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ADDRESSING EMERGING HEALTH RISKS: STRENGTHENING HEALTH PROMOTION

Note by the secretariat

SUMMARY

Changes in lifestyles and living conditions associated with globalization, urbanization and evolving demographic trends have altered the profile of the major causes of mortality and morbidity in the ESCAP region. While infectious and parasitic diseases historically have been the main cause of mortality in the region, this is no longer the case for all subregions and the vast majority of countries. Today, about 62 per cent of all deaths in the region are associated with non-communicable diseases (NCDs).

Whereas NCD prevalence in developing countries historically has been associated with the more affluent urban sector, in the past few decades NCDs have become increasingly common among lower socio-economic groups. Underlying this trend is the rising prevalence of certain health risks, especially those posed by tobacco consumption and unhealthy diets, among the poor. In turn, NCDs are also important causes of the further impoverishment of individuals and households. The medical costs of treating these conditions stretch health systems, usurping scarce financial and human resources required for achieving the Millennium Development Goals. Furthermore, indirect costs derived from lowered productivity also undermine national economic development.

Drawing on evidence and good practice from within the ESCAP region, the present document outlines options for interventions at the national level, as well as avenues for regional cooperation to address the multiple determinants of NCDs, to promote the physical and mental well-being of all for a better and longer life.

The Committee is invited to endorse the ESCAP-WHO collaboration in developing a joint approach and technical support that Governments of the Asian and Pacific region may draw upon to develop their national responses.

CONTENTS

Introduction

1. The past few decades have witnessed important health status improvements in the ESCAP region. At the same time, lifestyle changes associated with globalization, urbanization and population ageing have altered the profile of the major causes of mortality and morbidity, leading to a health transition. While infectious and parasitic communicable diseases historically have been the main cause of mortality in the region, this is no longer the case for all subregions and the vast majority of countries (see table 1). Today, the region is experiencing a surge in the burden related to injuries and non-communicable diseases (NCDs) such as cancers, cardiovascular diseases, chronic obstructive pulmonary diseases, mental disorders and other chronic illnesses. In the ESCAP region, 62 per cent of all deaths and half of the disability burden are associated with NCDs. Injuries account for an additional 7 per cent of the mortality in the region.[1]

Table 1. Causes of death in ESCAP subregions as a percentage of total mortality in 2002

	Infectious and parasitic diseases plus respiratory infections	Maternal and perinatal conditions plus nutritional deficiencies	NCDs	Injuries
North and Central Asia	**4.9**	**1.0**	**80.8**	**13.2**
South and South-West Asia	**33.0**	**10.3**	**47.2**	**9.7**
South-East Asia	**26.3**	**6.5**	**57.6**	**9.4**
East and North-East Asia	**9.2**	**2.9**	**77.2**	**10.5**
Pacific	**11.9**	**4.0**	**77.0**	**6.9**

Source: WHO, "Estimated total deaths by cause and ESCAP country for 2002", data compiled by WHO NCD and Mental Health Cluster, personal e-mail communication, 21 July 2005.

2. Developing countries of the ESCAP region face a double burden: the increasing prevalence of NCDs coexists with significant levels of infectious diseases. There is a need to address the determinants of health from a development perspective, which includes taking into account the major causes of death and morbidity among the poor. Support is growing for a forward-looking view that aligns action on NCDs with efforts to achieve the Millennium Development Goals. In their strategy towards achieving the Goals, Pacific island countries emphasized the need to consider NCDs as part of Goal 6: combat HIV/AIDS, malaria and other diseases.[2]

3. The present document is structured as follows. Chapter I examines the socio-economic consequences of the health transition. It reviews regional trends for the major non-communicable disease risk factors. It analyses not only how poverty and gender increase NCD risks, but also how

[1] WHO, "Estimated total deaths by cause and ESCAP country for 2002", data compiled by WHO NCD and Mental Health Cluster, personal e-mail communication, 21 July 2005.

[2] Secretariat of the Pacific Community, *Pacific Islands Regional Millennium Development Goals Report 2004* (Noumea, SPC, 2004), http://www.forumsec.org.fj/docs/FEMM/2005/MDGGoal6.pdf, accessed on 21 July 2005.

NCDs exacerbate poverty. Chapter II outlines proposals for national-level interventions and chapter III presents potential areas for regional cooperation in NCD prevention and health promotion.

I. HEALTH TRANSITION IMPLICATIONS FOR THE ESCAP REGION

4. Alcohol and tobacco consumption, low fruit and vegetable consumption, low levels of physical activity, high cholesterol levels, obesity and hypertension are among the risk factors contributing to the rising NCD pandemic in the ESCAP region.[3]

5. Ageing is also an important contributing factor in the transition from communicable to non-communicable diseases. Of the world population aged 60 or over, 52 per cent live in the ESCAP region. By 2025, this is projected to increase to 59 per cent.[4] Lifestyle behaviours also influence NCD risks for older persons, the age of incidence and its rate of progress.[5] Furthermore, NCDs are also influenced by a number of determinants, for example socio-economic, gender and environmental, that affect individual choices in behaviours and lifestyles.

6. Mental illnesses encompass a wide range of disorders affecting mental functioning and behaviour, including psychosocial problems such as those associated with substance abuse. The ESCAP region is experiencing a rise in mental health problems. Of the 1 million suicides reported worldwide annually, the WHO Western Pacific region alone accounts for 40 per cent. Injuries are also an important cause of disability and mortality, especially in the developing world where 90 per cent of all injury-related deaths occur. In the ESCAP region, injuries account for 12.5 per cent of the disease burden. The complex range of determinants involved in mental illness and injuries warrants analysis beyond the scope of the present document, which focuses on selected main factors underlying the most common physical NCDs.

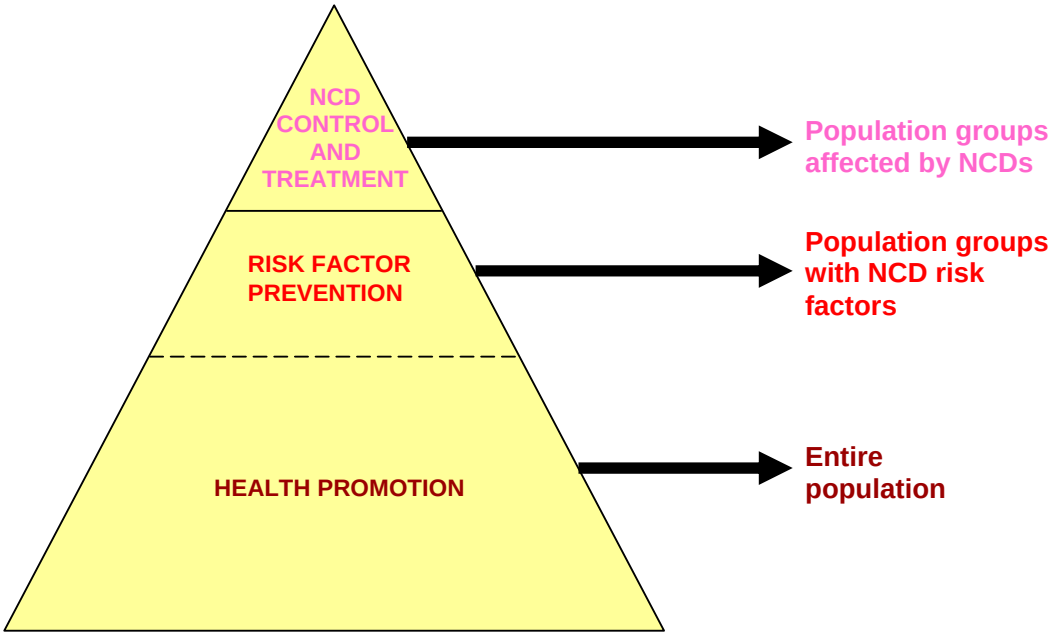
7. The underlying causes of NCDs may be addressed through a three-tier population approach (see figure). Many NCDs are amenable to the treatment of their manifestations and symptoms and the control of their progression (first tier). However, a large proportion of the burden caused by NCDs is preventable. The prevention of risk factors through low-cost, multisectoral interventions, both within primary health care and outside of the health sector, is more cost-effective than treatment. Furthermore, these risk factors often coexist within the same population groups and interact with one another (see table 2). These risk factors also interact with social, economic and environmental determinants. One level of action is to move from a single-disease-specific curative to integrated preventive approaches that concurrently address common health risk factors (second tier). For example, alcohol and tobacco consumption, coupled with an unhealthy diet and physical inactivity, has an impact on the prevalence of cardiovascular diseases.

[3] WHO, *The World Health Report 2002: Reducing Risks, Promoting Healthy Life* (Geneva, WHO, 2002).

[4] ESCAP, "Health and development: the development determinants of health", Document E/ESCAP/SHD/1 (Bangkok, ESCAP, 2004).

[5] WHO, *Ageing and Health: A Health Promotion Approach for Developing Countries* (Manila, WHO Regional Office for the Western Pacific, 2003).

Figure. Three-tier population approach to NCDs



Source: Adapted from Sania Nishtar, "Prevention of non-communicable diseases in Pakistan: an integrated partnership-based model", *Health Research Policy and Systems*, vol. 2, 2004, pp. 2-7.

Table 2. Coexistence of risk factors and their impact on major NCDs[a]

	Cardiovascular diseases[b]	Diabetes	Cancer	Respiratory diseases[c]
Smoking	X	X	X	X
Alcohol	X		X	
Diet	X	X	X	X
Physical Inactivity	X	X	X	

[a] Modified from Timothy Armstrong and Ruth Bonita, "Capacity building for an integrated non-communicable disease risk factor surveillance in developing countries", *Ethnicity & Disease*, vol. 13, Supp. 2, 2003, pp. S13-S18.

[b] Including coronary heart disease and stroke.

[c] Including chronic obstructive pulmonary disease and asthma.

8. Such preventive and integrated approaches create conditions that are conducive to broader initiatives that go beyond the simple absence of disease to the promotion of health in the spirit of the 1986 Ottawa Charter for Health Promotion (third level). In that context, health promotion was referred to as enabling people to increase control over, and to improve, their health, which was understood as the "state of complete physical, mental and social well-being". To that effect, health promotion "is not just the responsibility of the health sector, but goes beyond healthy life-styles to

well-being".[6] There is a significant overlap between health promotion and risk factor prevention (see figure).

A. Key risk factors

1. Tobacco consumption

9. Tobacco consumption is the largest preventable cause of death worldwide and accounts for 10 per cent of all adult mortality or about 5 million deaths annually. It is clearly associated with different types of NCDs, including cancer, chronic obstructive pulmonary diseases and cardiovascular diseases.

10. Out of the 1.1 billion smokers worldwide, 80 per cent live in low- and middle-income countries.[7] As smoking rates decrease in many developed countries, tobacco corporations are turning their marketing strategies to developing countries, especially in the ESCAP region. Analysis of the prevalence of tobacco use and its impact in the region is complicated by the many forms in which tobacco is consumed. Male smoking prevalence in some ESCAP member countries is among the highest in the world and this trend is rising. Cambodia, China, Indonesia, the Philippines and the Republic of Korea all have prevalence rates of over 60 per cent. China alone accounts for one third of all the cigarettes consumed in the world.[8, 9]

11. Half of the mortality related to tobacco consumption occurs in the developing world and more than three quarters of those deaths occur in the ESCAP region. Furthermore, smoking-related mortality in the 30-69 age group is higher in the developing world than in developed countries.[10] Of all smoking-related deaths worldwide, 20 per cent occur in the WHO Western Pacific region, in which up to 1.2 million Chinese die annually from tobacco-related NCDs.[11]

12. However, given the long latency period between tobacco consumption and the manifestation of many tobacco-related NCDs, current mortality figures only represent the tip of the iceberg. Each day, around 50,000 children in Asia start smoking.[12] Accordingly, NCD morbidity and mortality are likely to worsen. Projections for 2030 estimate that 70 per cent of all smoking-related deaths worldwide will occur in the ESCAP region.

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[6] The Ottawa Charter for Health Promotion was the outcome of the first International Conference on Health Promotion, held in Ottawa on 21 November 1986. For the full text, see WHO (WHO/HPR/HEP/95.1), http://www.who.int/hpr/NPH/ocs/ottawa_charter_hp.pdf, accessed on 18 June 2005.

[7] C.K. Gajalakshmi, Prabhat Jha, Kent Ranson and Son Nguyen, "Global patterns of smoking and smoking-attributable mortality", in Prabhat Jha and Frank Chaloupka, eds., *Tobacco Control in Developing Countries* (New York, Oxford University Press, 2000), pp. 11-39.

[8] Teh-Wei Hu and Zhengzhong Mao, *Economic Analysis of Tobacco and Options for Tobacco Control: China Case Study*, HNP Discussion Paper, Economics of Tobacco Control Paper No. 3 (Washington, World Bank, 2002).

[9] WHO, *Non-communicable diseases in South-East Asia region: a profile* (New Delhi, WHO Regional Office for South-East Asia, 2002).

[10] M. Ezzati and A.D. Lopez, "Regional, disease specific patterns of smoking-attributable mortality in 2000", *Tobacco Control*, vol. 13, No. 4, 2004, pp. 388-395.

[11] Liam Fitzpatrick, "Can Asia kick the habit?", *Time*, vol. 165, No. 9, 7 March 2005.

[12] Ibid.

2. Alcohol consumption

13. Alcohol intoxication and dependence are at the root of a wide range of health and social problems. In addition to its association with cardiovascular diseases, liver cirrhosis and cancer, high alcohol consumption is also an important contributing factor in road crashes and intentional violence. Worldwide, alcohol has been estimated to cause 1.8 million deaths annually, almost half due to injuries.[13] Of the global disease burden of alcohol, 24 per cent occurs in developing countries of East and South-East Asia and the Pacific. In the Russian Federation, male life expectancy has dropped from 64 (1990) to 60 years (2000) owing partly to alcohol consumption and smoking.

14. As a result of the liberalization of policies concerning alcohol production, aggressive advertising and changes in social values and lifestyles, the global availability and consumption of alcohol have increased in recent decades, mostly in developing countries. Average consumption and drinking patterns vary widely across the ESCAP region. The highest levels of consumption reported during 2003 were for the Russian Federation (10.58 litres of pure alcohol per capita) and New Zealand (9.79 litres). Conversely, Bangladesh, Cambodia, Indonesia, the Islamic Republic of Iran, Pakistan and Sri Lanka have rates below 0.5 litre per capita.[14]

15. In many countries of the region, especially in rural areas, alcoholic beverages are produced through the fermentation of grains and fruits. Their low prices drive their consumption by the poor. The lack of legally binding quality controls has prompted cases of adulteration with harmful substances, causing blindness and death.

3. Diet and physical inactivity

16. New lifestyle trends in most developing countries have changed the dietary habits and levels of physical activity. The rising intake of saturated fats, animal products, salt and sugar is contributing to an increase in diet-related NCDs, such as obesity, cancer, coronary heart and cerebrovascular diseases, hypertension and type II diabetes. Changes in food production, marketing and retailing are associated with these trends. The advent of processed foods and the proliferation of fast food outlets are increasingly limiting the availability of affordable nutritious and fresh foods.

17. Diet-related NCDs are today more evident in countries with a lower per capita GDP than in the recent past and have become major contributors to the burden of disease in developing countries. In 1995, diet-related NCDs accounted for 41 per cent of total mortality in China and 32 per cent in India.[15]

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[13] Jürgen Rehm, Nina Rehn, Robin Room, Maristela Monteiro, Gerhard Gmel, David Jerningan and Ulrich Frick, "The global distribution of average volume of alcohol consumption and patterns of drinking", *European Addiction Research*, vol. 9, No. 4, 2003, pp. 147-156.

[14] WHO, *Global Status Report on Alcohol 2004* (Geneva, World Health Organization, 2004).

[15] Barry M. Popkin, Susan Horton, Soowon Kim, Ajay Mahal and Jin Shuigao, "Trends in diet, nutritional status and diet-related non-communicable diseases in China and India: the economic costs of the nutrition transition", *Nutrition Reviews*, vol. 59, 2001, pp. 379-390.

18. It is estimated that there are 1 billion overweight and 300 million obese adults worldwide, the majority living in the ESCAP region. Obesity prevalence, especially among women, in many developing Pacific island countries and areas ranks among the highest in the world, in some cases reaching up to 80 per cent.

19. Related to obesity is the rapidly increasing prevalence of type II diabetes in the region. Projections for 2025 estimate that diabetes prevalence in countries such as India and Pakistan could reach 6.0 and 8.7 per cent of the population, respectively. In addition, new cases are also occurring at younger ages than in higher income countries.[16]

20. The low consumption of fruits and vegetables has been linked to the higher risk of stroke, coronary heart disease and certain gastrointestinal cancers. Adequate patterns of diet and physical activity not only help to reduce these risks but are also important in the promotion of healthier and longer lives. Regular consumption of fruits and vegetables helps to maintain normal blood pressure and bone density, enhances joint functions and improves memory and other cognitive functions in older persons. Regular physical activity also has important health benefits, both physical and mental, that go beyond its effects on regulating weight. It helps to prevent or reduce hypertension and lowers the risks of colon cancer and diabetes.

B. The cycle of non-communicable diseases and poverty

1. Development determinants

(a) Socio-economic status

21. Although NCD incidence in developing countries has been classically associated with urban affluence, the increasing prevalence of smoking and being overweight among poorer groups is altering the pattern towards that encountered in developed countries, which is a higher incidence among those with a lower socio-economic status.[17, 18]

22. A number of surveys in the ESCAP region indicate higher tobacco consumption among poorer groups.[19, 20] Likewise, obesity is associated more with lower household income than in the recent past. For countries with a GNP per capita over US$ 1,700, belonging to lower income groups is

[16] Abdul Ghaffar, K. Srinath Reddy and Monica Singhi, "Burden of non-communicable diseases in South Asia", *British Medical Journal*, vol. 328, 2004, pp. 807-810.

[17] Tony Blakely, Simon Hales, Charlotte Kieft, Nick Wilson and Alistair Woodward, "The global distribution of risk factors by poverty level", *Bulletin of the World Health Organization*, vol. 83, No. 2, 2005, pp. 118-126.

[18] M. Ezzati, S. Vander Hoorn, C.M.M. Lawes, R. Leach, W.P.T. James, A.D. Lopez, A. Rodgers and C.J.L. Murray, "Rethinking the "diseases of affluence" paradigm: global patterns of nutritional risks in relation to economic development", *Public Library of Science Medicine*, vol. 2, No. 5 (133), 2005, pp. 404-412.

[19] Martin Bobak, Prabhat Jha, Son Nguyen and Martin Jarvis, "Poverty and smoking", in Prabhat Jha and Frank Chaloupka, eds., *Tobacco Control in Developing Countries* (New York, Oxford University Press, 2000), pp. 41-61.

[20] World Bank, *Curbing the Epidemic: Governments and the Economics of Tobacco Control* (Washington, World Bank, 1999).

a systematic risk factor for obesity and its associated conditions.[21, 22] Studies in India show that other NCD risk factors, such as hypertension and diabetes, are also becoming increasingly common among the poorest groups, especially in urban areas.[23] In addition to the increase in the consumption of processed foods, globalization has also fostered increasing levels of food trade. This has allowed for year-round access to some foods for those at the upper income level. However, the options of the poor have become limited as fresh foods that previously were available locally are now being exported.

23. Risk factors and NCDs will become more prevalent among the poorer groups in the developing world, as is the case in developed countries. Thus, in the new scenario the double burden of disease is not only concentrated in the poor countries but also among the poor and marginalized groups within them.

24. The workplace exposes individuals, especially the poor, to the risk of NCDs and injuries. The burden of occupational diseases and injuries is particularly high where occupational health and safety conditions are poor and a large segment of the labour force is engaged in high-risk activities. Occupational hazards are the tenth leading cause of morbidity and mortality, responsible for up to 2 million deaths per year worldwide.[24] The most common occupational NCDs include respiratory diseases, cancer, cardiovascular diseases, reproduction and neurological disorders, hearing loss, back pain, dermatological conditions and psychological disorders. In some countries of the region, the prevalence of silicosis among miners and asbestosis among mill workers could be as high as 30 per cent.

(b) Gender

25. Discriminatory practices limit women's access to health services in the region. Lower literacy rates and social status deprive women from gaining knowledge on health issues, which in turn influences their own health status and behaviour. Some of these social determinants result in women being differently affected by some NCDs and their risk factors. Women's health needs beyond their reproductive years is particularly neglected.

26. In Asia, 60 to 80 per cent of households rely on biomass fuel for cooking and heating. Prolonged indoor exposure to smoke contributes to several NCDs, including chronic obstructive pulmonary disease, lung cancer and blindness, and fuels the spread of tuberculosis.[25, 26] Women and

[21] Barry M. Popkin, "The nutrition transition in the developing world", *Development Policy Review*, vol. 21, 2003, pp. 581-597.

[22] C.A. Monteiro, W.L. Conde, B. Lu and B.M. Popkin, "Obesity and inequities in health in the developing world", *International Journal of Obesity*, vol. 28, No. 9, 2004, pp. 1181-1186.

[23] Abdul Ghaffar, K. Srinath Reddy and Monica Singhi, "Burden of non-communicable diseases in South Asia", *British Medical Journal*, vol. 328, 2004, pp. 807-810.

[24] WHO, *The World Health Report 2002: Reducing Risks, Promoting Healthy Life* (Geneva, WHO, 2002).

[25] B.H. Chen, C.J. Hong, M.R. Pandey and K.R. Smith, "Indoor air pollution in developing countries", *World Health Statistics Quarterly*, vol. 43, No. 3, 1990, pp. 127-138.

small children are particularly at risk, given their exposure to indoor pollution. In India, about one half of active tuberculosis in adults can be linked to exposure to indoor cooking.[27] WHO estimates that each year about 2 million people in developing countries die from the consequences of indoor pollution, 28 per cent of them in India alone, where the disease burden of indoor pollution is as large as the burden of poor water and sanitation.

27. Although smoking prevalence among women in the region is low (12 per cent of all women in 1999), figures are rising. There are gender-specific effects of smoking.[28] Smoking amplifies even further the risk of coronary heart disease induced by the use of oral contraceptives. Women who smoke also face higher risks of pregnancy and delivery complications, while their infants suffer higher risks of perinatal mortality and lower birth weights.

28. Women are prime targets in the marketing strategies of tobacco corporations that often equate smoking with women's emancipation and sex appeal. According to a study on smoking habits among Asian women, 40 per cent believed that smoking helped them control their weight.[29]

29. There are gender disparities in the association between a lower socio-economic status and obesity for countries with a GNP above US$ 1,700. The higher burden of obesity among the poor occurs at lower levels of GNP per capita among women than among men.[30]

30. Thus, in many developing countries NCDs could contribute not only to increasing health inequalities between the rich and the poor, but also deepen the existing gender gap in health status.

2. Socio-economic impact on individual and household economies

31. Tobacco and alcohol expenditures have an opportunity cost, diverting economic resources from other essentials such as food, education and health care. They often represent a significant share of total household income. In Nepal, expenditures on tobacco products could amount to 9.6 per cent of total household income in the lowest income quintile, almost twice that in the highest income quintile.[31]

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[26] H.N Saiyed, T.S. Patel and V.N. Gokani, "Indoor air pollution in India: a major environmental and public health concern", *Indian Council of Medical Research Bulletin*, vol. 31 No. 5, 2001, pp. 1-9.

[27] Vinod Mishra, Robert D. Retherford and Kirk R. Smith, "Indoor air pollution. the quiet killer", *Asia Pacific Issues*, vol. 63, 2002, pp. 1-8.

[28] Virginia Ernster, "Impact of tobacco use on women's health", in Jonathan M. Samet and Soon-Young Yoon, eds., *Women and the Tobacco Epidemic: Challenges for the 21st Century* (Geneva, World Health Organization, 2001), pp. 1-16.

[29] National Center for Tobacco-Free Kids, *Women and tobacco: global trends*, 2000, http://tobaccofreekids.org/campaign/global/pdf/women.pdf, accessed on 25 June 2005.

[30] C.A. Monteiro, Erly C. Moura, Wolney L. Conde and Barry M. Popkin, "Socioeconomic status and obesity in adult populations of developing countries: a review", *Bulletin of the World Health Organization*, vol. 82, No. 12, 2004, pp. 940-946.

[31] Yagya B. Karki, Kiran Dev Pant and Badri Raj Pande, *A study on the economics of tobacco in Nepal*, HNP Discussion Paper, Economics of Tobacco Control Paper No. 13 (Washington, World Bank, 2003).

32. Being poor increases the chances of poor health and illness. Illness also has a more severe health and economic impact on those with a lower socio-economic status. Richer groups are more likely to seek early medical attention, making illness more manageable. By contrast, groups with a lower socio-economic status have less access to medical care, which allows NCDs to progress to more advanced stages and results in higher levels of disability and mortality. Once NCDs have developed in poorer groups, higher direct and indirect economic costs ensue.

33. The economic impact of NCDs on individuals and households is particularly significant owing to their chronic nature and association with disability and premature death. Lifelong pharmaceutical treatments for the control of hypertension, hypercholesterolemia and diabetes can devastate household economies. In Bangladesh, out-of-pocket expenditures imposed by each episode of smoking-related illness could amount to US$ 66, equivalent to two to three months of average income.[32] For low-income groups, direct costs associated with diabetic care could drain up to 24.5 per cent of annual household income.[33]

34. In developing countries, several NCDs tend to affect younger age groups than in developed countries. This has serious implications for the productivity of the workforce. In addition to this direct impact, NCDs also impose indirect costs on individuals and their families through the loss of income opportunities owing to lower productivity, job absenteeism, long-term disability, hospitalization and premature death.

3. Impact on health care systems and national economies

35. NCDs impose very high costs on health-care systems and national economies. Secondary and tertiary treatment of NCDs could usurp scarce financial and human resources from action towards other health and social priorities, including actions towards achievement of the health-related Millennium Development Goals.

36. The total cost derived from tobacco-related diseases in China during 1989 reached US$ 3.5 billion (1.5 per cent of GDP), which exceeded the revenue collected by the Government from tobacco products.[34, 35] Concurrently, the costs to China of diet-related NCDs represented a quarter of total

[32] Zulfiqar Ali, Atiur Rahman and Taifur Rahman, *Appetite for nicotine: An economic analysis of tobacco control in Bangladesh*, HNP Discussion Paper, Economics of Tobacco Control Paper No. 16 (Washington, World Bank, 2003).

[33] R. Shobahan, P.R. Rao, A. Lavanya, V. Vijay, A. Ramachandran, "Cost burden to diabetic patients with foot complications – a study from southern India" , *Journal of the Association of Physicians of India*, vol. 48, 2000, pp. 1147-1150.

[34] S.G. Jin, B.Y. Lu, D.Y. Yan, Z.Y. Fu, Y. Jian and W. Li, "An evaluation on smoking-induced health costs in China (1988-1989)", *Biomedical Environmental Sciences*, vol. 8, 1995, pp. 342-349.

[35] Z.M. Chen, Z. Xu, R. Collins, W. X. Li and R. Peto, "Early health effects of the emerging tobacco epidemic in P.R. China: a 16-year prospective study, *Journal of the American Medical Association*, vol. 278, 1997, pp. 1500-1504.

health-care expenditures in 1995. When productivity losses were considered, the total cost due to diet-related NCDs during that year amounted to 2.1 per cent of China's GDP.[36]

37. Given the wide-ranging health and social impact of alcohol abuse, reliable and comparable data on its economic impact are not always available. The cost of alcohol abuse in Australia is estimated to be AUS$ 5.5 billion annually, mostly related to increases in road crashes, crime and lower work productivity.[37] In Japan, during 1987 the total cost of alcohol abuse amounted to 1.9 per cent of GNP. It is estimated that between 15 and 20 per cent of absenteeism and up to 40 per cent of accidents at work in India are attributable to alcohol.[38]

II. STRATEGIC ACTIONS FOR HEALTH PROMOTION

38. Despite the increasing share of NCDs in the national data on disability and mortality, and strong evidence of their economic impact, NCD prevention and health promotion have yet to be mainstreamed into public health and development agendas. Globally, less than half of the countries have prevention plans for cardiovascular diseases, tobacco-related illnesses, diabetes or cancer and a large proportion of them do not have any legislation on tobacco or food. Furthermore, most countries lack surveillance systems for the major NCD risk factors and only 39 per cent have specific allocations for NCDs in their health budgets.[39]

39. The evidence presented underscores the need to reorient health agendas away from the control and treatment of NCDs (first level in figure) towards strategies that prioritize risk factor prevention and health promotion (second and third levels in figure). The treatment of NCDs is not only less health- and cost-effective than preventive approaches, but also excludes the poor, especially when universal health coverage is inadequate or absent. In the ESCAP region, only Australia, Japan, Mongolia, New Zealand, the Republic of Korea, Singapore and Thailand have health-care systems guaranteeing universal and equitable health-care access. As NCD determinants tend to be interlinked, prevention programmes should also comprehensively address common risk factors. Such integrated strategies are more cost-effective than attempts to control individual risk factors.

A. Strengthening knowledge management capacity

40. Evidence of the prevalence of NCDs and their multiple determinants, as well as the impact of interventions, is essential for strengthening policies and interventions. To that effect, Governments, in cooperation with academic institutions, non-governmental organizations (NGOs) and international

[36] Barry M. Popkin, Susan Horton, Soowon Kim, Ajay Mahal and Jin Shuigao, "Trends in diet, nutritional status and diet-related non-communicable diseases in China and India: the economic costs of the nutrition transition", *Nutrition Reviews*, vol. 59, 2001, pp. 379-390.

[37] David J. Collins and Helen M. Lapsley, *Counting the cost: estimates of the social costs of drug abuse in Australia in 1998-9*, Monograph Series No. 49 (Canberra, Commonwealth of Australia, 2002).

[38] WHO, *Global Status Report on Alcohol 2004* (Geneva, World Health Organization, 2004).

[39] WHO, Global forum on chronic diseases prevention and control, http://www.who.int/chp/about/global_forum/en/, accessed on 4 July 2005.

agencies, should sponsor more research on how NCD determinants operate within particular national and subnational settings and how these cover local knowledge.

41. The analysis of the main health determinants does not require extensive infrastructure or human capacity. It could be undertaken within the context of primary health-care facilities. Data on health risk factors should be complemented with information on other socio-economic and environmental determinants. Nevertheless, many developing countries do not have a systematic means of collecting information on risk factors. In other cases, they lack basic equipment and adequate standards for monitoring risk factors.

42. To assist developing countries in building and strengthening their surveillance systems, WHO has introduced the three-pronged "STEPwise approach to surveillance".[40] Information is collected on the following:

(a) Self-reported health behaviour (Step 1): for example, tobacco and alcohol consumption, and dietary and physical activity habits;

(b) Physical measurements (Step 2): for example, blood pressure and weight;

(c) Biological data (Step 3): for example, blood levels of glucose or cholesterol.

As the ultimate goal is not only risk prevention but also the improvement of overall well-being, surveillance should encompass the general population and not be targeted only at high-risk groups (see figure).

43. Health professionals could and should play a pivotal role in NCD prevention and health promotion, not only in the surveillance of risk factors, but also as educators and advocates of healthy behaviour. That calls for the improvement of human capacity within the health-care system. Health-care personnel at all levels require appropriate training on NCD risk factors, in order to be sensitive to the importance of prevention and health promotion beyond their traditional roles.

B. Public education campaigns

44. Given the rising NCD trends, it is essential to engage the general population in health-promoting actions. A major pillar of any health promotion strategy is public education campaigns that foster public understanding of NCD determinants and risk factors, and how diverse population groups could participate in creating healthy living conditions and thus gain the benefits of a healthier lifestyle. The partnerships of diverse stakeholders would enhance the credibility and reach of such campaigns.

45. Strategies for modifying behavioural risk factors are particularly effective when targeted at younger age groups. Preventing the onset of harmful behaviour and the cultivation of lifelong healthy

[40] WHO, *The SuRF Report 1: Surveillance of Risk Factors Related to Noncommunicable Diseases: Current Status of Global Data* (Geneva, WHO, 2003).

habits must begin at as early an age as possible. Risk prevention and health promotion campaigns need to reach the young in school, as well as those that are out of school, including street children and child workers. Strong public education is also critical to the success of regulatory measures.

C. Regulatory measures

46. Campaigns aimed at changing risk behaviour or promoting healthier ones must be complemented by regulatory measures that clearly establish rules of conduct for the corporate sector and individuals. However, increasing trade liberalization and market integration and the lack of global rules and standards on many areas could hamper national regulatory efforts. The exception is tobacco consumption.

47. The WHO Framework Convention on Tobacco Control is the first and only legally binding international agreement on a public health issue. To date, the Governments of 48 ESCAP members are signatories to the Convention.[41] Most Governments in the ESCAP region have in place some type of tobacco control legislation to regulate: (a) smoking in public and in the workplace; (b) the sale of tobacco to minors; (c) tobacco advertisement and sponsorship; and (d) the inclusion of warning labels on cigarette packages. The regulation of alcoholic drinks varies widely across the region. In some countries, the State is directly involved in the production of beer and other spirits, whereas in others the production, sale and consumption of alcohol is prohibited by law.

48. Regulatory measures could also be used to tackle the rise in diet-related NCDs, including through strengthening food standards and improving food labelling to clearly indicate caloric and fat content. They could also establish codes of conduct to prevent the media targeting children in the promotion of items, for example junk foods, that could have harmful consequences on long-term health and well-being. Regulation could also extend to the adherence to air and water quality standards, and increasing health promotion options in infrastructure development and urban planning, for example through the creation of green space.

D. Price measures

49. Despite tobacco and alcohol being addictive, their consumption is responsive to price changes, especially in developing countries.[42] It has been estimated that a worldwide and sustained increase in cigarette prices of just 10 per cent would result in a reduction in demand of 4 per cent in high-income countries and 8 per cent in lower-income countries. This translates into 40 million people quitting smoking worldwide and many more deterred from taking it up, thereby preventing a

[41] WHO, *WHO Framework Convention on Tobacco Control* (Geneva, WHO, 2003). For more information, see http://www.who.int/tobacco/framework/faq/en/index.html, accessed on 10 August 2005.

[42] Frank J. Chaloupka, Teh-wei Hu, Kenneth E. Warner, Rowena Jacobs and Ayda Yurekli, "The taxation of tobacco products", in Prabhat Jha and Frank Chaloupka, eds., *Tobacco Control in Developing Countries* (New York, Oxford University Press, 2000), pp. 237-272.

minimum of 10 million tobacco-related deaths.[43] A World Bank study in South-East Asia highlights that raising taxes on tobacco is an effective tool in tobacco control, with price elasticity being particularly significant in Indonesia, Sri Lanka and Thailand.[44] Taxation of alcohol products has also proved to be effective in reducing alcohol consumption, together with its associated health and social problems.[45]

50. Raising taxes on tobacco could foster cross-border smuggling; however other factors, such as, the level of corruption, and prices in neighbouring countries, seem to have a larger effect. Nearly one quarter of all internationally traded cigarettes are sold on the black market, mainly in Eastern Europe and in the ESCAP region. In several ESCAP countries, the figures for smuggled tobacco as a percentage of domestic sales are among the highest in the world.[46] Tobacco smuggling could have important consequences on the health-care systems of the affected countries, as it not only deprives Governments of revenue but also boosts tobacco demand by lowering cigarette prices. Governments should therefore redouble efforts to harmonize tax structures and smuggling control.

51. Although higher taxes on tobacco could have a disproportionate effect on poor consumers, empirical evidence suggests that price elasticity for low-income groups is significantly higher than for high-income groups. Higher tobacco prices could therefore prompt more of the poor to quit, making tobacco taxation not necessarily regressive but even progressive.[47] Nevertheless, higher taxes could be combined with measures to cushion their short-term impact on poorer groups. These measures for low-income individuals could include the provision of free or subsidized assistance to quit smoking.

E. Multisectoral approaches to health promotion

52. To address the full range of NCD determinants, strategies aiming at NCD prevention and health promotion should also be multisectoral. Interventions within the health-care system must be coordinated with the non-health sectors and engage all levels, from the individual to the national level.

53. While most existing NCD prevention strategies worldwide continue to be vertically oriented, with separate programmes for specific NCDs and risk factors, some countries in the region have

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[43] Kent Ranson, Prabhat Jha, Frank J.Chaloupka and Son Nguyen, "The effectiveness and cost-effectiveness of price increases and other tobacco-control policies", in Prabhat Jha and Frank Chaloupka, eds., *Tobacco Control in Developing Countries* (New York, Oxford University Press, 2000), pp. 427-447.

[44] G. Emmanuel Guindon, Anne-Marie Perucic and David Boisclair, *Higher Tobacco Prices and Taxes in South-East Asia: An Effective Tool to Reduce Tobacco Use, Save Lives and Generate Revenue*, HNP Discussion Paper, Economics of Tobacco Control Paper No. 11 (Washington, World Bank, 2003).

[45] Frank J. Chaloupka, Michael Grossman and Henry Saffer, "The effects of price on alcohol consumption and alcohol-related problems", *Alcohol Research & Health*, vol. 26, No. 1, 2002, pp. 22-34.

[46] David Merriman, Ayda Yurekli and Frank J. Chaloupka, "How big is the worldwide cigarette-smuggling problem?", in Prabhat Jha and Frank Chaloupka, eds., *Tobacco Control in Developing Countries* (New York, Oxford University Press, 2000), pp. 365-392.

[47] Prabhat Jha, Philip Musgrove, Frank J. Chaloupka and Ayda Yurekli, "The economic rationale for intervention in the tobacco market", in Prabhat Jha and Frank Chaloupka, eds., *Tobacco Control in Developing Countries* (New York, Oxford University Press, 2000), pp. 153-174.

embarked on integrated multisectoral programmes. These are good practice models that could serve as valuable sources for reference and adaptation by other countries in the region.

54. To meet the need for integration and a multisectoral thrust, government interventions must be coordinated and incorporated within the wider national strategies. This requires collaboration between the Ministry of Health and other key government ministries, such as agriculture, environment, education, trade, transport, infrastructure development and urban management. In this regard, the creation of an agency that sets the national health promotion strategies and coordinates and facilitates the actions of all key stakeholders is one model (box 1). A multisectoral thrust could also warrant the establishment of an independent consulting body that could bring together expertise from the entire spectrum of stakeholders and from all sectors.

Box 1. Thai Health Promotion Foundation

In the 1990s, the Government of Thailand launched several initiatives to improve food safety, and reduce alcohol and tobacco consumption and traffic crashes. However, these initiatives lacked coordination. As they were financed through general budget allocations, they endured low funding and competition from other line items. In 2001, the Health Promotion Funding Act established the Thai Health Promotion Foundation (ThaiHealth) as an autonomous State agency with its own regular source of funding: a 2 per cent "sin tax" on alcohol and tobacco. The agency includes senior officials from diverse Thai government ministries and agencies.

The Foundation works as a catalyst for health promotion activities, facilitating networks and public-private partnerships and providing them with managerial and financial support. ThaiHealth does not duplicate activities carried out by other government agencies or that can be funded through a regular budget. Instead, it focuses on innovative pilot projects, research and development for health promotion, education and capacity-building. ThaiHealth has assisted programmes for tobacco and alcohol control, the fostering of healthy diets and exercise, road safety and initiatives promoting healthier behaviours in communities and in the workplace. These initiatives have not only increased public awareness of risks, but have also helped to reduce alcohol and smoking prevalence and road crash fatalities.

Source: Thai Health Promotion Foundation, *Annual Report 2003: Executive Summary* (2004), http://www.thaihealth.or.th/en/download/Annualreport2003.pdf, accessed on 1 July 2005.

55. Some countries in the region are among the largest producers of tobacco in the world. In these cases, tobacco provides a significant source of employment and foreign exchange. In view of this, tobacco control programmes should include the development of alternatives to tobacco cultivation and processing, including the provision of assistance to farmers for crop substitution. Strategies aimed at reducing the tobacco supply need to be coordinated at the regional and global levels.

56. Fewer multisectoral initiatives have been taken with regard to diet-related NCDs. National agricultural policies should be made consistent with the promotion of healthier diets. Efforts to

eradicate undernutrition have sometimes resulted in increases in the prevalence of obesity. It is therefore important that public health programmes simultaneously address both those underweight and overweight. China is one of the few countries in the region, and indeed the world, that have taken a multisectoral approach to diet-related NCDs by encouraging the production of healthy food items such as vegetables, fruits, soybean and fish (see box 2). However, in the context of increasing trade liberalization, price policies could be easily neutralized through trade and could be in conflict with World Trade Organization rules on subsidies. It is therefore crucial that multisectoral approaches are coordinated at the national and regional levels.

Box 2. China: Integrated and multisectoral programme for diet-related NCDs

As other countries in the region, China is experiencing an epidemiological transition that has raised the burden of diet-related NCDs. In 1995, 8.1 per cent of Chinese males and 12.2 per cent of females were considered overweight. By 2025, these figures are expected to increase to 36.8 and 39.7 per cent, respectively.[a]

Since the 1990s there has been a coordinated effort between the Government of China and experts on multiple sectors to address this upcoming epidemic. In 1997, Chinese authorities elaborated a National Plan of Action for Nutrition aimed at: (a) alleviating hunger and nutritional deficiencies by securing adequate food supplies and, at the same time, (b) preventing diet-related NCDs by improving the nutritional health status of the population. The Plan provides for a comprehensive and integrated set of policies and interventions that go beyond the health sector. With regard to nutrition, the Plan has developed a system of periodic surveys, issued guidelines for healthier diets, increased public awareness through media campaigns, retrained health workers and strengthened the overall capacity of the health-care system. The Plan also integrates diet-related NCDs interventions with other NCD prevention programmes. Efforts have also been made to promote physical activity among the general public and, through the Ministry of Education, among students. To address diet-related-NCDs from a larger perspective, the Plan includes policy changes in agriculture and processed food production. Research has led to the introduction of new kinds of vegetables in home gardens. The Ministries of Agriculture and Commerce have established price incentives and subsidies to increase the production and consumption of fruits, vegetables and soybean products. Some local-level pilot experiences have created larger demonstration effects.[b]

These measures have already achieved positive results. There is a greater awareness of healthier diets and lifestyles. Rural and urban vegetable production and consumption have increased. An increasing number of people are involved in physical activity. Some demonstration projects have reduced the prevalence of certain risk factors. While this Plan imposes severe multilevel capacity requirements, it is one of the first initiatives in the developing world to recognize that dealing with complex NCD conditions requires the adoption of integrated strategies involving multisectoral stakeholders.

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[a] Barry Popkin, Susan Horton and Soowon Kim, "The nutrition transition and prevention of diet-related chronic diseases in Asia and the Pacific", *Food and Nutrition Bulletin*, vol. 22, No. 4 (Tokyo, United Nations University, 2001).

[b] Fengying Zhai, Dawei Fu, Shufa Du, Keyou Ge, Chunming Chen and Barry M. Popkin, "What is China doing in policy-making to push back the negative aspects of the nutrition transition?", *Public Health Nutrition*, vol. 5, 2002, pp. 269-273.

57. The prevention of diet-related NCDs also requires multisectoral interventions that foster physical activity in transport and leisure. These interventions entail partnerships among numerous government agencies responsible for areas such as urban planning and management, transport and infrastructure, and labour and education, in order to ensure consistency with promoting health-related physical activity as part of everyday life. National and local regulations could be introduced to encourage mass transit and safe forms of public transport. Education institutions could encourage physical activity as part of their curriculums. Governments could ensure that adequate recreational facilities exist at the community level and that choices in food courts support healthy diets.

F. Creating partnerships for health promotion

58. Although the primary responsibility for policies and programmes lies with Governments, programme sustainability depends largely on the ability of Governments to involve other stakeholders at every stage. Public-private-civil society partnerships could pool resources and experiences to vitalize and sustain health promotion programmes.

59. The above-mentioned multisectoral approaches impose significant financial human technological and institutional capacity requirements and therefore could represent an important challenge for developing countries. The complementarities and synergies arising from partnerships are especially important for developing countries to leverage resources from multiple stakeholders, as a means of bridging the existing capacity gaps (box 3). As in any partnership, areas of action according to the responsibilities, mandates and resources of each actor need to be clearly delineated.

60. Private corporations in areas as diverse as tobacco and alcohol production, food processing, transport, pharmaceuticals, advertising, banking and insurance should play a significant role in NCD prevention and health promotion. Initiatives such as increasing the availability of food products with reduced salt, sugar and fat content or vehicles with enhanced security features are ways in which the private sector could play a positive role. However, it is crucial to ensure that health-enhancing choices are made affordable for low-income groups.

61. The private sector, in partnership with government and/or civil society, could assist in the implementation of government regulations. Companies producing consumer items, especially food, tobacco and alcohol, should provide consumers and government agencies with comprehensive and clear information on the composition of their products. Furthermore, employers should provide workers with options for health and safety in the workplace.

62. Civil society organizations could also be key players in health promotion. They can be instrumental in mobilizing communities to pressure Governments or the private sector to take action. NGOs also constitute important channels of communication for public awareness and education campaigns. Civil society organizations could be involved in the implementation and monitoring of prevention programmes.

63. There are several examples of integrated community-based NCD prevention initiatives in the ESCAP region. In addition to educational activities, these initiatives include the creation of NCD health posts at the neighbourhood level, the retraining of health-care personnel and healthy canteens. Demonstration projects in Bangladesh, India and Indonesia have succeeded in increasing the knowledge of risk factors and reducing their prevalence.[48]

Box 3. Non-communicable disease prevention and health promotion in Pakistan

Non-communicable diseases (NCD) and injuries account for over 47 per cent of all deaths in Pakistan. Risk factors such as smoking, obesity, hypertension and diabetes affect significant segments of the population. The 2004 launch of the National Action Plan for the Prevention and Control of Non-communicable Diseases and Health Promotion in Pakistan represents the first attempt to develop a plan for risk-factor prevention and health promotion within an integrated strategic framework.[a]

The National Action Plan combines NCD prevention among risk groups with health promotion among the general population. Overcoming traditional disease-specific approaches, the Plan integrates policies and actions at four levels: (a) integrating NCDs and injuries around common risk factors; (b) adopting multisectoral approaches, and integrates and harmonizes multilevel actions; (c) horizontally integrating NCD prevention within public health and social welfare systems; and (d) integrating behavioural and social research and reorienting health towards prevention.[b]

Beyond involving traditional actors, such as the Ministry of Health, the National Action Plan brings together stakeholders outside the health system. Through partnership with NGO and grass-roots health provider groups, the Ministry of Health has expanded its NCD prevention knowledge and capacity. The Plan also includes collaborative efforts with the Ministry of Education in a comprehensive school programme on health. While WHO support to Pakistan has traditionally been within the public health system, the Plan provides for direct allocations to civil society organizations directly involved in the implementation of the Plan.

The National Action Plan exemplifies the efforts of a developing country with limited NCD prevention capacity.

[a] Sania Nishtar, "Prevention of non-communicable diseases in Pakistan: an integrated partnership-based model", *Health Research Policy and Systems*, vol. 2, 2004, pp.2-7.

[b] Pakistan, Ministry of Health (2004), *National Action Plan for the prevention and control of non-communicable diseases and health promotion in Pakistan* (Islamabad, Government of Pakistan and WHO Pakistan Office, 2004).

64. The case of the Thai Health Promotion Foundation illustrates how revenue from punitive taxes on alcohol and tobacco could constitute an important means for government self-funding of health promotion programmes. Multistakeholder partnerships that pool resources beyond those available to Governments could also contribute to the financial and institutional sustainability of health promotion.

[48] WHO, *Integrated community-based prevention of major non-communicable diseases in SEAR* (New Delhi, WHO Regional Office for South-East Asia, 2003).

III. THE WAY FORWARD

65. The rising NCD trends attest to the critical need for urgent action by Governments in the ESCAP region to address these trends and their attendant social and economic costs. Within the region, there are practical examples of how Governments might proceed to take effective action. ESCAP and others within the United Nations system, especially WHO, have a key role to play in supporting ESCAP members and associate members. Joint programming by ESCAP and WHO would create inter-agency synergies to assist Governments in the region to respond more effective to emerging threats to health. This approach would be in line with the recommendations contained in the report of the Secretary-General entitled "In larger freedom: towards security, development and human rights for all" (A/59/2005). It would also strengthen coherence and coordination in the promotion of a "Healthy Asia-Pacific", through the implementation of the Regional Framework for Strategic Action: Promoting Health and Sustainable Development (E/ESCAP/1358) and the Bangkok Charter for Health Promotion in a Globalized World.[49]

66. The Committee is invited to endorse the ESCAP-WHO collaboration in developing a joint approach and technical support that Governments of the Asian and Pacific region may draw upon to develop their national responses.

IV. CONCLUSION

67. NCDs have overtaken communicable diseases as the primary causes of disability and mortality in the ESCAP region. There is overwhelming evidence of the increasing share of NCDs in the burden of disease for high-income as well as low-income nations. Moreover, the poor are increasingly, and in many instances disproportionately, affected. The prevalence of certain risk factors among the poor is higher than in more affluent groups. The course of NCDs is long drawn out, draining household resources. In most cases, NCD treatment involves significant out-of-pocket expenditures, further impoverishing households. A growing burden of NCDs would increasingly divert health sector resources from health-care services on which the poor depend. These trends are likely to undermine the achievement of the Millennium Development Goals and the overarching goal of eradicating poverty in general.

68. Preventive and health promotion strategies are more health- and cost-effective than curative approaches. It is crucial to promote healthy policies, settings and lifestyles to address the development determinants of NCDs through multisectoral partnerships and interventions that ensure health for all. Addressing risk factors and promoting health through primary health-care and low-cost interventions would strengthen, rather than compete with, health-care interventions aimed at achieving the health-related Millennium Development Goals.

69. ESCAP, in collaboration with WHO and other partners, would make available regional support for national responses to the emerging NCD pandemic.

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[49] The Charter was adopted at the Sixth Global Conference on Health Promotion, held in Bangkok from 7 to 11 August 2005. For the full text of the Charter, see World Health Organization, http://www.who.int/healthpromotion/conferences/6gchp/bangkok_charter/en/index.html, accessed on 10 August 2005.