

Asthma and allergy - I

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Asthma is a complex disease that is increasing in prevalence in many countries. In general, poor people have disproportionately high rates of mortality from asthma. We still don't know what causes this disease or how to cure it, but science shows us that asthma can be well controlled.

The public health response to asthma has several components. One is surveillance, which allows us to quantify how much asthma exists in the population, how severe it is, how well it is being controlled, and how much it costs. Sound data will allow us to make sound decisions when developing asthma programmes.

Education is another component and can be either part of a larger intervention or a stand-alone activity. Coalition building is a third component of the public health response, because a disease of this complexity requires the joint and committed efforts of a variety of partners. Advocacy is also required because asthma needs to be addressed in a comprehensive manner by multiple government agencies. Legislative issues include students' access to medication at school and third-party reimbursement for patient asthma education.

Interventions are a key component and fall into the areas of medical management, environment and schools. Finally, evaluation is needed to allow us to assess whether we are doing things right. A well-designed surveillance system coupled with appropriate process measures will provide sound evaluation results.

Asthma is a complex disease that requires a long-term and multifaceted solution. This includes educating, treating and providing ongoing medical care and monitoring for people with the disease, changing behaviour that leads to asthma or makes it worse and eliminating or avoiding triggers.

Asthma is a chronic disease of the airways that causes recurrent and distressing episodes of wheezing, breathlessness, chest tightness and night time or early morning coughing. Asthma can be difficult to diagnose and to differentiate from other respiratory illnesses.

Airways are the passages that carry air to the lungs. As the airways progress through the lungs, they become smaller, like the branches of a tree. It is currently thought that asthma produces its effects by leading to airway inflammation and airflow limitation. This inflammation may even be present when a person's asthma is asymptomatic (that is, when the person does not have any symptoms).

When asthma is under control, the airways are clear, and air flows easily in and out. When asthma is not under control, the sides of the airways in the lungs become inflamed and swollen. During an attack, muscles around the airways constrict, and less air passes in and out of the lungs. Excess mucus forms in the airways, clogging them even further. The attack, also called an episode or exacerbation, can include coughing, chest tightness, wheezing and difficulty breathing.

Asthma can be difficult to diagnose in infants, young children, the elderly, smokers, workers exposed to chemical inhalants, people with seasonal allergies and people with recurrent acute respiratory infections. Regular physical examination including measurements of lung function and evaluations of a patient's allergic status can help ensure a proper diagnosis.

Epidemiologists describe who has a disease in a population to help identify its causes. Once the cause is understood, interventions can be developed to prevent, manage and control the disease.

Although much is known about asthma physiology, triggers and treatment, more information is needed to adequately define the scope of the problem across the country and to help pinpoint the actual cause of the disease. Epidemiologic studies will help us better understand which subpopulations are most severely affected by asthma and why. That information can help us focus interventions where they can be the most effective.

The prevalence of asthma can be measured from a question on a national health interview survey; it is simply the percentage of respondents who answer "yes" to the question: "In the past 12 months, has anyone in the family had asthma?"

We cannot measure asthma prevalence if the Ministry of Health.

and related activities do not perform such a survey. The prevalence of asthma in children (under 18) is higher than it is in adults (age 18 and older). Asthma is the second most prevalent chronic condition among children. It results in approximately a thousand days of missed school each year.

Some researchers believe that 5 to 34 is a better age range for studying asthma because it is not confounded by the difficulty of diagnosis in very young children and by other diseases in the older population.

Asthma unnecessarily reduces the quality of life for many people. For example, hospitalisations for asthma cause people to miss school, work and other activities. With proper disease management, however, people with asthma can lead healthier and active lives.

The direct costs of asthma include the costs of asthma management programmes, inpatient and outpatient medical care, physician services, emergency visits, ambulance use, drugs, short-term and long-term treatment complications, devices, nursing services, allergy testing and research. Some of the indirect costs of asthma include absence from work and school; travel; time waiting for care; and, at its most extreme, death. Costs most difficult to measure are anxiety, pain, suffering and decreased potential resulting from school absenteeism.

Although appropriate management of people with asthma should decrease the overall cost of the disease to society, the most important benefit would be the improved health and well-being of people with asthma and their families.

Risk factors are characteristics of people that increase the probability that they will experience a specific disease or a condition associated with a disease. Risk factors for asthma include genetic predisposition and environmental exposures, such as house dust mites and environmental tobacco smoke. However, just because a person is at risk of a disease does not mean that he or she will develop that disease. Being aware of the risk factors may help people take precautions to avoid acquiring those diseases or conditions. Other risk factors, in the case of asthma, can cause someone with the disease to have an exacerbation (worsening) of symptoms.

Atopy is a genetic factor characterised by the body's production of immunoglobulin E after exposure to common environmental allergens. A person with high levels of IgE in the blood is more likely to have an allergic response when exposed to certain substances in the environment - so high levels of IgE may predict the future development of asthma. If a person has a parent with asthma, he or she is three to six times more likely to develop asthma than someone who does not have a parent with asthma.

In 2000, the Institute of Medicine in US published the report "Clearing the Air". This report reviews the evidence about indoor air exposures and asthma as presented in the scientific literature. The report looked at components that affected both the development of the disease itself and the exacerbation of symptoms in someone who already has the disease. The committee used a uniform set of categories to summarise its conclusions about the association between exposure to indoor agents and asthma.

Sufficient evidence of a causal relationship means that the evidence is strong enough to document that exposure to these substances causes the disease's onset or exacerbation. Sufficient evidence of an association means that the evidence is strong enough to document an association between the agent and the outcome has been observed in studies in which chance, bias and confounding factors can be reasonably ruled out. Limited or suggested evidence of an association means that the evidence suggests an association, but chance, bias and confounding factors cannot be ruled out with confidence. Four exposures are considered causes of asthma exacerbation: exposures to cat, cockroach, and house dust mite allergen, and exposure of young children to ETS (environmental tobacco smoke).

Four additional exposures are associated with worsening the disease: dog allergen, fungi or moulds, rhinoviruses, and a high level of exposure to nitrous oxides. Evidence suggests an association between asthma exacerbation and exposure to domestic birds, ETS in older children and adults, formaldehyde, fragrances and several respiratory infectious agents. In addition to the indoor agents studied extensively, there are other possible triggers for asthma that affect some people. These triggers can include strenuous physical exercise; adverse weather conditions like freezing temperatures, high humidity and thunderstorms; and some foods and food additives and drugs. Strong emotional states, either positive or negative, can lead to hyperventilation and an asthma episode. However, with proper management, many of these episodes can be avoided.

Asthma can be difficult to diagnose. Clinicians use a variety of means to try to determine whether episodic symptoms of airflow obstruction are present and whether this obstruction is at least partially reversible. A detailed medical history is a key element of this process.