

Calling time on asthma deaths in tropical regions—how much longer must people wait for essential medicines?



Every day around 1150 people die worldwide because of asthma, and most of these deaths are avoidable.¹ As a comparison, malaria—which is seen as a much bigger problem and increased prevention measures have resulted in decreasing death rates—kills about 1175 people per day.² Most asthma deaths occur in children and adults living in tropical regions, where effective asthma management might be either non-existent or inaccessible.³ However, with correct diagnosis and treatment many deaths from asthma could be prevented.

The recent *Lancet* Commission⁴ on asthma suggested new ways of thinking about the condition, challenging conventional concepts of asthma as a single disease and proposing a more targeted approach. Novel phenotype-driven approaches are currently under development, although not widely available; however, robust evidence shows that people with asthma symptoms improve after treatment with WHO essential asthma medicines, and thus a clinical diagnosis of asthma opens the door to asthma management.

Inhaled β_2 -agonists and inhaled corticosteroids are the cornerstones of effective asthma management. These classes of medicine were developed more than half a century ago and their role in cost-effective treatment and prevention of exacerbations and deaths, as well as control of asthma symptoms, is well established. However, most deaths and disabilities due to asthma occur in people who are not taking medicines, especially inhaled corticosteroids, which are more expensive. We therefore ask, how much longer must children and adults with asthma living in the tropics wait for these essential medicines?

The Global Burden of Disease Study⁵ estimated that there are 339 million people with asthma globally, representing roughly 1 in 20 people. Asthma is the most common chronic disease in children, and one of the most common chronic diseases in adults. Insufficient access to appropriate asthma management leads to mortality and morbidity that is avoidable through use of straightforward strategies and actions.

These strategies and actions are described in the Global Asthma Report 2018,³ written by 53 authors from around the world and produced by the Global Asthma Network. This report sets out what is known about

the burden of asthma, its management, and where major gaps lie between best evidence-based care and actual clinical practice, with the intention of influencing those in authority to act promptly and wisely to reduce the global burden of asthma. The Global Asthma Report 2018³ has 22 recommendations (five to WHO, nine to governments, four to health authorities, and four to health-care professionals, professional societies, and patient organisations) mainly concerning the need for better access to affordable quality-assured essential asthma medicines, improved asthma management packages, better asthma data, and more asthma research.

Infectious diseases such as malaria (and other so-called tropical diseases) have long had a negative impact on humanity, but over the past century the number of global deaths due to tropical diseases has fallen because of evidence-based public health measures. Simultaneously, the prevalence of non-communicable diseases (NCDs) has increased, and they now cause 71% of global deaths, 85% of which occur in low-income and middle-income countries (LMICs).⁶ In LMICs, age-specific death rates are almost double those in high-income countries. In 2011, asthma was among the four main groups of NCDs prioritised by the UN (cardiovascular diseases, cancer, diabetes, and chronic respiratory diseases). These four groups account for around 80% of NCD-related deaths.⁶ Globally, asthma is ranked sixteenth among the leading causes of years lived with disability⁵ and twenty-fifth among the causes of burden of disease measured by disability-adjusted life-years for all ages.⁷

Remarkably, asthma management, including use of essential asthma medicines, was assessed as only “quite cost-effective” and thus not included in the “best buy” costing analysis of a 2011 WHO report concerning scaling-up of actions against NCDs.⁸ Asthma management was also not listed as a “very cost-effective” intervention in the WHO Global Action Plan for the Prevention and Control of Non-communicable Diseases.⁹ In 2017, using WHO-CHOICE methodology, WHO reported that in LMICs low-dose inhaled beclomethasone and a short-acting β_2 -agonist is effective and that this treatment costs 1000–5000 international dollars per disability-adjusted life-year averted.^{10,11} However, the



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basis for this cost estimate is not readily apparent in WHO technical papers,^{11,12} which cite evidence that regular use of inhaled corticosteroids reduces the risk of death due to asthma by 87% (and, incorrectly, attribute the same benefit to inhaled salbutamol therapy).¹¹ The WHO Technical Briefing¹² appears to assume that only 1.5% of people with asthma will use inhaled corticosteroids—a grossly suboptimal level of coverage, as the proportion should be at least 25% in children, and higher in adults. Better data and models of cost-effectiveness are needed to advance the care of asthma.

Asthma can be controlled in LMICs. For example, in four asthma pilot projects (in Benin, China, El Salvador, and Sudan) funded by the World Bank and organised by the International Union Against Tuberculosis and Lung Disease and its partners, training of clinicians on implementation of asthma guidelines and evaluation of outcomes was combined with procurement of affordable, quality-assured, essential asthma medicines.³ After 1 year, all countries observed a substantial reduction in asthma severity, visits to emergency services, and admissions to hospital. Further positive evidence could be provided from LMICs if countries evaluated the costs and outcomes of their own asthma management activities to measure how provision of affordable quality-assured essential asthma medicines and more efficient, targeted, and equitable delivery of standardised asthma care reduces the burden of asthma on patients and health-care services.

The Global Asthma Report 2018³ describes the steps required to reduce the burden and mortality of asthma and the data needed to monitor progress. The Global Asthma Network Phase 1 will be completed in 2019, and will estimate the prevalence and severity of asthma, describe risk factors and management in adults and children, and provide up-to-date data and time trends with comparable data from The International Study of Asthma and Allergies in Childhood.¹³

We call time on avoidable asthma deaths and on people with asthma not having the right to a decent quality of life. Patient stories like this one from Kenya³ must become a thing of the past:

"...I had run away from my husband, so that I go die in my parents' home. I had to stop working at the factory and I could not even do the housework..."

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