

Permit No MITA (P) 073/09/2001  
ISSN 0037 - 5675

JOURNAL OF THE SINGAPORE  
MEDICAL ASSOCIATION

Editor

A/Prof C Rajasoorya

Deputy Editor

Prof Wilfred C G Peh  
A/Prof Sonny Wang Yee Tang

Corresponding Editors

Prof Azrul Azwar (Indonesia)  
Prof Myo Myint (Myanmar)  
Prof Neil Pride (UK)  
Prof Tan Chong Tin (Malaysia)  
Prof Teh Bin Tean (USA)  
Prof Victor Yu (Australia)

Editorial Board

Dr Chin Jing Jih  
Dr Chow Wan Cheng  
Dr Chuah Khoon Leong  
A/Prof Ho Nai Kiong  
Prof Kua Ee Heok  
Dr Kenneth Lyen  
Dr Denis Nyam  
A/Prof Paul Ananth Tambyah  
A/Prof Luke Tan Kim Siang  
Dr Kelvin Tan Kok Hian  
Dr Jackie Tan Yu Ling

Ex-Officio

Prof Low Cheng Hock  
Dr Tham Tat Yean

Editorial Assistants

Chua Gek Eng  
Dr Tham Wai Fong, Eileen

Editorial Address

A/Prof C Rajasoorya, Editor  
Singapore Medical Journal  
Singapore Medical Association  
2 College Road  
Singapore 169850



Cover Picture:  
Rhazes (835-925 A.D.):  
Medical Scholar of Islam  
(Refer to page 331-332)

# The Social Costs of Disease and the Economics of Prevention

**K H Phua**

The recent WHO Report of the Commission on Macroeconomics and Health has provided authoritative support for the evidence linking health, disease and economic development, and has recommended a scaling-up of financial resources directed at essential health interventions that are cost-effective. Even though its focus is mainly on communicable diseases afflicting the developing world, it also categorically states that “many of the non-communicable diseases, including cardiovascular disease, diabetes, mental health and cancers, can be effectively addressed by relatively low-cost interventions, especially using preventative actions relating to diet, smoking and lifestyles”. In many countries, the age-specific death rates of non-communicable diseases are falling while absolute burdens are rising due to an ageing population. Tobacco-related illnesses and deaths however, are rising even on an age-specific basis<sup>(1)</sup>.

Rising health care costs have led to more focus on the need to prevent disease and to promote health as a longer-term strategy for cost-containment. The appeal of disease prevention and health promotion programmes is particularly attractive when weighed against the growing costs for medical treatment and rehabilitation. Increasingly, economic research has been conducted to estimate the social costs of specific diseases to complement the global burden of disease studies conducted by both the World Health Organization and the World Bank. Whether expressed as Quality-Adjusted Life-Years (QALYs), Disability-Adjusted Life-Years (DALYs), Disability-Adjusted Life Expectancy (DALE) or Healthy-Adjusted Life Expectancy (HALE), such measurements are commonly used to compare health status for countries and health outcomes for specific interventions. To assist countries to define essential health packages, a World Bank project was embarked upon to collect information on disease control interventions based on the combined insights of economists, epidemiologists and clinicians. This resulted in a comprehensive study to systematically assess the cost-effectiveness of available interventions, directed at common communicable diseases and chronic diseases like cancers, cardiovascular disease and diabetes, to give valuable guidance in difficult choices confronting policy-makers<sup>(2)</sup>.

The war against disease may have to be fought more with such facts and figures, which not only measure disease burden in terms of mortality, morbidity and disability, but also weigh social costs and benefits in terms of dollars and cents. As preventive and promotive measures are not without costs, such programmes are only justifiable when there is evidence that the value of the benefits is expected to exceed the costs. Thus, economic evaluation is necessary to enable better policy decisions and resource allocation - between alternative strategies, different types of programmes, and the optimum mix of curative, preventive and promotive activities.

Department of  
Community  
Occupational &  
Family Medicine  
National University  
of Singapore  
Singapore 119074

K H Phua, AB cum laude  
SM (Harv), PhD (Lond)  
Associate Professor

Correspondence to:  
A/Prof K H Phua  
Tel: (65) 6874 4984/4988  
Fax: (65) 6779 1489  
Email: cofpkh@nus.edu.sg

The common methods of economic evaluation in health care including cost-benefit, cost-effectiveness or cost-utility analysis, are quite well documented and understood<sup>(3)</sup>.

These tools are potentially useful to help to “do the right things right”, but this objective is easier said than done. Conducting health economic studies requires considerable inter-disciplinary expertise as well as inter-sectoral collaboration. In the area of health promotion, such evaluation is particularly difficult to do due to the difficulties in showing cause and effect relationships, multiple causality and accountability, differential timing of potential benefits, time-lags of behavioural changes, etc. Despite these inherent difficulties, there has been some ground-breaking work to apply the basic conceptual framework of economic evaluation in preventive care and health promotion programmes<sup>(4)</sup>. Invariably, most analyses of health expenditure and economic appraisals have shown not just the direct health costs attributable to a disease, but the more substantial indirect costs of lost productivity due to illness or premature death, and other intangible costs including pain and suffering which may not be captured in monetary terms.

In Singapore, much progress has been achieved through the national health programmes and the health care system in general. Yet, in the face of mounting expenditures and competing demands, there will be the inevitable questioning of relative efficiency and cost-effectiveness of public spending. The national health promotion programmes and disease control strategies will not be spared. Are we pursuing the right strategies and how much should we spend on this prevention versus that promotion programme? For example, how much can we potentially save from smoking control programmes? What further gains in efficiency and effectiveness could be accrued from expansion of new or existing disease management programmes? Accordingly, there has been some growing interest in conducting evaluative studies locally, and some pioneering efforts have been attempted (as exemplified in the two articles in this issue of the Singapore Medical Journal on the social cost of smoking and a review of health promotion programmes in Singapore).

These evaluation and reviews are to be encouraged. To justify public expenditure and also to get the “biggest bang for the buck”, more investments in time and resources should be channelled towards such types of health services research. Sometimes, the consequences of our public health action or lack of action may have to be expressed in monetary or financial jargon in order to get the message through. The message is thus not to show that prevention works, but rather to show which form of prevention is worthwhile and which is not. As in so many fields of endeavours, informed choice is an important objective. It is that objective that economics can promote in determining strategies for prevention. Ultimately, the key question to be answered here is “Is an ounce of prevention worth a pound of cure<sup>(5)?”.</sup> **SMD**

## REFERENCES

1. Macroeconomics and health: investing in health for economic development, Geneva: World Health Organization, November 2001; 3.
2. Jamison DT, et al (eds), Disease control priorities in developing countries, New York: Oxford University Press, 1993.
3. Drummond, MF, et al (eds), Methods for the economic evaluation of health care programmes, 2<sup>nd</sup> Edition, Oxford University Press, 1997.
4. Shepard DS and Thompson MS. First principles of cost-effectiveness analysis in health , reprinted in Windsor RA, et al (eds), Evaluation of Health Promotion and Education Programs, Mayfield Publishing Company, 1984.
5. Cohen DR and Henderson JB. Health, prevention and economics, Oxford University Press, 1988.

## Publisher

Singapore Medical Journal  
Level 2, Alumni Medical Centre  
2 College Road  
Singapore 169850  
Tel: 6223 1264  
Fax: 6224 7827  
URL <http://www.sma.org.sg>

## Design and Advertising

Lancer Communications Pte Ltd  
69 Spottiswoode Park Road  
Singapore 088659  
Tel: 6324 4337  
Fax: 6324 4661  
Email: [studio@lancer.com.sg](mailto:studio@lancer.com.sg)

For advertising placement,  
call or email

• Charlie Teo at  
Tel: 6324 4337  
Email: [charlie@lancer.com.sg](mailto:charlie@lancer.com.sg)

Printed by Entraco Printing Pte Ltd

*The Singapore Medical Journal is published monthly by the Singapore Medical Association. All articles published, including editorials, letters and book reviews represent the opinion of the authors and do not reflect the official policy of the SMA or Institution with which the authors are affiliated unless this is clearly specified. The Publisher cannot accept responsibility for the correctness or accuracy of the advertisers' text and/or claim or any opinion expressed. The appearance of advertisements in the Journal does not necessarily constitute an approval or endorsement by the SMA of the product or service advertised. The contents of this publication are not to be quoted in the press without permission of the Editor.*