### **Air Pollution Health Impact by Age Group and State in India**

#### **Objective:**

Identify which age groups are most affected by air pollution-related health outcomes in India and understand state-wise variations.

### ⚡ **Key National Findings (ICMR & GBD Reports)**

✅ **Overall mortality burden:** - **1.7 million deaths (18% of total deaths) in 2019** attributable to air pollution. - **Main causes:** - Chronic Obstructive Pulmonary Disease (COPD) – **32.5%** - Ischaemic heart disease – **29.2%** - Stroke – **16.2%** - Lower respiratory infections – **11.2%**  
*(Source: Enclosure-Air-Pollution-Health-Advisory-Oct-2023, Page 1)*

### ⚡ **Age Group Vulnerability:**

🔹 **Children (0–5 years):** - Highly vulnerable due to immature immune and respiratory systems. - High incidence of **lower respiratory infections, asthma exacerbations, stunted lung development**. - Under-5s bear **disproportionately high disease burden** relative to their population size.  
*(Source: 2017-India-State-Level-Disease-Burden-Initiative-Full-Report, Page 16)*

🔹 **Adults (30–59 years):** - Significant burden of **ischemic heart disease, stroke, COPD**, especially among outdoor workers.

🔹 **Elderly (60+ years):** - Higher risks of **heart attacks, strokes, chronic lung diseases** due to cumulative exposure and weakened physiological reserves.

### ⚡ **State-wise Health Burden Insights (ICMR Report)**

✅ **1. Highest Outdoor Air Pollution Burden States:** - **Haryana, Uttar Pradesh, Punjab, Rajasthan, Bihar, West Bengal**. - High per capita burden driven by urban density, crop burning, industrial and vehicular emissions.  
*(Source: 2017-India-State-Level-Disease-Burden-Initiative-Full-Report, Page 18)*

✅ **2. Household Air Pollution Burden:** - Highest in **EAG states (UP, Bihar, Jharkhand, MP, Odisha, Rajasthan, Chhattisgarh, Uttarakhand)**. - Reduction in these states is **slower than national average** due to reliance on solid fuels.  
*(Source: 2017-India-State-Level-Disease-Burden-Initiative-Full-Report, Page 18)*

✅ **3. Age Group Burden (State Groups):** - **Under-5 age group:** - **23% of total DALYs in EAG states**,  
- **19% in North-East states**,  
- **12% in Other states**.

*(Source: 2017-India-State-Level-Disease-Burden-Initiative-Full-Report, Page 16)*

✅ **4. Cardiovascular & Respiratory Risks (Adults & Elderly):** - States with **high cardiovascular and diabetes risks exacerbated by pollution:** - Punjab, Tamil Nadu, Kerala, Andhra Pradesh, Maharashtra.

### ⚡ **Summary Table**

| **State Group** | **Highest Burden Age Group** | **Key Health Risks** |
| --- | --- | --- |
| **EAG States (UP, Bihar, etc.)** | Children <5 years | Lower respiratory infections, COPD |
| **Northern States (Punjab, Haryana, UP, WB)** | Adults 30–59 years, Elderly | Cardiovascular diseases, COPD, stroke |
| **Southern States (TN, Kerala, AP, MH)** | Adults & Elderly | Heart disease, stroke, diabetes |

### 💡 **Key Insight:**

Children under 5 and elderly above 60 years are the **most vulnerable age groups across India**, with burden disproportionately high in **EAG and Northern states**.

### 🔧 **Data Gaps:**

* **No city-wise age-stratified data** available in these reports. National and state-group trends are used as proxies.

### **Sources:**

* Enclosure-Air-Pollution-Health-Advisory-Oct-2023.pdf (Page 1)
* 2017-India-State-Level-Disease-Burden-Initiative-Full-Report.pdf (Pages 16-18)
* GBD-MAPS-SpecRep21-India-revised\_0.pdf

Let me know if you want this formatted into a **slide-ready summary** or infographic prompt for your final presentation and LinkedIn post series this week.