

Macroeconomic Indicators of Asthma

Maia Rukhadze

Department of Allergology and Immunology, Scientific-Research Institute of Experimental and Clinical Medicine, Tbilisi State Medical University, Georgia

Abstract

A new health care strategy competes with existing ones for quality and limited resources. The health care system and its providers are beginning to turn to health economic analyses to help inform choices in the delivery of care. This review article compares the different health socioeconomic studies and characterizes the economic burden of asthma worldwide.

Keywords: *bronchial asthma, costs, socioeconomics*

Asthma is an important cause of chronic morbidity and crucial health problem among children and adults worldwide, with high prevalence rates particularly in many developed countries. Increasing morbidity, hospital admission rates, use of medical services, drug use and, in some countries, increasing mortality rates have been reported.

As asthma is such a common illness, its economic impact is a heavy burden on health care resources [3]. Socioeconomic factors are integral to asthma care, whether viewed from the perspective of the individual sufferer, the health care professional, or organizations that provide health care. While a global perspective on socioeconomic factors is the ultimate goal, most of the literature currently available reflects knowledge gained from developed rather than developing countries [3].

Health care costs and patterns of care of asthmatic patients are influenced by: 1) Type of physician (specialist vs GP), 2) Treatment modality (on-demand, long-term continuous therapy), 3) Labor force participation, 4) Insurance coverage (private vs. statutory), 5) Geographic area (urban vs rural).

Main factors contributing to Socioeconomic costs [1] are: Direct costs: Hospital care, inpatients (hospitalization) care, emergency services, Outpatients services, physician services (consultations), laboratory diagnostic services, medications. Indirect costs: School days lost, workdays lost, caregiver costs, allergen-avoidance measures and environmental adaptation costs (housing, clothes, detergents etc.), early mortality loss. Intangible costs are related to quality of life

impairment and social problems of the patients and their families.

It is a common shared concept that good management of the disease could lead to decreasing morbidity, mortality and costs of asthma. Socioeconomic factors are relevant to the causes of the asthma, access to treatment, and clinical outcomes, although the precise relationships between socioeconomic factors and asthma may vary from country to country.

Worldwide, there is considerable interest in the economic effect of asthma, as evidenced by numerous cost-of-illness studies [5]. These studies are difficult to compare because of differences in definitions of cost sources of unit costs and differing time periods and exchange rates. Some of them are limited to small, select population samples. Although these studies play an important role in local policy, they are limited value for the purpose of international comparisons.

The total cost of asthma in the United States was estimated \$6.4billion, total direct medical costs - \$3.6 billion, indirect costs - \$2.6 billion in the 1990 [5], from 1994 total asthma costs increased up to \$10.7 billion, while total medical direct costs reached - \$6.1 billion, indirect costs- \$4.6 billion [5]. In 1998, asthma in the United States accounted for an estimated \$12.7 billion annually. In 1988 total cost for asthma in UK was estimated \$1793 million, medical direct costs - \$723 million, indirect costs - \$1070 million.

In 1990 the costs of asthma were approximately 1% of all USA health expenditures (Fig.1).

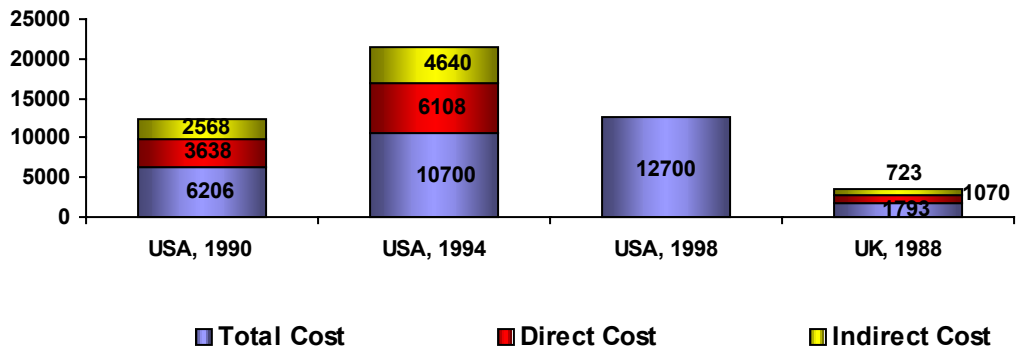


Fig.1 Asthma Costs in USA and UK (in million of USA \$).

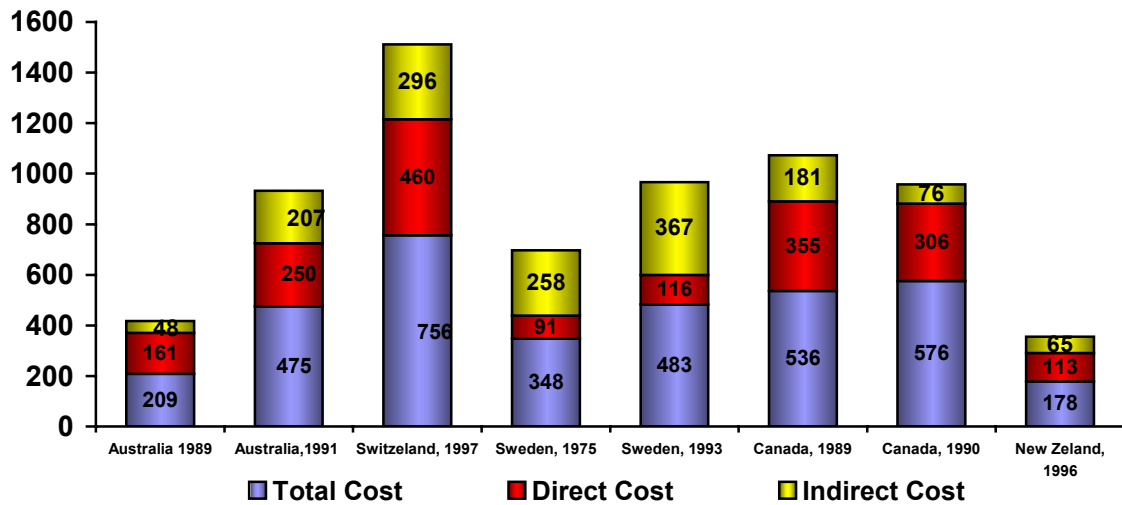


Fig.2 Asthma Costs in the Developed Countries (in million of USA \$)

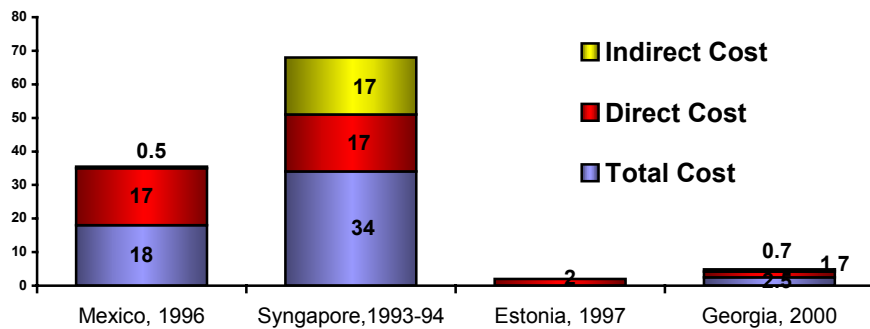


Fig.3 Asthma Costs in the Developing Countries (in million of USA \$).

In Australia asthma costs were estimated in 1989: \$ 209 million - total costs, direct costs - \$ 161 million, indirect - \$ 48 million, but in 1991 these costs were increased up to: \$ 457 million for total costs, direct - \$ 250 million, indirect - \$ 207 million. In 1997 asthma costs in

Switzerland were estimated as \$ 756 million for total costs, \$ 460 million - direct costs, \$ 296 million - indirect costs. In 1975 in Sweden - total asthma costs were estimated \$348 million, direct costs -\$ 91 million, indirect - \$258 million [1], however, in 1993 - total costs

increased up to - \$483 million, direct costs - \$ 116 million, indirect - \$367 million. In Canada in 1989 total asthma cost was calculated as - \$536 million, direct costs - \$355 million, indirect costs - \$181 million. According to the data of 1990 - total cost was \$576 million, direct - \$306 million, indirect - \$76 million [2]. In 1996 asthma in the New Zealand accounted for an estimated total- \$ 178 million, direct - \$ 113 million, indirect- \$ 65 million (Fig.2).

From Latin-American countries asthma costs were estimated in Mexico. Publications describing and analyzing the bronchial asthma problem in Mexico are scarce. However, the ones available identify that this is a growing problem with elevated healthcare costs. Asthma costs were calculated in Mexico in 1996. The total cost for asthma was estimated \$ 18 million, direct costs - \$ 17 million, indirect - \$0,5 million [2]. From Asian countries asthma costs were calculated in Singapore in 1992-1993. To obtain an objective cost evaluation, all levels of direct medical healthcare facilities utilized for the purpose of treatment, management and follow-up of asthma, and also all levels of economic/productivity loss

to the country's economy due to asthma, were evaluated. The costs due to premature death and intangible costs from altered quality of life were not assessed. The total cost for asthma was estimated \$34 million, direct costs - \$17 million, indirect cost - \$17 million. There are only single studies on asthma costs in the countries of the Former Soviet Union, for example in Estonia and Georgia. The total estimated direct costs of asthma diagnosis and treatment during 1997, as extrapolated from the study population, was \$ 2million in Estonia [4]. Cost analysis of the disease is a relatively new discipline for developing countries. In Georgia estimated asthma costs were: total - \$2,5 million, direct costs- \$1,7 million, indirect - \$0,7million [2], (Fig.3).

Conclusion

Socioeconomic studies of asthma represent that this disorder is a large burden to society, both nationally and internationally. Global burden of asthma can be dramatically reduced through efforts by individuals, their health providers, health care organizations and local and national governments.

References

1. European Allergy White Paper, 1998.
2. Gamkrelidze A. G. "Pharmacoeconomics Outside the West." 1121 International Conference on Health Care Delivery for Asthma, New York, 63-101, 2002.
3. Global initiative for asthma (GINA), 2002.
4. Kilwet R.A, Kaur I, Lang A, Aaviksoo A, Nirk L. "Costs of asthma treatment in Estonia." *Europ. Journ of Public Health.* 11: 89 - 92, 2001.
5. Weiss K. B, Sullivan S. D. "The health economics of asthma and rhinitis. I. Assessing the economic impact." *J. Allergy Clin. Immunol.* 107: 3-8.2001.

Макроэкономические индикаторы бронхиальной астмы

Майя Рухадзе

Отделение аллергологии и иммунологии НИИ экспериментальной и клинической
медицины, Тбилисский государственный университет, Грузия

Р Е З Ю М Е

Новые стратегии в системе здравоохранения конкурируют с существующими по качеству и экономичности ресурсов. Производители системы здравоохранения начинают ориентироваться на экономический анализ проблемы принятия решений для усовершенствования системы медицинского обеспечения. Проводится сравнительная оценка различных социальноэкономических исследований в области здравоохранения и характеризуются экономические затраты на бронхиальную астму.

Ключевые слова: *бронхиальная астма, расходы, социэкономика*