



**Allergologia et
immunopathologia**
Sociedad Española de Inmunología Clínica,
Alergología y Asma Pediátrica
www.elsevier.es/ai



ORIGINAL ARTICLE

Global Asthma Network survey suggests more national asthma strategies could reduce burden of asthma

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Received 13 October 2016; accepted 31 October 2016

KEYWORDS

Asthma;
Global;
Network;
Strategies;
National;
Management;
Burden

Abstract

Background: Several countries or regions within countries have an effective national asthma strategy resulting in a reduction of the large burden of asthma to individuals and society. There has been no systematic appraisal of the extent of national asthma strategies in the world.

Methods: The Global Asthma Network (GAN) undertook an email survey of 276 Principal Investigators of GAN centres in 120 countries, in 2013–2014. One of the questions was: “Has a national asthma strategy been developed in your country for the next five years? For children? For adults?”.

Results: Investigators in 112 (93.3%) countries answered this question. Of these, 26 (23.2%) reported having a national asthma strategy for children and 24 (21.4%) for adults; 22 (19.6%) countries had a strategy for both children and adults; 28 (25%) had a strategy for at least one age group. In countries with a high prevalence of current wheeze, strategies were significantly more common than in low prevalence countries (11/13 (85%) and 7/31 (22.6%) respectively, $p < 0.001$).

Interpretation: In 25% countries a national asthma strategy was reported. A large reduction in the global burden of asthma could be potentially achieved if more countries had an effective asthma strategy.

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Introduction

Asthma is a common chronic disease affecting an estimated 241 million children and adults in the world according to the estimates of the Global Burden of Disease 2013,¹ which also estimated that asthma was the 15th highest ranked cause of Years Lived with Disability.¹ Many people with asthma are unnecessarily disabled, because they are not receiving optimal asthma management.² In 2013, it was estimated that about 22 million disability-adjusted life years are lost because of asthma.³ The International Study of Asthma and Allergies in Childhood (ISAAC) found that the historical view of asthma being a disease of high-income countries (HICs) no longer holds: most people affected are in low- and middle-income countries (LMICs), and asthma prevalence is estimated to be increasing fastest in those countries,⁴ where most of the world's people live.

To reduce the burden of asthma, several HICs and LMICs have developed an asthma strategy (or an asthma programme which is the terminology used by some countries) at a national or regional level which has resulted in rapid reduction of the ill-effects of asthma.⁵ The strategies or programmes are formalised with political engagement and commitment. Implementation of such strategies includes relatively simple measures which are consistently applied in the relevant population, to improve early detection of asthma and provide access to effective anti-inflammatory treatment. Extension of this approach to other countries or regions within countries could be of great potential benefit to reducing the burden of asthma in the world.

The first comprehensive national asthma strategy was developed in Finland in 1994 and has served as a model for other countries. They developed and called it a comprehensive nationwide Asthma Programme and over the next decade this lessened the burden of asthma on individuals and society and more than halved the total asthma costs (health-care, drugs, disability, and productivity loss)^{6,7} and these benefits have continued.⁸ This model was followed several years later by several other national strategies within the European Union⁹ including France,¹⁰ Portugal,¹¹ and Spain.¹² In other places, independent approaches have been used with improved outcomes, including Australia,¹³ the city of Salvador, Brazil,¹⁴ Canada,¹⁵ Costa Rica,¹⁶ Singapore,¹⁷ Tonga¹⁸ and Turkey.¹⁹

However, there are few reports of such strategies, suggesting that in many countries there is no strategy or it has not been implemented. However there has been no systematic appraisal of the numbers of countries in the world which have a national asthma strategy. The Global Asthma Network (GAN) was established in 2012, a collaboration between individuals from ISAAC and the International Union Against Tuberculosis and Lung Disease (The Union). Its goals are to improve asthma care globally, with a focus on LMICs,²⁰ through enhanced surveillance, research collaboration, capacity building and access to quality-assured essential medicines. Given the large number of centres and countries involved with GAN, it was well placed to undertake such a survey.

Based on the low number of national asthma strategies reported in the literature, our hypothesis was that most countries in the world do not have a national asthma strategy. GAN has collaborators in more than half of the world's

countries, which enabled a simple survey to be undertaken to answer a question about whether a country had a national asthma strategy for children and adults.

Materials and methods

A cross-sectional survey of GAN centres was carried out between April 2013 and July 2014. A GAN centre was one where an Expression of Interest form had been submitted to the GAN Global Centre (Auckland). The survey was sent by email to each centre's principal investigator by the GAN Research Manager (PE). The survey was sent to GAN Principal Investigators in 276 centres in 120 countries; 46 were HICs and 74 LMICs, defined by the criteria used by the World Bank for the period 1 July 2013–30 June 2014.²¹

The survey form had eight questions, the last one of which was "Has a national asthma strategy been developed in your country for the next five years? For children? (Yes/No/Don't Know), For adults? (Yes/No/Don't Know)". The former seven questions were about national asthma management guidelines in their country (not included in these analyses).

Where conflicting answers were given by two or more investigators from different centres within a country, the GAN Global Centre staff entered into a discussion via email with the centre investigators until agreement between them was reached.

Country findings were compared with the prevalence of asthma symptoms in 13–14 year olds in countries where this had been estimated in ISAAC Phase Three.²² Countries were categorised as high prevalence if the prevalence of current wheeze was >20%, and low prevalence if the prevalence of current wheeze was <10%. The relationship of national asthma strategies to changes in country prevalence of asthma symptoms in 13–14 year olds in countries where this had been estimated in ISAAC Phase Three⁴ was also examined.

The data were entered into an Excel spreadsheet and checked for apparent inconsistencies which were reconciled if appropriate. Simple descriptive analyses were undertaken. The Chi-Squared test was used to compare responses about strategies between LMICs and HICs, and high and low prevalence countries with those answering 'Yes' compared with those not answering Yes ('No' or 'Don't know').²³

Results

Of the 276 centre principal investigators in 120 countries, 213 (77.2%) investigators in 112 (93.3%) countries completed the national asthma strategy question. There were no responses from any investigators in eight countries who were approached: three HICs and five LMICs.

Conflicting answers were obtained from two or more centres in 16 countries, and agreement was subsequently reached. Of the 112 countries, 43 (38.4%) were HICs including 48.3% of the world's 89 HICs; 69 (61.6%) were LMICs including 48.2% of the world's 143 LMICs (Table 1).

Of those 112 countries where the national asthma strategy questions were answered for children, 12 reported 'Don't Know', seven in HICs and five in LMICs. For adults, 16 reported 'Don't Know', 11 in HICs and five in LMICs.

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