



# Effective Health Care

## Self-management of Asthma

### Nomination Summary Document

#### Results of Topic Selection Process & Next Steps

- The broader topic of self-management in asthma is addressed by three guidelines and three systematic reviews. However, we identified limited evidence regarding the role of psychological factors in the self-management of asthma. A systematic review of the role of psychological factors in self-management programs for adults and children with asthma is not feasible due to the limited data available at this time.
  - Global Initiative for Asthma (GINA). Global strategy for asthma management and prevention. Vancouver (WA): Global Initiative for Asthma (GINA); 2014.
  - Scottish Intercollegiate Guidelines Network (SIGN), British Thoracic Society. British guideline on the management of asthma. A national clinical guideline. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network (SIGN); 2012 May. 141 p. (SIGN publication; no. 101).
  - Management of Asthma Working Group. VA/DoD clinical practice guideline for management of asthma in children and adults. Washington (DC): Department of Veteran Affairs, Department of Defense; 2009.
  - Denford S, Taylor RS, Campbell JL, et al. Effective behavior change techniques in asthma self-care interventions: Systematic review and meta-regression. *Health Psychol.* 2014 Jul;33(7):577-87.
  - Kirk S, Beatty S, Callery P, et al. The effectiveness of self-care support interventions for children and young people with long-term conditions: a systematic review. *Child Care Health Dev.* 2013;39(3):305-24.
  - Coffman JM, Cabana MD, Yelin EH. Do school-based asthma education programs improve self-management and health outcomes? *Pediatrics.* 2009;124(2):729-42.

#### Topic Description

**Nominator(s):** Individual

**Nomination Summary:** Asthma is the most common chronic disease in childhood and is highly prevalent in adulthood, placing great population health and economic burdens on health care resources. Effective asthma management can reduce adverse outcomes and improve utilization of health care resources. The nominator is interested in psychological factors in asthma management, and whether self-management of asthma improves patient outcomes and appropriate health care utilization.

**Staff-Generated PICO:**

**Population(s):** Children over 5 years of age, adolescents, and adults with asthma, including those with asthma and a mental health condition

**Intervention(s):** Self-management of asthma. In the literature, self-management has involved such aspects as appropriate use of medications; communication with family,

friends, and health professionals; nutrition; exercise; decision making; and ability to evaluate new treatments

**Comparator(s):** Usual care; alternative programs/types of self-management

**Outcome(s):** Reduction in premature deaths, improvement in asthma symptoms and lung function test results, and improvement in quality of life, appropriate medication use, and utilization of health services

**Key Questions from Nominator:** Does self-management of asthma improve patient outcomes and appropriate health care utilization? (The nominator mentions psychological factors but it is not apparent whether this refers to the intervention of self-management or to its impacts. Psychological factors may influence patients' capacity for self-management.)

## Considerations

- The topic meets EHC Program appropriateness and importance criteria. (For more information, see <http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/>.)
- In 2011, 39.5 million people, including 10.5 million children, in the US were diagnosed with asthma. Despite various effective treatment modalities, a large proportion of patients have asthma that is uncontrolled. These patients are at increased risk of developing severe exacerbations and death and suffer from a poor quality of life, and pose a high economic burden, with an estimated cost of \$56 billion per year in the US, according to Medical Expenditure Panel Survey data from 2007.
- Self-management refers to the interventions, training, and skills by which patients with a chronic condition or disease can effectively learn how to take care of themselves. Self-management programs for asthma focus on teaching patients how to manage the burden of the disease and achieve asthma control, i.e., normal or near normal pulmonary function, maintenance of normal activity levels, and minimal need for short-acting beta2-agonist inhalers for quick relief of asthma symptoms ( $\leq$  twice per week). Although the quality of research varies due to the varied types of self-management programs, including lay-led, professionally-led, and community-based programs, reported program benefits include improvement in asthma symptoms and lung function testing, quality of life, appropriate medication use, and utilization of health services.
- Psychological factors have been identified as having a role in asthma self-management in that they can affect outcomes via their effects on treatment adherence and symptom reporting. Psychological variables barriers, such as faulty symptom attribution, adoption or rejection of the sick role, and low self-esteem, may have a negative impact on treatment adherence, for example. Emotional stress can precipitate or exacerbate acute and chronic asthma. In addition, the presence of a chronic and potentially life-threatening illness such as asthma may exert enough stress in vulnerable patients that they develop an anxiety or depressive disorder. Although there is evidence that depression is common in people with asthma and exerts a negative impact on outcome, there is limited research on whether improving symptoms of depression results in better control of asthma symptoms or improved quality of life in patients with asthma.
- For self-management of asthma there were three relevant guidelines that addressed the topic:
  - We identified the Global Initiative for Asthma guideline that is broadly about asthma care and includes certain aspects of self-management for children and adults. For children with asthma, the guideline recommends development of a partnership between the patient and his or her health care provider and parents/caregivers. The aim of this partnership is “guided self-management,”

defined as the patient's ability to control his or her own condition with guidance from a health care professional.

- We identified the British Thoracic Society guideline on asthma management that is also broadly about asthma care and addresses children and adults with asthma. The guideline recommends self-management education that is focused on individual needs and reinforced by a written personalized action plan.
- We identified the Department of Veterans Affairs (VA) and Department of Defense (DoD) guideline on asthma management that provides recommendations on asthma care for children and adults with asthma. The VA/DoD guideline specifically addresses the role of psychological factors, including the presence of emotional and psychological disorders, and concludes that social or mental health services may improve symptom treatment and patient perception of symptom control as part of patient well-being.
- We also identified three systematic reviews on self-care and self-management programs for asthma. One review evaluates interventions for adults. The other two reviews focus on interventions for children and adolescents. Each of the reviews found that self-care and self-management programs are effective in improving outcomes. None of the reviews specifically address psychological factors in asthma self-management.
- We identified two in-process guidelines by the National Institute for Health and Care Excellence (NICE); one on diagnosis and monitoring, and another on management. The scope was not available at the time this brief was developed, and it is unclear whether these guidelines would address the role of psychological factors in self-management of asthma.
- Although the broader topic of self-management in asthma was addressed in the literature, there was limited evidence regarding psychological factors. A systematic review on the role of psychological factors in self-management programs for adults and children with asthma is not feasible due to the limited data available at this time.