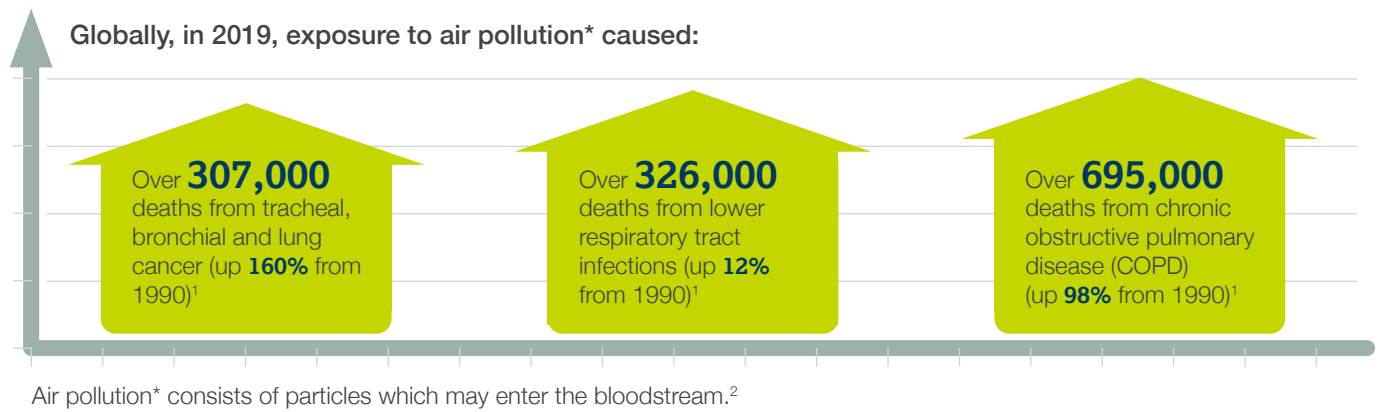


# Climate change and respiratory diseases

## Climate change is an important contributor to increased deaths and morbidity



## Children may be disproportionately affected by climate-related respiratory issues



Children are vulnerable to air pollution as their lungs are still developing and they breathe twice as fast as adults.<sup>3</sup>



Almost half of lower respiratory tract infection deaths in children under five are caused by air pollution (soot) generated in the home.<sup>4</sup>



A staggering two billion children still live in areas where pollution exceeds standards set by the World Health Organization.<sup>3</sup>

## What can be done to improve patient outcomes and reduce the carbon footprint of respiratory care?

### All healthcare interactions have a carbon footprint<sup>5</sup>

#### In respiratory care:

Patients with uncontrolled asthma or COPD have higher healthcare demands, and their care is associated with an increased carbon footprint.<sup>6-8†</sup>

In the UK, poorly controlled asthma has a three-times greater carbon footprint per capita than well-controlled asthma, with greater healthcare resource utilisation and higher use of SABA<sup>‡</sup> reliever inhalers accounting for much of the difference.<sup>8</sup>

Therefore, policies and actions that advance implementation of guideline-based care for respiratory disease and improve patient outcomes are needed to protect the health of people and the planet.

### Drive early and accurate diagnosis as well as implement evidence-based guidelines to reduce healthcare utilisation and use of reliever inhalers<sup>10</sup>

- Partner with healthcare system stakeholders, including specialist centres and patient advocacy groups to implement local guidelines to prioritise disease control and improve patient outcomes<sup>10,11</sup>

### Deliver targeted interventions<sup>12</sup>

- Prescribe the right medication at the right dose,<sup>11</sup> to the right person
- Provide targeted interventions to high-risk patients e.g. ensuring good inhaler technique<sup>11</sup>

### Adopt community-based care and use of digital technologies<sup>13</sup>

- Conduct digital respiratory assessments when appropriate<sup>14</sup>
- Promote use of apps that facilitate self-management<sup>14</sup>

### Drive improved clinical knowledge about the effects of climate change<sup>15</sup>

- Educate clinicians on sustainable practice<sup>15</sup> and include climate change on the medical curricula<sup>16</sup>
- Promote safe disposal and inhaler recycling<sup>11</sup>

### Transition to a future of climate-friendly propellants in respiratory inhalers

- Lower-carbon propellant options for inhalers are in development
- This transition is important to enable continued personalisation of inhaler choice for optimal disease control and better health outcomes<sup>17</sup>
- Working with regulators will be critical to support the safe and efficient transition to low Global Warming Potential inhaled medicines

\* Ambient particulate matter pollution

† Observational analyses of 10 SABA use IN Asthma (SABINA) datasets involving 1,033,564 patients (≥12 y) from Canada, France, the Netherlands, Poland, Spain, the United Kingdom, and the United States.<sup>8</sup>

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‡ Short-acting β<sub>2</sub>-agonist. Many patients experiencing asthma symptoms use a SABA as a reliever medication; however, taking a SABA alone does not address inflammation, leaving patients at risk of asthma attacks.<sup>9</sup> One third of patients across Europe are over-reliant on SABAs,<sup>9</sup> which account for 66% of the emissions from inhalers.<sup>7</sup>

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