



# NPCCHH Newsletter



National Programme  
on Climate Change  
and Human Health

Quarterly Newsletter from the National Programme on Climate Change and Human Health (NPCCHH), National Centre for Disease Control (NCDC)

## Message from Director, NCDC



to achieve global commitments.

The National Programme on Climate Change and Human Health (NPCCHH) has completed two years. The journey so far has resulted in some important accomplishments. I am delighted to note that NPCCHH at the Centre for Environmental and Occupational Health, Climate Change and Health will be publishing a quarterly newsletter. This newsletter will be a platform to present progress updates from NPCCHH teams and disseminate technical information. As we are determined to strengthen our health care system to withstand the impact of climate change on health, this newsletter will serve as documentation of our efforts and a tool to assess our resolve

I encourage state programme teams to contribute to the newsletter regularly. I congratulate NPCCHH and look forward to reading about programme activities from across the country.

## Updates from NPCCHH

### **World Environment Day 2021**

The World Environment Day (WED), observed on 5th June, is the United Nations' principal entity for encouraging worldwide awareness and action for the environment. Year 2021 marks the beginning of the [UN Decade on Ecosystem Restoration](#) (2021-2030), a global effort to prevent, halt and reverse ecological damage for the benefit of the people and the planet as a whole. In the last few years, the world has witnessed an increase in global temperatures, melting of glaciers, forest fires, intensified cyclonic activities, and most recently, COVID-19 pandemic. These events have highlighted the need for urgent actions on conserving ecosystems and strengthening health care preparedness. A green and resilient health sector can play a dual role in climate response, through adaptation to climate sensitive diseases (CSD) and disasters, and by reducing its contribution to environmental emissions.

Observance of days of public health importance, like World Environment Day, are important tool for NPCCHH to generate awareness on climate change related health issues and highlight green and resilient measures that the health sector should undertake in response. To this effect, a

## In this issue

Updates from NPCCHH	1
Updates from States and Union Territories	4
Report Highlights	5
Climate-Smart Action	5
Surveillance Report	6
Special Segment	7
Upcoming Events & Activities	7
IEC on Air Pollution	8



Health care staff participating in World Environment Day activities

two-hour webinar on "Ecosystem Restoration: Role of Health Sector" was organized on June 4, 2021, under the programme. It was facilitated by Dr. Aakash Shrivastava (Additional Director and Head) and Dr. Rameshwar Sorokhaibam (Deputy Director) of the Centre for Environmental Health and Occupational Health, Climate Change and Health division (CEOH-CCHH), NCDC. More than 300 participants attended the webinar. Webinar recording will be available on NPCCHH's webpage. The event's objective was to increase awareness and motivate concerned stakeholders including state and district programme officials to undertake various green and climate resilient measures at health facility level to contribute in ecosystem restoration. The webinar began with a message from Mr. Lav Agarwal, the Joint Secretary (MoHFW), on how climate change threatens health systems worldwide, and immediate steps are needed to mitigate the impacts. He acknowledged how the NPCCHH programme is meaningfully contributing to building a climate-resilient health system in the country. In his inaugural speech, Dr. Sujeet Singh, Director, NCDC, welcomed all the panelists and participants.

Five keynote speakers from various government and private institutions shared their technical expertise and experiences in building green and climate resilient healthcare facilities. Dr. Poornima Prabhakaran (Additional Professor, Head, Environmental Health & Deputy Director, Centre for Environmental Health) from the Centre of Excellence on Green and Climate Resilient Infrastructure under NPCCHH programme-presented on the role of Health sector in the Ecosystem Restoration in the country. It gave the overall perspectives of the need for the green and climate resilient measures in the health sector. Dr. Renu Gur (Consultant and Head, Department of Microbiology, Dr. Baba Ambedkar Hospital of the Delhi Government) narrated on various Green Hospital initiatives implemented in the government Dr. Baba Saheb Ambedkar Hospital, Delhi which included, among others, biomedical waste management, solarization and kitchen gardening. The hospital is an inspiring example

for adopting such measures in the public healthcare facilities in the country. Mr. Thulasiraj Ravilla (Director-Operations, Aravind Eye Care System) shared how systematically switching to renewable sources, implementing design strategies for reducing carbon footprint in service delivery (streamlined patient flow, efficient supply chain for spectacles delivery, reduced patient travel through a network of Vision Centers, clinical protocols for comprehensive care in a single visit) has improved quality of care and developed an environmentally sustainable eye care delivery. The model followed by Aarvind Eye Care Hospitals is an excellent example of learning from the private sector in this area. Dr. Kalaiselvi (Assistant Professor, Department of Biochemistry, Government Mohan Kumaramangalam Medical College Hospital, Tamil Nadu) focused on green building design and environmentally friendly housekeeping measures taken in the hospital. Ms. Elena Villalobos Prats (Technical Officer, Lead for Capacity Building and Country Support on Climate Change and Health, World Health Organization (WHO), Geneva) presented the WHO guidance and checklists on building climate resilient healthcare facilities.



Panelists from "Ecosystem Restoration: Role of Health Sector" webinar

After presentations from subject experts, State Nodal Officers-Climate Change (SNO-CC) from states of Kerala, Kashmir division (Jammu and Kashmir), Karnataka, Gujarat and Chhattisgarh shared programme related activities and best practices from

their states contributing to NPCCHH's key objective of strengthening health care system through Green and Climate Resilient measures. Dr. Manu M S (Kerala) highlighted development of flood resilient health care facilities through structural (flood resistant walls, shifting provisions) and non-structural (early warning system, inter-departmental coordination, setting ward level rapid response teams) measures taken at Pozhuthana Primary Health Centre, Kerala. Dr. Umang Mishra (Gujarat) talked about heat resilient measures (rooftop whitewash, rooftop solar panels and kitchen garden) and use of electric transport within large tertiary government health care facilities. Dr. Kamlesh Jain (Chhattisgarh) informed about progression of solarization in government health centres in the state and their reported benefits. Dr. Veena V (Karnataka) presented on progress in implementing energy efficient, solarization and water conservation initiatives in state government hospitals. Dr. S M Kadri (Kashmir division, J&K) shared the experience of solarization at the sub-district hospital, Yaripora.

Other panelists Dr. Himanshu Bhushan (Senior Advisor, National Health Systems Resource Centre) and Dr. L. Swasthicharan (Director, Emergency Medical Relief, MoHFW) gave valuable inputs. This event was jointly organized by NPCCHH team and WHO-India office.

A post-webinar survey was conducted. The survey result (n=20) suggests, from seven elements of climate-friendly hospitals<sup>1</sup>, most states are showing interest in adopting following green measures in the health sector—energy efficiency (85%), water conservation (70%), green building design (60%) and alternative energy generation (60%). Few states were also interested in adopting measures related to waste management (45%), transportation (25%) and sustainable food (10%) supply. If adopted in the health sector, all the above measures can help to decrease the carbon emissions from the health sector and contribute to mitigate the impact of climate change.

## **Review Meetings with States**

State counterparts under a national programme are an essential component in implementing the programme activities up to the community level throughout the state. Under NPCCHH, presently states and UTs are recommended to conduct relevant IEC, capacity building and health care strengthening activities on CSD, mainly related to air pollution and extreme heat. Action plans including updated surveillance data collection formats on acute respiratory illnesses (hospital-based sentinel surveillance) and heat related illnesses (seasonal, vertical surveillance) were disseminated and training was provided by NPCCHH.

Annual review meetings were held with nodal officers from all the states and union territories regarding programme implementation status over the 2020-21 financial year. The one-on-one meetings were held virtually in April-May 2021. Most states were able to conduct IEC activities on air pollution and heat related illnesses through digital or print media. However, plans for training, sensitization and surveillance activities were greatly impacted by COVID-19 pandemic as health departments were involved in the outbreak response.

## **Meetings with Centers of Excellence**

Centers of excellence (CoE) are well known institutes across the country, identified to provide technical expertise in formatting specific, detail health adaptation plans on climate sensitive diseases and issues at national level and in strengthening state action plans drafted by all states/UTs.

A meeting was held on April 8, 2021 with representatives from CoE and other programme partners. The objective was to inform them about re-prioritization of activities and deliverables (short and long term) under NPCCHH. The representatives also provided inputs on facilitating knowledge transfer, inter-departmental coordination and the scope of different activities under the programme.

---

---

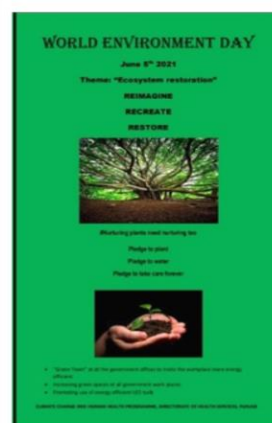
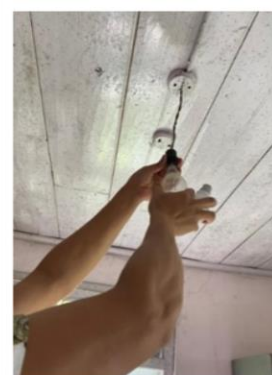
<sup>1</sup>Healthy Hospitals – Healthy Planet – Healthy People. Addressing climate change in health care settings. A discussion draft paper published by the World Health Organization and Health Care Without Harm



## Updates from States and Union Territories

Every year NPCCHH observes World Environment Day with state officials under the programme. This year, although marred by COVID-19 pandemic, many state nodal officers-climate change organized and participated in WED activities. Resonating with the theme of Ecosystem Restoration, tree plantation drives at different public health facilities were carried out. Teams planted trees native to their regions that would allow fast growth and other benefits. Many states reported creating a 'green' team, sending green messages, creating printer policies and replacing traditional light bulbs to LED at their workplaces. At the health facility level, some states pledged to conduct energy audits and planting activities and few pledged to audit water usage, display AQI/temperature outside the facility, and initiate green procurement activity at selected health facilities. A few states organized community awareness through poster making/drawing competitions and talk shows on TV/radio/social media.

The NPCCHH team extends appreciation to all the state and district officers for their efforts in observing World Environment Day 2021.



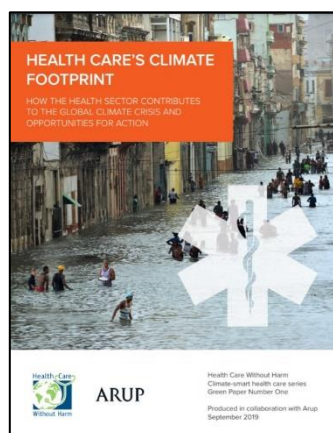
Glimpses of World Environment Day activities from states (from top left): Plantation of urban jungle, community awareness, energy efficient measures, poster competition, pledge to adopt environmentally-friendly measures, public messaging, community participation, health staff sensitization.

## Report Highlights

### **Health Care's Climate Footprint**

*How the health sector contributes to the global climate crisis and opportunities for action.*

This research and policy paper, the first in a series, focuses on health care's climate footprint and outlines policy recommendations that the health sector can take to align itself with the ambition of the Paris Agreement while simultaneously achieving global health goals.



Each country's health sector contributes to global emissions while providing care and procuring products, services, and technologies through electricity consumption, product manufacturing, waste disposal etc. With detailed assessment of direct and indirect

emissions related to health services and health care spending, the paper presents a ranking of 43 countries by their country-wide and health sector specific as per capita and overall greenhouse gas emissions and climate footprint. It proposes six action areas—Reduce health care's climate footprint, support societal transition to clean energy, define a road map to zero emissions, develop action plans for a climate smart health system and deepen research on climate change and health.

For details visit [Health Care's Climate Footprint](#).

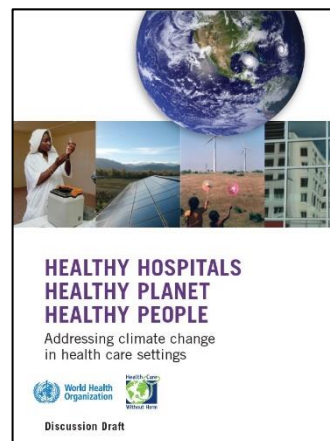
### **Healthy Hospital Healthy Planet Healthy People**

*Addressing climate change in health care setting*

This discussion draft paper focuses on specific actions and examples of change in the health-care setting around the world. It emphasizes the urgent need for reducing emissions by the health care system and recounts its health, economic and social co-benefits.

Most importantly, it outlines seven elements of climate-friendly hospitals—green building design, energy efficiency, alternative energy generation, transportation, food, water and waste management. These along with precise actionable points and specific examples of transformation are sure to empower stakeholders in the health sector to be leaders of climate action.

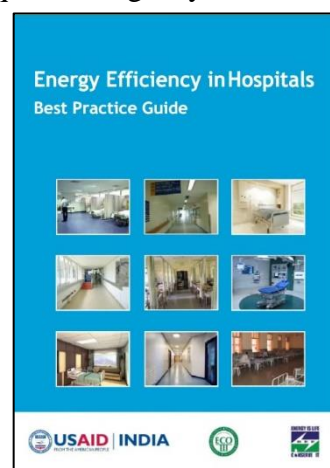
To know more read: [Healthy Hospitals Healthy Planet Healthy People](#).



## Climate-Smart Action

### **Energy Audit**

Energy efficiency is essential for reducing health care's climate footprint. Energy audit, a process of identifying all energy end-uses in the facility, estimating the amount of energy used by each end-use and determining the amount of energy use in relation to desirable values, is the first step towards knowing baseline energy usage. Based on this assessment, health facilities can develop action plans to reduce energy wastage and consumption. An energy audit can be conducted in-house or by a qualified agency. There are many ways in which a health facility can conduct an energy audit and create facility-specific plans to reduce consumption of energy. Visit [Energy Efficiency in Hospitals: Best Practice Guide](#) published by Bureau of Energy Efficiency (BEE), India for more information.



# Surveillance Report

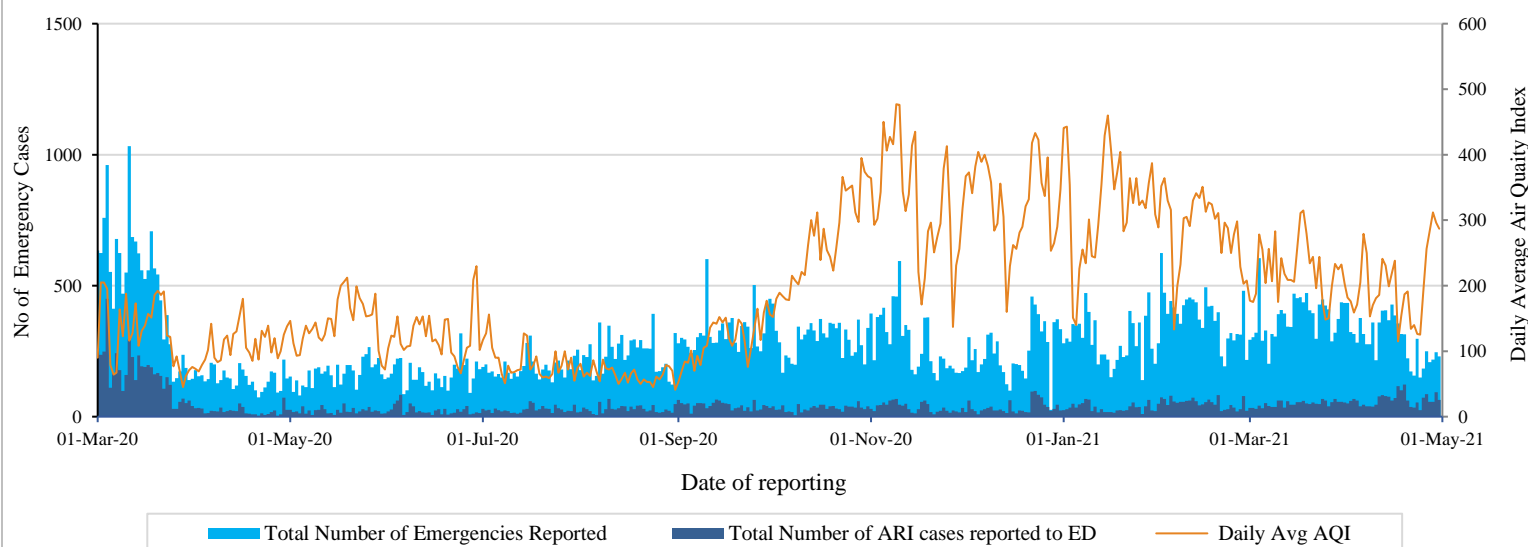
## Acute Respiratory Illness Sentinel Surveillance Report, Delhi, 2020-21

The Acute Respiratory Illness (ARI) Sentinel Surveillance is being conducted to monitor trends in daily ARI emergency cases with daily average Air Quality Index (AQI) in cities that are identified as non-attainment cities under the National Clean Air Program. This report includes surveillance data from six sentinel sites from tertiary care government hospitals, in Delhi.

**AQI:** From January 2020 to April 2021, daily average AQI of the city of Delhi demonstrated seasonal variation annually, i.e., higher air pollution levels during winter months (September to January) similar to that observed in previous years including 2019. The AQI suddenly dropped to less than 100 (satisfactory category) from March 25, 2020, likely due to COVID-19 related mobility restrictions. Since October 2020, an increase in daily average AQI has been observed which has often remained higher compared to winter 2019 with at least 15 days in a month with AQI 301 to 500 (very poor to severe categories).<sup>1</sup>

**Proportion of ARI Emergency to Total Emergency cases:** In 2019, proportion of ARI cases followed the pattern of AQI variation. However, this pattern was not observed in reported data in 2020-21 due to reduced reporting by hospitals when they became COVID-19 care centres. All emergency cases and proportion of ARI cases dropped suddenly after March 25, 2020 to <200 emergency visits/day and it remained <400 average visits/month compared to 400-800 average visits in months preceding March 2020.

**Time-series of Average Daily AQI vs. Daily Emergency and ARI Cases in Tertiary Care Government Hospitals, Delhi, March 2020-April 2021**



**Time series graph:** Trend of AQI in 2020 followed seasonal increase in AQI in winter months. The pattern of ARI cases had followed similar pattern to AQI in early 2020, however, this pattern is not apparent after March 2020 due to considerably reduced reporting by sentinel hospitals.

### Action taken:

1. Findings were shared with NCR state with a request to take necessary mitigation and adaptation measures
2. Feedback provided to stakeholders such as MoEFCC and ICMR for taking necessary mitigating and research measures
3. Participating hospitals requested to prepare for seasonal increase of footfall of acute respiratory emergencies

<sup>1</sup>For AQI categorization, its health impact and precautionary advice, refer to page 9 of this newsletter.



## Special Segment

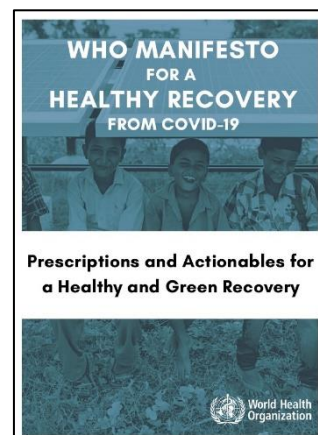
### COVID-19 and Climate Change

*"The pandemic is a reminder of the intimate and delicate relationship between people and planet. Any efforts to make our world safer are doomed to fail unless they address the critical interface between people and pathogens, and the existential threat of climate change, that is making our Earth less habitable."*

WHO Director-General Dr. Tedros Adhanom Ghebreyesus.  
Address to the 73rd World Health Assembly. May 18<sup>th</sup> 2020.

COVID-19 has emerged as the greatest public health challenge of recent times. Nonetheless, climate change, with its multidimensional impact on health, has remained an insurmountable challenge. Globally, extreme heat conditions are projected to be the next big killer following COVID-19. Moreover, extreme heat conditions will also lead to water scarcity, wildfires, damage to food crops, increased energy demand etc. further increasing the burden on global health systems. In addition, a significant correlation has been found between air pollution and COVID-19 infections and mortality. Both, COVID-19 and climate change, warrant rapid strengthening of health care systems. Hence, recovery from the pandemic is invariably intertwined with our climate response through our decisions and investments.

[WHO's manifesto for Healthy Recovery from COVID-19](#) provides prescriptions and accompanied actionable, practical steps to create a healthier, fairer and greener world while investing in maintaining and rescuing the economy hit by the effects of COVID-19.



## Upcoming Events & Activities

- |                |   |
|----------------|---|
| July 2021      | <ul style="list-style-type: none"><li>• Workshop on Early Warning Signal for Dengue &amp; other Arbo-virus outbreaks</li><li>• Seminar on Capacity Building on Health Sector Action Plan for Preparedness and Response to Heatwave</li><li>• Dissemination of National Action Plan on Heat Related Illnesses and comprehensive Health Adaptation Plan for Diseases due to Air Pollution</li></ul> |
| August, 2021   | <ul style="list-style-type: none"><li>• Training of trainers on Climate Change and Human Health Issues</li></ul>  |
| September 2021 | <ul style="list-style-type: none"><li>• National review meetings with states on NPCCHH progress</li><li>• Observe International Day of Clean Air for Blue Skies (September 7, 2021)</li><li>• Scale up IEC on air pollution related illnesses and monitoring of acute respiratory illness cases in sentinel hospitals</li></ul>   |



स्वास्थ्य एवं परिवार कल्याण मंत्रालय  
भारत सरकार



## समझदार बनें... प्रदूषण के असर से बचें

**प्रदूषित हवा  
स्वास्थ्य के लिए  
हानिकारक है**

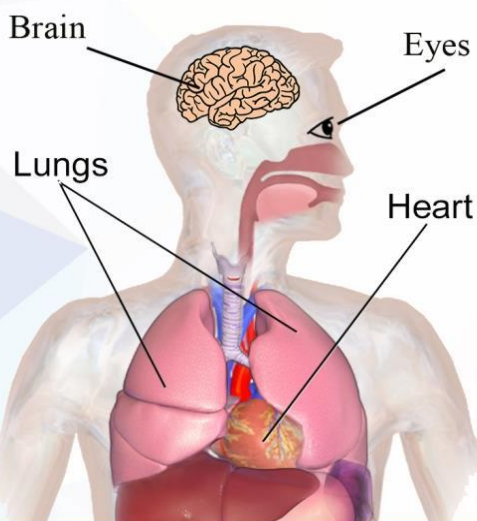


[www.mohfw.gov.in](http://www.mohfw.gov.in)





Ministry of Health and  
Family Welfare  
Government of India



**Pollution Harms You**

# Air Pollution

## Act to protect your health

### Check the Air Quality Index Level

Air Quality Index (AQI)# (Pollution level)	Possible Health Consequences	Advice for	
		General Population	Vulnerable Population*
<b>Good</b> (0-50)	Low risk	No special precautions	No special precautions
<b>Satisfactory</b> (51-100)	Minor breathing discomfort in vulnerable population*	No special precautions	Reduce prolonged or strenuous outdoor physical exertion
<b>Moderate</b> (101-200)	Breathing or other health related discomfort in vulnerable population*	Reduce prolonged or strenuous outdoor physical exertion	Avoid prolonged or strenuous outdoor physical exertion
<b>Poor</b> (201-300)	<ul style="list-style-type: none"> <li>Breathing discomfort in healthy people on prolonged exposure</li> <li>Breathing or other health related discomfort in vulnerable population* on short exposure</li> </ul>	Avoid outdoor physical exertion	Avoid outdoor physical activities
<b>Very Poor</b> (301-400)	<ul style="list-style-type: none"> <li>Respiratory illness in healthy people on prolonged exposure</li> <li>Pronounced respiratory or other illnesses in vulnerable population* on short exposure</li> </ul>	Avoid outdoor physical activities, especially during morning and late evening hours	Remain indoors and keep activity levels low
<b>Severe</b> (401-500)	<ul style="list-style-type: none"> <li>Respiratory illness in healthy people on prolonged exposure</li> <li>Serious respiratory or other illnesses in vulnerable population* on short exposure</li> </ul>	Avoid outdoor physical activities	Remain indoors and keep activity levels low

\* Vulnerable population (high risk): Elderly, children under 5 years, pregnant women, pre-existing illnesses like asthma and other airway or lung (respiratory) and heart (cardiovascular) diseases

#AQI= Air Quality Index; Check the daily AQI through the following websites before planning your day

**CPCB** - [https://app.cpcbcr.com/AQI\\_India/](https://app.cpcbcr.com/AQI_India/)

**MAPAN-SAFAR** - <http://safar.tropmet.res.in/>

[www.mohfw.nic.in](http://www.mohfw.nic.in)  
[www.mygov.in](http://www.mygov.in)  
[www.pmindia.gov.in](http://www.pmindia.gov.in)

YouTube mohfwindia  
@MoHFW\_INDIA

<http://ncdc.gov.in/>  
@director\_NCDC





स्वास्थ्य एवं परिवार कल्याण मंत्रालय  
भारत सरकार

# प्रदूषित हवा स्वास्थ्य के लिए हानिकारक हैं

## प्रदूषण का आपके स्वास्थ्य पर असर

- चक्कर आना
- साँस लेने में तकलीफ
- खाँसी
- छाती में तकलीफ
- आँखों में जलन



जरूरत पड़ने पर ही घर से बाहर निकलें



आरवों में जलन, साँस की तकलीफ या खाँसी होने पर डॉक्टर से सम्पर्क करें



दिल, फेफड़े एवं अन्य गंभीर बीमारी के रोगियों का विशेष ध्यान दें



धुआ रहित ईंधन का प्रयोग करें



ज्यादा प्रदूषित जगहों पर ना जाएं



घरों के खिड़की-दरवाजे सुबह व शाम बन्द रखें



सुबह व शाम की सैर टालें



पटाखे, कूड़ा, पत्तियां आदि न जलाएं



धूम्रपान से बचें

## समझदार बनें...प्रदूषण के असर से बचें



Ministry of Health and Family Welfare  
Government of India



## वायु प्रदूषण से अत्याधिक प्रभावित होने वाले लोग



5 वर्ष से छोटे  
बच्चे



गर्भवती महिलाएं



बुजुर्ग लोग



श्वसन  
रोग मरीज



हृदय रोग  
के मरीज



समझदार बनें...  
प्रदूषण के असर से बचें

[www.mohfw.gov.in](http://www.mohfw.gov.in)





Ministry of Health and Family Welfare  
Government of India



## How to **protect yourself** from **AIR POLLUTION**



**1**  
Check  
air quality index  
before leaving  
from your location



**2**  
Avoid  
congested  
areas



**3**  
Close doors &  
windows on  
polluted days



**4**  
Don't smoke  
tobacco  
products



National Programme  
on Climate Change  
and Human Health

<https://app.cpcbcr.com/AQI India/>  
**MAPAN-SAFAR** - <http://safar.tropmet.res.in/>  
[www.mohfw.gov.in](http://www.mohfw.gov.in)

### Editorial Board

Chief editor: Director, NCDC

Managing editor: Additional Director and Head, CEOH-CCHH

Content and design: NPCCHH HQ team

For comments and input, email [npcchh@gmail.com](mailto:npcchh@gmail.com)

Address: Centre for Environmental & Occupational Health, Climate Change & Health,  
National Centre for Disease Control, 22 Sham Nath Marg, Delhi 110054, India

Reproduction of material from the NPCCHH Newsletter, in part or in whole, is encouraged for academic, research and non-commercial use as long as credits and acknowledgement are given.

Online version of the newsletter is available at NCDC website: [www.ncdc.gov.in](http://www.ncdc.gov.in)