

# Survey of asthma management in Thailand - the asthma insight and management study

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## Summary

**Background:** Previous Thai surveys of asthma care have shown suboptimal management and poor control. Since then several editions of the Thailand National Asthma Guidelines have been distributed to help improve asthma control. A new survey was undertaken to see if any improvement in care had occurred. It examined patients' insights, attitudes and perceptions about their asthma and its treatment.

**Methods:** Asthma patients ( $\geq 12$  years) were randomly selected and participated in face-to-face interviews. Patients answered 53 questions exploring general health, diagnosis, symptoms, exacerbations, patient burden, disease management, treatment and attitudes. The Global Initiative for Asthma guidelines were used to assess asthma control.

**Results:** Data were obtained from 400 asthma patients from 8,177 screened households. This showed that 36% had had exacerbations in the previous year, 17% had been hospitalized and 35% had had an unscheduled emergency visit to hospital or a doctor's office or clinic. Work or

school was missed by 44% due to asthma while a similar number had had an asthma episode that made them feel their life was in danger. Only 8% had good asthma control. Patients had low expectations with respect to asthma treatment and their understanding of how to use therapies was poor.

Forty-four percent of participants reported day-time symptoms and about one-third (34%) of adults and adolescents in the survey reported night-time symptoms at least once a week in the previous 4 weeks.

Asthma patients in Thailand rated their average productivity when asthma was at its worst at 48%, on a scale of 0 to 100%, which equates to a 36% decline in productivity.

Rescue medication during the previous four weeks had been used by 44% of asthma patients while 54% had used a controller medication. Pill controller medication is the most used form among those reporting controller medication use (67%), whereas 57% reported taking an inhaler. Oral steroids had been used in the previous 12 months by 40% of patients with the average number for 3 day or longer at 24 times, while the median was about 4 times.

**Conclusions:** Asthma had a profound impact on patients' wellbeing, despite the availability of effective treatments and evidence-based management guidelines. A large proportion of asthma patients overestimate their asthma control and have inappropriate concepts about asthma treatment. Gaining better insight into patient's attitudes about self-care is critical to improve asthma management. (*Asian Pac J Allergy Immunol 2015;33:14-20*)

**Keywords:** asthma control, asthma exacerbation, patient burden, asthma symptoms, attitude

## Introduction

The Global Initiative for Asthma (GINA) guideline, which aimed to improve asthma care, was launched in 1995 by the National Heart, Lung and

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Blood Institute and the World Health Organization. Asthma management guidelines for Thailand were published in the same year and then revised in 1997, 2004, 2008 following further GINA recommendations and their overall goal was to improved asthma control in Thailand.

The Asthma Insight and Management (AIM) surveys have been conducted in four world regions: (i) the United States,<sup>1</sup> (ii) Canada and Western Europe; (iii) Asia-Pacific;<sup>2</sup> and (iv) Latin America. The surveys consisted of core questions that were maintained for all regions, but each survey also contained region-specific questions to address local issues.

The aim of these studies was to obtain a greater understanding of asthma treatment practices and treatment success, as well as better insight into patients' perceptions of their asthma and its impact on their lives. This would facilitate the development of educational and interventional strategies targeted to the specific needs of each region.

Here, we report the findings from the Thailand AIM survey (Thailand-AIM), conducted to assess asthma-related patient attitudes and behavior, and their clinical characteristics, with the view to identifying trends in asthma care in Thailand.

## Methods

The survey was conducted between June 2011 and July 2011 by random face-to-face interviews at pre-selected locations. Identifying the patients did not involve accessing medical records or contacting health-care organizations or health-care providers.

The conduct of the study conformed fully to Good Clinical Practice (GCPs), including the International Conference on Harmonization (ICH) Guidelines, and was consistent with the most recent version of the Declaration of Helsinki. The study was approved by Khon Kaen University Ethics Committees. (Reference No: HE 541044 Date Approval: 27<sup>th</sup> May 2011)

The research tool used was an interviewer administered questionnaire developed by Abt SRBI (New York, NY, USA) and consisted of 53 questions encompassing eight asthma-related domains: (i) general health status, (ii) asthma diagnosis, history and comorbidities, (iii) asthma symptoms, frequencies and patterns, (iv) asthma exacerbations, (v) patient burden, (vi) disease management, (vii) medications and treatments, and (viii) patients' attitudes about asthma and asthma control. All questions were originally drafted in

English as part of the US-AIM survey and were then translated to Thai and the validity of the translation was confirmed by translating them back into English and making comparisons with the original.

## Study Regions of Thailand

The survey was conducted in five major cities of Thailand: Bangkok, Chiang Mai, Songkhla, Khon Kaen and Chonburi. Bangkok is the capital of Thailand and is situated in the central part of the country. Chiang Mai is the second largest city and situated in the north of Thailand. Khon Kaen is in North-eastern Thailand, Songkhla is in the south and Chonburi is in the East.

## Study population

The study population comprised adults and parents of children 12-17 years of age who reported that they or their child had current asthma diagnosed by a physician, and that they also had received asthma medication or experienced asthma symptoms during the previous 12 months. This survey was restricted to adults and adolescents with current asthma, so households with no current asthma patients or only pediatric asthma patients under the age of 12 were screened out of the survey. In households with more than 1 eligible asthma patient, 1 person was randomly selected as the designated patient. If the designated patient was aged 12-17 years, the adult most knowledgeable about that patient's asthma and its treatment was interviewed.

## Data collection and analysis

Survey data were analyzed using SPSS software version 17 (SPSS Inc., Chicago, IL, USA.)

## Results

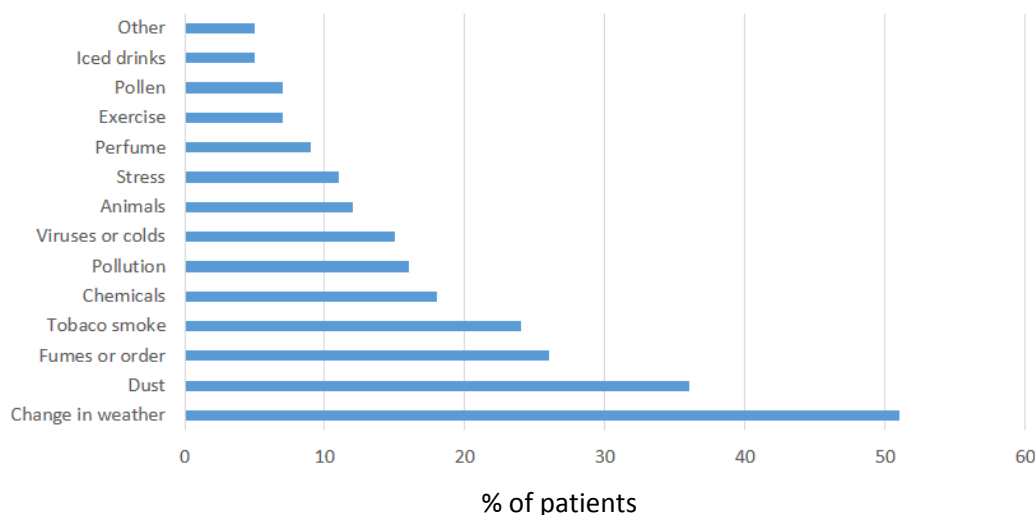
### Demographics and patient characteristics

A total of 8,177 households were screened. Most respondents who qualified agreed to participate, but 63 did not, a participation rate of 86%. The 400 subjects interviewed face to face consisted of 362 adults and 38 adolescents aged 12-17 years. 248 subjects (62%) were female. The mean patient age was 44 years. The mean age of first asthma diagnosis was 29 years, while the symptom duration prior to diagnosis was 2 years.

### Symptom characteristics

Day time symptoms in the previous 4 weeks were reported by 246 patients (61.5%) with 5% reporting symptoms every day, 12% most days, 18% at least twice a week and 9% had symptoms once a





**Figure 1.** Patient-reported asthma triggers

week. Hence, 44% of Thai adults and adolescents who participated in the survey reported asthma symptoms at least once a week in the previous 4 weeks.

Night time symptoms in the previous 4 weeks were reported by 198 (49.5%) patients; 3% had symptoms every night, 10% most nights, 13% at least twice a week, and 8% reported night time asthma symptoms at least once a week. In total, about one-third (34%) of adults and adolescents in the survey reported asthma symptoms at night at least once a week in the previous 4 weeks.

Asthma sufferers in Thailand reported multiple triggers that made their asthma symptoms worse (Figure 1) with more than 50% reporting that changes in the weather triggered their asthma symptoms.

To obtain a more objective assessment of asthma control, the GINA guidelines were used to classify symptom control in this national sample of asthma patients in Thailand. The GINA control measures that can be operationalized in a patient survey include daytime symptom frequency, nocturnal symptoms, limitations of activity, and the need for reliever treatment. Lung function levels are used in the GINA control classification, but cannot be properly assessed outside a clinical setting. Using these criteria for the previous 4 weeks, only 8% of adults and adolescents with asthma in Thailand would be classified as having controlled asthma. The majority of patients (58%) would be classified as having partly controlled asthma and 34% would

be classified as having uncontrolled asthma according to the guidelines.

#### **Exacerbations**

When asked if there had been any episodes in the past 12 months when their asthma symptoms were more frequent or more severe than normal, 36% reported this was their experience. The median number of these symptom-worsening episodes was 2. November (52%), December (64%), and January (37%), which is the cool season in Thailand, are the worst months for asthma symptoms in Thailand (Figure 2).

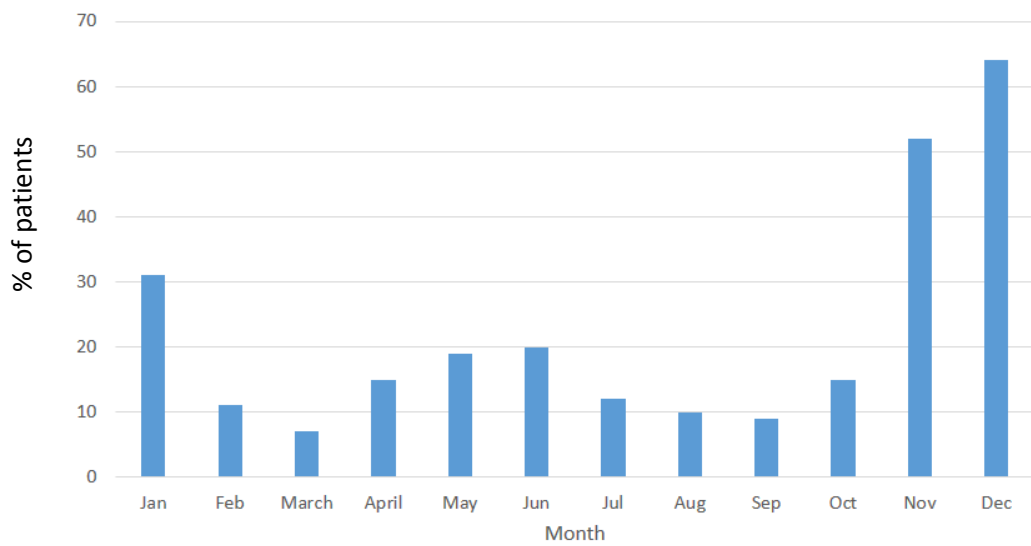
#### **Healthcare usage**

In the previous 12 months, 17% of the patients reported being hospitalized overnight or longer and 7% were admitted to an intensive care unit for their asthma. The mean number of overnight hospitalizations in the previous year was 2.4 admissions. 35% of the patients reported an unscheduled emergency visit to an emergency room, a walk-in clinic, or to a doctor's office or clinic. The mean number of such visits in the previous year was 4. Asthma caused 44% of the patients to miss work or school in the previous year, with the average number of days lost being 13.6 days. The median number of days lost to work or school as a result of asthma was 3 days.

#### **Emotional burden**

Asthma imposes an emotional and psychological burden, in addition to the physical burden of disease.





**Figure 2.** Months when symptom are more frequent or severe

For many patients their asthma led to them to feeling tired or fatigued (70%), fearful (28%), depressed (15%), or embarrassed (13%). Twenty one percent felt frustrated as a result of their asthma.

A substantial proportion of the patient population (44%) had experienced what they perceived to be life-threatening asthma episodes with 30% reporting at least one within the previous year.

### **Productivity**

Aside from days lost at work and school, asthma can have a significant impact on productivity. Adults and adolescents with asthma were asked to rate their productivity on a typical day, on a scale of 0 to 100%. Overall, patients with asthma in Thailand rated their productivity on a typical day at 84% of what ideally could be achieved. They were then asked to rate their productivity on the same scale of 0 to 100% at times of the year when their asthma was at its worst. In this setting they rated their productivity at 48%, which equates to a 36% decline in productivity when their asthma is at its worst.

### **Asthma treatment and medication use**

Rescue medication in the previous four weeks was used by 44% of asthma patients while 54% had used a controller medication. However 67% of asthma patients who had used controller medication in the previous year did so in the form of a pill, while 57% reported taking it as an inhaler. Very few reported taking their controller medication as a nebulizer (6%) or a liquid (2%). Among those

reporting use of a controller in the previous year, 58% used it every day, 7% 4-6 days per week, 12% 1-3 days per week, 8% used it less than once a week and 15% used it only as needed.

Oral steroids had been used to treat asthma symptoms in the previous year by 40% of patients, with the average number of times when it was used for 3 days or longer being 24 times, with the median being 4.

### **Patient's attitudes**

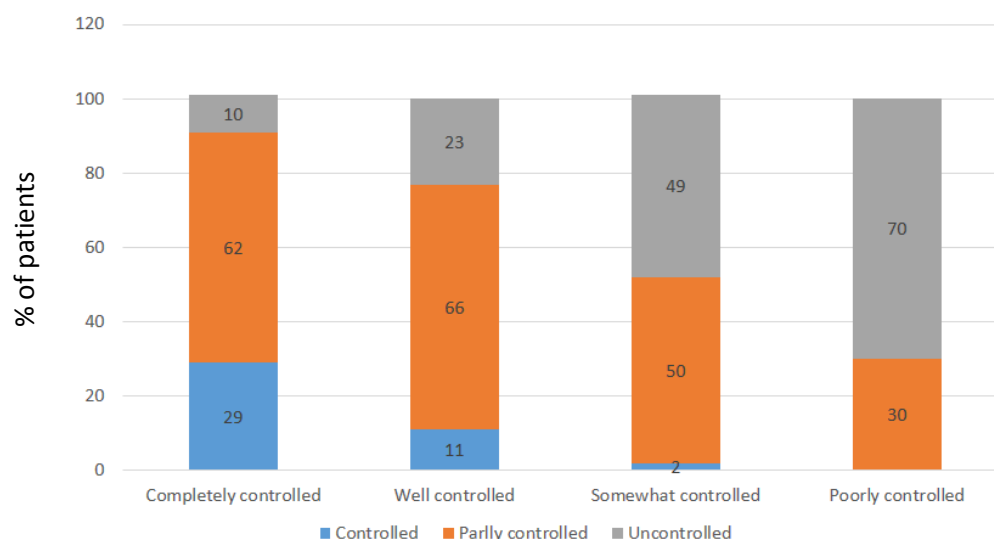
#### Patient's attitude about control

Patients in Thailand overestimated their level of control. When asked how well they felt their asthma was controlled during the past four weeks, the majority of patients reported having asthma completely (5%) or well controlled (56%). In contrast, when asthma control was assessed according to GINA guidelines, only 8% of the patients would be classified as having controlled asthma.

Among those patients who reported that their asthma had been completely controlled in the past 4 weeks, only 29% would be classified as having well-controlled asthma in the same time period (Figure 3). Patient perceptions about what constitutes well-managed asthma reveal a serious communication gap about asthma management that could undermine optimal asthma treatment.

To better understand patient perceptions of control, the patients were asked whether they would consider their asthma to be well controlled based on





**Figure 3.** Control classification by perceived control

a series of outcomes. The majority of asthma patients agreed that they would consider their asthma well controlled if their asthma bothered them less than 50% of the time when they were exercising, if they had exacerbations only 3 or 4 times a year and if they only have 2 urgent doctor visits per year (Figure 4).

#### Patient's attitude about asthma treatment

More than 71% of the patients agreed that preventative medicines are not necessary when symptoms are not experienced regularly, 43% worry about taking oral steroids and 38% worry about using inhaled steroids (Figure 5).

### **Discussion**

This study provides insight into the management of asthma in Thailand and shows that even though there are evidence-based guidelines and effective controllers, patients in Thailand still suffer considerably from asthma and generally have poor control. Although this study shows a failure of treatment to achieve effective control, it more importantly, shows that the attitude and understanding of patients with respect to their asthma and its treatment is poor. This strongly suggests there is an urgent need to develop more effective educational and interventional strategies targeted at the broader asthma population.

This survey shows that even though there has been a significant effort to implement GINA Guidelines, asthma patients in Thailand still suffer from significant asthma morbidity. It is disturbing

that: 36% of patients surveyed had exacerbations in the past year (17% hospitalized, 35% unscheduled emergency visits); 44% missed work or school; and 44% had feared for their life due to asthma. Only 8% of patients in Thailand appear to have well-controlled asthma. These findings strongly suggest that there has been no improvement in asthma management since asthma care was assessed ten years earlier,<sup>3</sup> strongly suggesting there is a need to critically review guideline implementation, patient education and possibly more importantly how to generate patient engagement and insight into asthma care in Thailand.

Some insight into the size of the problem can be gained from patient responses to questions on attitudes to their asthma and treatment. These showed that patients have low expectations with a majority stating that asthma symptoms arising from exercise 50% of the time was consistent with being well controlled. They similarly thought they were well controlled if they had only 3 or 4 exacerbations a year; and if they only had two urgent doctor visits per year. Such belief systems cause patients to underestimate the instability of their asthma control. To improve asthma outcomes we need to improve patients' aspirational goals with respect to their treatment. GINA guidelines state clearly that the goals of asthma management are to gain good current control and prevent future risk.<sup>4</sup> This highlights the need to emphasize with patients the short and long-term goals of asthma treatment. Secondly, those surveyed had some significantly

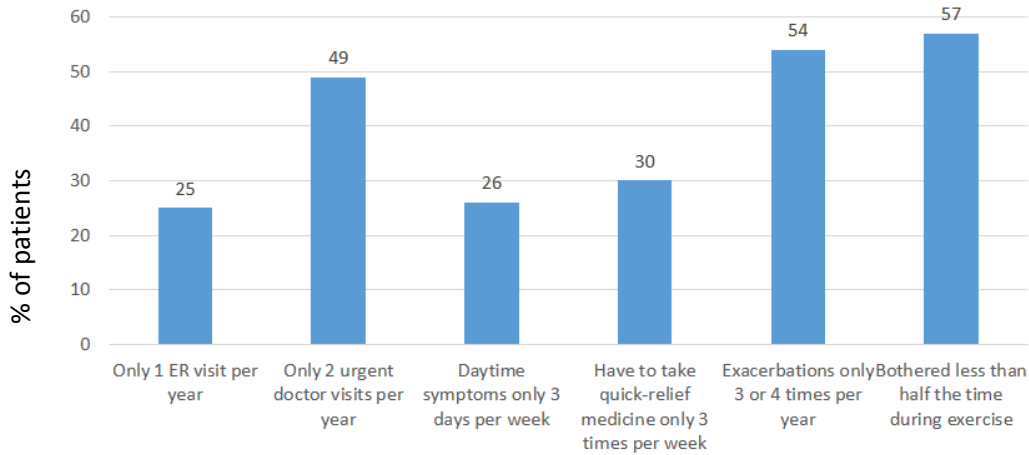


Figure 4. Patient-reported attitudes about asthma management

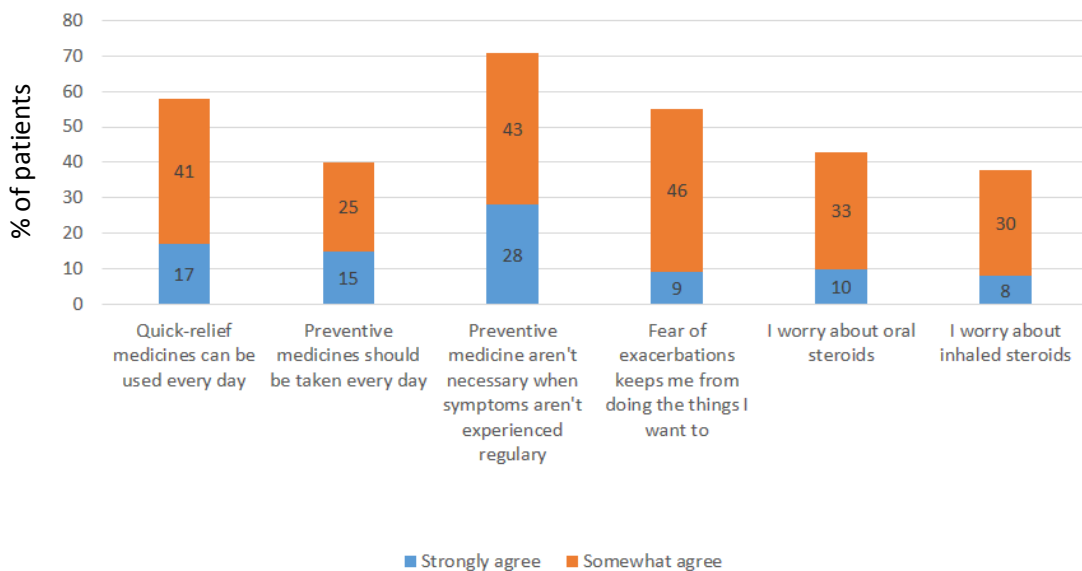


Figure 5. Patient-reported attitudes about asthma and asthma treatment

false concepts about asthma therapy. Over 70% of the patients believed that preventative medicines are not necessary when they are asymptomatic and, in a similar mindset, nearly 60% felt that quick-relief medicines can be used on daily basis. Addressing this is important as it is well documented that patients' knowledge and self-management skills correlate with asthma morbidity.<sup>5</sup> Thirdly, fear of inhaled corticosteroids may be the most important barrier to achieving optimal asthma treatment. This study showed that up to 38% of the patients are concerned about using inhaled steroids. This incorrect perception may lead to poor compliance and worse asthma outcomes.

To improve asthma treatment we have to better understand patients' attitudes to asthma and asthma treatment and have greater insight into the emotional and economic drivers that are influencing treatment choices. Our study shows that despite the huge effort of GINA Guideline implementation, large numbers of patients still suffer badly from asthma. Our study reveals patient's attitude to asthma and asthma treatment is the most likely explanation for the failure of guideline implementation. To improve asthma treatment we need to develop the educational and interventional strategies targeted at these specific problems.



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### Conflict of interests

Dr. Boonsawat has received speakers' honoraria from AstraZeneca, GlaxoSmithKline, MSD, Nycomed, Otsuka and Boehringer.

PJ Thompson received consultation fee from MSD.

Rab Faruqi and Piriya Poonnoi are employees of MSD.

Uraiwan Zaeoui and Chanee Samosorn had no conflict of interests.

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