते दो वर्षों में भी वही बी बसाया

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The CAPHER website can be followed  
at the given mentioned link:  
<https://www.capherindia.org>

A social media account for CAPHER-India  
was made on X. The Xhandle can be  
followed for updates on CAPHER activities.

### How to Join CAPHER-India network:

- Write to CAPHER Secretariat - [capherindia@gmail.com](mailto:capherindia@gmail.com)
- To join the network, please fill the google form -  
<https://forms.gle/X1UFRX5XSaHMBQY7A> OR
- Scan the QR Code -
- Express your specific area of interest
- Share brief summary of work done so far



<https://www.capherindia.org>

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