



No.F.1-22/Advisory/CDC/2025  
Centers for Disease Control  
National Institutes of Health, Islamabad  
Ministry of National Health Services, Regulations & Coordination  
Phone: (92-051) 9255237 Fax: (92-051) 9255099

National Focal Point for International Health Regulations

17th November 2025

**Subject: Advisory for Protection and Preventive Measures against Smog**

Seasonal smog is a recurring and escalating environmental health crisis, particularly afflicting the Indo-Gangetic plains during the cold transition months (typically October to February). This phenomenon is characterized by a dense, low-lying atmosphere, a toxic cocktail of fog and high concentrations of ambient air pollutants. It poses a significant and immediate threat to the health, economy, and quality of life for the population.

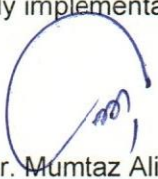
2. The air quality crisis in Pakistan has intensified dramatically over the past decade. Notably, major cities in the province of Punjab, including Lahore, Multan, Gujranwala, Rawalpindi and Islamabad, face critically degraded air quality annually. In recent seasons (e.g., 2024-2025), Lahore has frequently topped global lists as the world's most polluted city, with Air Quality Index (AQI) readings often soaring beyond the 'Hazardous' threshold (400+). These levels are linked directly to an unusual surge in respiratory and cardiovascular emergencies nationwide.

3. Keeping in view this unprecedented upsurge before the expected season, to address this issue and to alert all the public health authorities of the country, following advisory has been issued:

**"Advisory for Protection and Preventive Measures against Smog"**

4. The objective of this advisory is to provide actionable information to health authorities, healthcare providers and general public. Its primary goal is to inform stakeholders about the hazardous impacts of seasonal smog, quantify the risks and recommend robust, evidence-based preventive measures to mitigate its effects on human health.

5. It is requested that the attached advisory may kindly be circulated to all relevant health facilities, institutions and line departments under your jurisdiction for timely implementation of recommended actions.

  
(Dr. Mumtaz Ali Khan)  
Chief, Centers for Disease Control  
National Institute of Health

**Distribution overleaf**





**Subject: Advisory for Protection and Preventive Measures against Smog**

---

### **Introduction**

Seasonal smog is a recurring and escalating environmental health crisis, particularly afflicting the Indo-Gangetic plains during the cold transition months (typically October to February). This phenomenon is characterized by a dense, lowland atmosphere, a toxic mixture of fog and high concentrations of ambient air pollutants. It poses a significant and immediate threat to the health, economy, and quality of life for the population.

The air quality crisis in Pakistan has intensified dramatically over the past decade. Notably, major cities including Lahore, Multan, Gujranwala, Rawalpindi, and even Islamabad, face critically degraded air quality annually. In 2024-2025, Lahore has frequently topped global lists as the world's most polluted city, with Air Quality Index (AQI) readings often soaring beyond the 'Hazardous' threshold (400+). These levels are linked directly to an unusual surge in respiratory and cardiovascular emergencies nationwide.

### **Purpose**

This national advisory is issued to serve as a critical guide, providing actionable information to health authorities, healthcare providers, and the general public. Its primary goal is to inform stakeholders about the hazardous impacts of seasonal smog, quantify the risks, and recommend robust, evidence-based preventive measures to mitigate its effects on human health.

### **Key Factors Contributing to Seasonal Smog**

The severity of smog is driven by a critical intersection of geographical, meteorological, and anthropogenic factors:

- **Metrological factors**

Low ground temperatures trap the warmer air layer above, creating a stable atmospheric cap. Additionally, slower wind speeds minimize horizontal dispersion, preventing pollutants from being carried away. This convergence traps primary pollutants like vehicle emissions and industrial smoke and secondary pollutants formed through chemical reactions, such as ozone close to the ground, concentrating them into dense, toxic smog.

- **Anthropogenic factors**

High levels of vehicular exhaust, particularly from two-stroke engines and poorly maintained diesel vehicles, are the dominant urban source of fine particulate matter and nitrogen oxides. Emissions from brick kilns, steel mills, and power generation facilities, often running on substandard fuels, release high levels of Sulfur Dioxide and Particulate Matter. Moreover, the burning of rice straw/stubble in the two-week window between the rice harvest and wheat sowing is a major seasonal driver. Additionally, solid fuel combustion for heating, cooking, and open burning of municipal solid waste, which releases dioxins and heavy metals.

- **Health Risks and Implications**

The primary threat comes from Fine Particulate Matter (PM<sub>2.5</sub>); particles less than 2.5



micrometers in diameter, which are small enough to penetrate deep into the lungs and enter the bloodstream. The World Health Organization (WHO) annual guideline for PM<sub>2.5</sub> is 5µg/m<sup>3</sup>, however, average concentrations in Lahore often 180 µg/m<sup>3</sup> during peak smog season.

The seasonal smog poses several serious health risks, particularly for vulnerable groups such as children, the elderly, and individuals with pre-existing respiratory or cardiovascular conditions:

- **Respiratory Issues**

Prolonged exposure to smog can lead to increased incidences of asthma, bronchitis, and other respiratory diseases. Fine particulate matter (PM<sub>2.5</sub>) and toxic gases such as carbon monoxide and sulfur dioxide can irritate the lungs and aggravate pre-existing conditions.

- **Cardiovascular Effects**

Studies have shown a correlation between poor air quality and an increased risk of heart attacks, strokes, and other cardiovascular diseases due to the presence of fine particulate matter and other pollutants that enter the bloodstream.

- **Children**

Due to their developing respiratory systems and higher breathing rates, children inhale more pollutants relative to their body size, making them especially susceptible. Prolonged exposure can lead to Respiratory issues (asthma, reduced lung function), increased infection susceptibility and impaired lung growth and development.

- **Elderly Individuals**

Advanced age increases more vulnerability due to weakened immune systems and organs. Pre-existing chronic conditions, such as heart disease, diabetes, or respiratory issues, can worsen with air pollution exposure, leading to exacerbated chronic conditions (heart disease, stroke, and respiratory infections), and cognitive decline.

- **Individuals with Pre-existing Respiratory Conditions**

Those with pre-existing respiratory conditions, such as asthma, COPD, and other lung disorders, face increased health risks due to compromised lung function. Air pollution exposure can Exacerbate breathing difficulties and Trigger frequent and severe asthma attacks, Worsen COPD symptoms, Increase susceptibility to respiratory infections and lung cancer.

- **Pregnant Women**

Pregnant women are vulnerable due to potential health impacts on both mother and fetus. Exposure to smog is linked to adverse pregnancy outcomes, including preterm birth, low birth weight, developmental delays and newborn respiratory problems. Fine particulate matter (PM<sub>2.5</sub>) can cross the placenta, affecting fetal development and posing long-term health risks.

## **Prevention and control measures**

### **Individual-Level Measures**

- **Limit Outdoor Exposure:** Reduce outdoor activities, especially during peak smog hours.
- **Wear Air Purifying Respirators:** Use high-quality N95 or KN95 masks when outdoors.
- **Improve Indoor Air Quality:** Close windows and doors, use air purifiers with HEPA filters, and avoid indoor air pollution sources like smoking.
- **Stay Hydrated:** Drink plenty of water to help flush out toxins.
- **Seek Medical Attention:** Consult a healthcare provider for persistent or worsening symptoms.



### **Community-Level Measures**

- **Promote Clean Energy Sources:** Encourage the use of cleaner fuels and renewable energy technologies.
- **Strengthen Environmental Regulations:** Implement and enforce strict regulations on industrial emissions and vehicle emissions.
- **Promote Public Transportation:** Encourage the use of public transportation and non-motorized modes of transport to reduce vehicle emissions.
- **Public Awareness Campaigns:** Educate the public about the health risks of smog and promote preventive measures.

By addressing the root causes of smog, such as industrial emissions, vehicle pollution, and agricultural burning, all the provinces/regions can significantly improve its air quality and protect public health ensuring a healthier future for all.

**The above 'Advisory' may please be circulated widely to all concerned**

**Distribution List:**

1. Federal Secretary, M/o Climate Change and Environmental Protection, Govt. of Pakistan, Islamabad
2. Secretary, Environment & Climate Change Department, Government of the Punjab, Lahore
3. Secretary, Environmental, Climate Change & Coastal Development Department, Govt. of Sindh, Karachi
4. Secretary, Climate Change, Forestry, Environment & Wildlife Department, Govt. of KPK, Peshawar
5. Secretary, Climate Change & Environment, Government of Balochistan, Quetta
6. Secretary, Forest, Wildlife & Environment Department, Government of Gilgit-Baltistan, Gilgit
7. Secretary, Health Department, Government of the Punjab, Lahore
8. Secretary, Health Department, Government of Sindh, Karachi
9. Secretary, Health Department, Government of KPK, Peshawar
10. Secretary, Health Department, Government of Balochistan, Quetta
11. Secretary, Health Department, Government of AJK, Muzaffarabad
12. Secretary, Health Department, Government of Gilgit-Baltistan, Gilgit
13. Chief Executive Officer, Islamabad Healthcare Regulatory Authority, Islamabad
14. Chief Executive Officer, Punjab Healthcare Commission, Lahore
15. Chief Executive Officer, Sindh Healthcare Commission, Karachi
16. Chief Executive Officer, KPK Healthcare Commission, Peshawar
17. Director General Health Services, Government of the Punjab, Lahore
18. Director General Health Services, Government of Sindh, Hyderabad
19. Director General Health Services, Government of KPK, Peshawar
20. Director General Health Services, Government of Balochistan, Quetta
21. Director General Health Services, Government of Gilgit-Baltistan, Gilgit
22. Director General Health Services, Government of AJK, Muzaffarabad
23. Director General, NEHS, Islamabad
24. Director General, Environmental Protection Agency, Govt. of Punjab, Lahore
25. Director General, Environmental Protection Agency, Govt. of Sindh, Karachi
26. Director General, Environmental Protection Agency, Govt. of KPK, Peshawar
27. Director General, Environmental Protection Agency, Govt. of Balochistan, Quetta
28. Director General, Environmental Protection Agency, Govt. of AJK, Muzaffarabad
29. Director General, Environmental Protection Agency, Govt. of GB, Gilgit
30. Executive Director, Pakistan Institute of Medical Sciences, Islamabad
31. Executive Director, Federal Government Polyclinic Hospital, Islamabad
32. Executive Director, Capital Hospital CDA, Islamabad
33. Executive Director, Federal Government TB Hospital, Rawalpindi
34. Executive Director, National Institute of Rehabilitation Medicine (NIRM), Islamabad
35. Director General Health Services, Capital Development Authority, Islamabad
36. Director General, PAEC Hospital, Islamabad
37. Director General, KRL Hospital, Islamabad
38. Director General, NESCOM Hospital, Islamabad
39. District Health Officer, ICT, Islamabad
40. Director, Nuclear Oncology & Radiotherapy Institute (NORI), Islamabad
41. Commandant, PAF Hospital, Islamabad
42. Commandant, Naval Complex Hospital, (PNS Hafeez), Islamabad
43. Medical Superintendent, Social Security Hospital, Islamabad
44. Director, Federal General Hospital, Park Road, Islamabad
45. Executive Director, Shifa International Hospital, Islamabad
46. Executive Director, Quaid-e-Azam International Hospital, Islamabad
47. Executive Director, Maroof International Hospital, Islamabad
48. Commandant, Combined Military Hospital (CMH), Rawalpindi
49. Commandant, Military Hospital (MH), Rawalpindi
50. Medical Superintendent, Cantonment General Hospital, Rawalpindi
51. Medical Superintendent, District Headquarter Hospital, Rawalpindi
52. Medical Superintendent, Fauji Foundation Hospital, Rawalpindi
53. Medical Superintendent, Holy Family Teaching Hospital, Rawalpindi
54. Medical Superintendent, Benazir Bhutto Hospital, Rawalpindi
55. Medical Superintendent, WAPDA Hospital, Rawalpindi
56. Medical Superintendent, Railway Hospital, Rawalpindi
57. Medical Superintendent, IHITC, Islamabad
58. Officer In-charge, Provincial Disease Surveillance & Response Unit (PDSRU) at Provincial Health Directorates, Lahore, Hyderabad, Peshawar, Quetta, Gilgit and Muzaffarabad
59. All Deputy Commissioners with the request to direct all concerned departments at district level.

**C.c:**

1. Chief Secretary, Govt of Punjab, Sindh, KPK, Balochistan, GB and AJK.
2. Surgeon General Pakistan Army, GHQ Rawalpindi
3. Chief Commissioner, ICT Administration Islamabad
4. WHO Country Representative, Islamabad
5. SPS to Federal Minister of Health, M/o NHR&C, Islamabad
6. SPS to Secretary, M/o NHR&C, Islamabad
7. PS to Director General Health, M/o NHR&C, Islamabad