Indonesia

Air pollution was the 6th leading risk factor for premature death in Indonesia in 2019, accounting for nearly 11% of all deaths (more than 186,000). Considered separately, ambient particulate matter (PM\textsubscript{2.5}) ranked as the 6th leading risk factor, and household air pollution (HAP) ranked 9th. Ozone was not in the top 20 risk factors.

**Key Statistics at a Glance**

| 186,000 deaths due to air pollution in 2019. | 19 µg/m\textsuperscript{3} population-weighted annual average PM\textsubscript{2.5} concentration.* | 34% of the population used solid fuels for cooking in 2019. |
| 8% of infant deaths attributable to air pollution. | 107,000 deaths attributable to exposure to outdoor PM\textsubscript{2.5}. | Nearly 77,000 deaths attributable to exposure to household air pollution. |

**Key Exposure Facts**

98% of Indonesia’s population lives in areas where PM\textsubscript{2.5} levels are above the WHO guideline for healthy air (10 µg/m\textsuperscript{3}).**

- Between 2010 and 2019, exposures to PM\textsubscript{2.5} and household air pollution declined, but exposures to ozone increased.

- There are less than 10 stations reporting PM\textsubscript{2.5} concentrations in Indonesia.

- Among the 23 countries in the Southeast Asia, East Asia, and Oceania region, Indonesia ranks 10th in PM\textsubscript{2.5} exposure.

**How Have Pollutant Exposures Changed Between 2010 and 2019?**

<table>
<thead>
<tr>
<th>2010</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM\textsubscript{2.5}</td>
<td>22 µg/m\textsuperscript{3}</td>
</tr>
<tr>
<td>Ozone</td>
<td>34 ppb</td>
</tr>
<tr>
<td>HAP</td>
<td>45% of population relying on solid fuels</td>
</tr>
</tbody>
</table>

* Please note that PM\textsubscript{2.5} concentrations reported here are estimated using a combination of satellite data, ground air quality monitoring data, and chemical transport models. These estimates can be more uncertain in regions where ground monitoring data are limited or not available. In Indonesia, the best estimate of the annual average exposure is 19 µg/m\textsuperscript{3}, but it may range from 16 µg/m\textsuperscript{3} to 24 µg/m\textsuperscript{3}.

** WHO provides an Air Quality Guideline of 10 µg/m\textsuperscript{3} for PM\textsubscript{2.5} to minimize health risks to populations, as well as three interim targets (15 µg/m\textsuperscript{3}, 25 µg/m\textsuperscript{3}, and 35 µg/m\textsuperscript{3}) as incremental steps toward the progressive reduction of air pollution.
Air Pollution Accounts for a Substantial Percentage of Global Deaths from Specific Causes.

Air pollution exposures, including exposure to outdoor PM$_{2.5}$ and HAP, have been linked to increased hospitalizations, disability, and early death from respiratory diseases, heart disease, stroke, lung cancer, and diabetes, as well as communicable diseases like pneumonia. Exposure to ozone is linked to chronic obstructive pulmonary disease (COPD), and in children, especially those under the age of 5, increases susceptibility to lower-respiratory tract infections. Exposure to PM$_{2.5}$ also puts mothers at risk of delivering babies too early and smaller than normal, and such babies are more susceptible to dying from a range of diseases.

Percentage of Deaths (by Cause) Attributed to Air Pollution in Indonesia in 2019

- 25% of COPD deaths
- 19% of diabetes deaths
- 21% of ischemic heart disease deaths
- 19% of lung cancer deaths
- 24% of stroke deaths
- 17% of lower-respiratory infection deaths
- 8% of neonatal deaths

Key Health Facts

- Air pollution is the 6th leading risk factor for premature death in Indonesia. Leading causes of death in Indonesia include ischemic heart disease, intracerebral hemorrhage, ischemic stroke, diabetes, and tuberculosis, while leading risk factors include high blood pressure, tobacco, poor diet, and high blood sugar.
- There are 99 deaths per 100,000 people attributable to air pollution in Indonesia compared with the global rate of 86, adjusted for differences in age.
- 6% of total air pollution-attributable deaths in Indonesia are in children under 5, and 11% are in people over 70.
- GOOD NEWS: Most of Indonesia’s air pollution reduction efforts are focused on the capital, Jakarta, including car-free days (a system that organizes traffic by odd and even license plate numbers to reduce the number of cars on the road), standards for mobile and stationary sources, and improved urban green areas.