Part One:

NONCOMMUNICABLE DISEASES – THE FACTS

Why Should NCDs be a Priority?

Most countries and areas in the Western Pacific Region have experienced profound change in recent years. There have been dramatic increases in life expectancy across the region (for example, the life expectancy in low and middle-income countries has increased by ten years during the two decades to 1998). At the same time greater numbers of people are moving from rural areas into cities. About 40 percent of people in the Western Pacific Region now live in urban areas. This rapid pace of urbanisation is expected to continue, and by 2015 half of all people in the Region will live in urban areas. The process of globalisation also impacts on the Western Pacific Region in a variety of ways. There has been increased industrialisation, growing mobility of capital and labour and increased trade in many products (including foodstuffs). All these factors impact on the lives of people in the Region – many people now work in different environments and locations, diets have changed, levels of physical activity have reduced, and access to alcohol and tobacco have increased. These and other factors impact on the health and wellbeing of people in the Region, and are common to developing countries throughout the world – developing countries are experiencing shifts in causes of death and disability from infectious diseases to noncommunicable diseases, as the chart below illustrates.

Figure 3: DALYs in Developing Countries, 1990-2020.

DALYs, by broad cause group 1990 - 2020 in developing countries (baseline scenario)

<table>
<thead>
<tr>
<th></th>
<th>1990 (%)</th>
<th>2020 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicable diseases, maternal and perinatal conditions and nutritional deficiencies</td>
<td>49</td>
<td>22</td>
</tr>
<tr>
<td>Injuries</td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td>Neuropsychiatric ds.</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>Noncommunicable conditions</td>
<td>27</td>
<td>43</td>
</tr>
</tbody>
</table>

DALY = Disability-Adjusted Life Year
Source: WHO, Evidence, Information and Policy, 2000

The World Health Report 2002 discusses how non-communicable disease can be reduced by ‘individual-based’ and ‘population’ approaches to risk reduction. Individual-based interventions focus on people who possess a particular combination of risk factors that make them at high probability of suffering ill-health from a certain health condition, or certain health conditions. This approach deals with a targeted section of the entire population, rather than applying health-improvement strategies to all people. Population approaches to risk reduction, on the other hand, affect everyone in a given population, and ideally result in a small reduction in risk factors across everyone in that population. The WHO suggests that a combination of these approaches is the most cost-effective means of improving people’s
Acting on Non-Communicable Diseases: An Advocacy Guide for the Western Pacific

health. Most advocacy approaches are concerned with the ‘population’ approach to risk reduction, although these should also be combined with ‘individual-based’ interventions to produce the most benefit to society.

Noncommunicable diseases (NCDs) are becoming the major cause of death in the Region. In the past, NCDs have been seen as an issue for developed countries, but they now pose a significant and growing threat to less developed countries as well. World Health Organization data tell us that in the Western Pacific Region:

- Cardiovascular disease (CVD) is one of the leading causes of death in 32 of the 37 countries and areas. It accounts for three million deaths in the Region each year;
- Cancer is one of the three leading causes of death in 26 countries and areas and it is estimated that about 3.5 million cancer cases occur each year; and
- It is estimated that 30 million people in the Region have diabetes and it is projected that there will be at least 55 million adults with diabetes in the Region by 2025.2

These NCDs share common risk factors. For example, tobacco use is one of the major reasons for the increase in NCDs.3 With smoking rates continuing to increase, tobacco use is one of the largest public health threats to the Western Pacific Region. The human cost of tobacco-related mortality can be seen below.

*Figure 4: Tobacco-related Mortality (‘000) by Region (WHO 2002)*

When the burden of disease in Western Pacific Region countries is measured (in DALYs), tobacco also emerges as one of the most serious health risk factors. In countries with very low rates of adult and child mortality (one of the ways the WHO groups countries in terms of health), tobacco is responsible for the most DALYs among men (994,000) and ranks second among women (325,000, behind high blood pressure). In countries with low rates of adult and child mortality, tobacco is second only to alcohol among men (8,313,000), but is only the 12th ranked cause of DALYs among women (1,296,000).
Globally, every year, an estimated four million people die from smoking-related illnesses. This translates to close to 11,000 deaths per day, 2000 of which are in China. One in four of the tobacco-related deaths occurs in the Western Pacific Region.

Is Prevention Possible for NCDs?

Prevention of NCDs is possible. Studies of NCDs suggest a multi-factorial pattern of causation, that is, many things contribute to the incidence of non-communicable diseases, and many of these are difficult to ‘pin down’. Although there is disagreement about the full picture of NCD causation, it is generally accepted that behavioural risk factors (such as tobacco smoking, lack of physical activity, and unbalanced nutrition) contribute to a substantial portion of the disease burden. Traditionally, these risk factors have been regarded as matters for individual to deal with, usually with some encouragement from health personnel and health promotion programs. However, many people working in the health sector now recognise that peoples’ exposures to risk are also affected by environmental and supply side factors, such as price signals, advertising, food supply, and opportunities for regular physical activity. While it remains an important goal of the health sector to encourage people to adopt healthy life-styles directly (through behaviour-change health campaigns, for example), it is also important to alter the environment in which people live in order to make it easier for them to adopt healthy lifestyles. This is the goal of advocacy.

Case Study 1: Life Style Change and the Prevention of Diabetes Type 2

Recently, studies conducted in Finland and the United States have shown that encouraging people to change their life-styles is a very effective way to prevent diabetes, and to control complications from this disease. In one of these studies, people with impaired glucose tolerance (and thus at higher risk of developing full diabetes) were recruited by researchers and randomly allocated into three groups: one group received placebo treatment; another was given a drug (metformin, thought to prevent or delay the onset of diabetes); and the last group participated in a lifestyle-modification program, with goals of 7% weight loss and at least 150 minutes of physical activity a week.

Results showed that the incidence of diabetes was reduced by 58% in the lifestyle group, and by 31% in the metformin (drug) group. These results indicate that the incidence of diabetes may be substantially reduced through public health programs – not just by directly encouraging people to adopt healthier lifestyles, but also by making it easier for them to adopt healthy lifestyles. Advocates for diabetes prevention might focus on the latter of these, and attempt to change opinions and policies so that it is easier for people to change their lifestyles.

New research also suggests that a number of social factors contribute to the incidence of non-communicable disease. These are particularly evident when socioeconomic differences in disease distribution are examined, and include social support, sense of control, education, employment status, relative income, and workplace stress. There is also evidence that NCDs arise due to cumulative exposure to risk factors across a person’s life span, starting even in the womb. This means that the health of people is not just affected by decisions and policies enacted by the health sector – the health of people is also affected by decisions and policies from a wide range of organisations and agencies. As such, social and economic policies that support the aims and goals of the health sector are crucial to health improvement.
**What are the Costs?**

The cost of NCDs is enormous. Most obvious is the human cost in pain, disability and premature death. Less obvious are economic costs, which are both direct (the cost of caring for a sick person) and indirect (the loss of productivity when a person is sick, becomes disabled or dies prematurely).

In simple ‘dollar terms’ NCDs absorb increasing proportions of health budgets, for example: 8

- In **Tonga** NCDs contribute to more than 50 percent of all deaths and up to 20 percent of the total health care costs
- In **Fiji** NCDs account for between 22 – 54 percent of all in-patient costs; 42 – 50 percent of all pharmaceutical costs and 19 – 40 percent of all government expenditure on health
- Conservative estimates of the cost of NCDs in **Samoa** suggest that they account for at least 25 percent of total government expenditure on health
- In **China** the estimated direct cost of care for people with diabetes in 1996 was US$3.5 billion
- In **Japan**, the annual direct cost to the health care sector of diabetes is about US$16.94 billion (six percent of the total health budget)
- In **New Zealand**, five percent of the health budget is spent on direct care and a further five percent on diabetes related disability allowances
- In **Australia**, at least US$720 million was spent on diabetes health care in 1995 compared with US$550 million in 1990

**What are the Benefits of Acting?**

It may seem obvious, especially to those in the health sector, that improving health and reducing the incidence of disease has an inherent value in human terms – people are better off when they are healthy than when they are sick. Policies and programs to prevent NCDs also make good economic sense. For example:

- People who smoke incur an additional 31 percent (men) and 24 percent (women) in medical care costs over those who have never smoked
- A reduction in dietary fat intake of one – three percent would reduce the incidence of coronary heart disease by 25 percent, saving US$4.1-12.7 billion in medical costs and productivity losses over ten years
- Spending $1 on a nutritional program for women in poverty saved $2.91 in medical costs by reducing the number of low birth-weight babies born9
- If an additional 10 percent of Australians had physically active lifestyles the risk of CVD would be reduced by five percent – a potential saving of A$103.75 million10
- In the East Asia and Pacific region a price increase of 10 percent would reduce the number of smokers by 16 million and the number of deaths by four million11
Case Study 2:  
The Economic Benefit of Public Health Programs in Australia.\textsuperscript{12}

In Australia, the Department of Health and Ageing produced a report that attempted to estimate the economic benefit, since 1970, of five public health programs, including: programs to reduce tobacco consumption; programs to reduce coronary disease; programs to reduce HIV/AIDS; measles and Hib immunisation programs; and road safety programs and road trauma. For each program, they estimated:

\begin{itemize}
  \item[a)] the cost of programs
  \item[b)] the estimated reduction in disease cases attributable to the disease
  \item[c)] the benefits of disease reduction in terms of increased longevity (life), improved quality of life, and reduced health care expenditures
  \item[d)] the total return to society of investment in public health activities
  \item[e)] savings to government
\end{itemize}

The authors found that substantial gains, in terms of disease (or injury) reduction, had been achieved across all of these conditions. In 1998, an estimated 17,400 premature deaths were averted because of reduced tobacco consumption (including 6900 fewer deaths from coronary heart disease, 4000 from lung cancer, 3600 from bronchitis and chronic obstructive pulmonary disease (COPD) and 2900 from strokes and other cancers).

The economic benefit of these public health programs was also substantial. The benefit in 1998 alone, due to reduced tobacco consumption since 1970, is $12.3 billion. This includes longevity gains valued at $9.6 billion, improved health status gains of $2.2 billion, and lower health care costs of $0.5 billion.

What are the Priorities for NCD Prevention?

Priority for action should be considered in a four-step process. They are outlined in general terms below, although the specifics may vary between countries, peoples, and communities.

1. \textbf{What are the health conditions?}

   NCDs include a myriad of health conditions. It is impossible to address them all, so areas of most concern need to be identified – that is those that contribute most heavily to the burden of disease.

2. \textbf{What are the risk factors associated with the health conditions?}

   What are the key risk (and protective) factors clearly associated with identified health conditions?

3. \textbf{Which of these risk factors can be changed?}

   Not all of the factors associated with the health conditions highlighted can be modified. Those which can need to be identified.

4. \textbf{What are the best activities to invest in?}

   Once the factors that can be changed have been identified, an approach to those factors needs to be decided upon.
The Health Conditions of Concern

There are many NCDs, but a number of them share similar risk factors. These ‘core’ risk factors should be the focus of advocacy campaigns, at least initially, because reducing core risk factors will have a positive effect on many health conditions. The major NCDs and key risk factors are:

<table>
<thead>
<tr>
<th>Major NCD conditions</th>
<th>Risk factors&lt;sup&gt;13&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular disease (CVD) (primarily coronary heart disease, stroke, rheumatic heart disease, hypertension)</td>
<td>Smoking, physical inactivity, obesity, high blood pressure, elevated blood cholesterol, environmental tobacco smoke, alcohol consumption, age, family history, diabetes (for stroke).</td>
</tr>
<tr>
<td>Diabetes (Type 2/non-insulin dependent)</td>
<td>Physical inactivity, obesity, ethnicity, age.</td>
</tr>
<tr>
<td>Lung cancer</td>
<td>Smoking, occupational exposure, dietary factors, environmental tobacco smoke.</td>
</tr>
<tr>
<td>Other cancers</td>
<td>Smoking, unhealthy diets, excess alcohol consumption, family history, genetic make-up, environmental and occupational hazards, lack of screening and early detection.</td>
</tr>
<tr>
<td>Chronic Lung disease</td>
<td>Smoking, environmental hazards, occupational exposures.</td>
</tr>
<tr>
<td>Mental health problems</td>
<td>Biological factors, psychosocial issues, genetic factors, illicit drugs, excess alcohol consumption.</td>
</tr>
</tbody>
</table>

**CORE HEALTH CONDITIONS TO BE TARGETED INCLUDE:**

- **CORONARY HEART DISEASE**
- **STROKE**
- **HYPERTENSION**
- **DIABETES**

**Associated health conditions** are those that share some of the core risk factors, but are also affected by other risk factors. These conditions benefit from generic NCD prevention campaigns, but also require specific actions. Health conditions that are associated with core risk factors, but require a broader approach to deal with, include:

- Cancers
- Chronic Lung Disease
- Mental health problems
The Common Risk Factors: A Focus for Action

COMMON RISK FACTORS UNDERLIE THE CORE HEALTH CONDITIONS. THESE RISK FACTORS SHOULD BE THE FOCUS FOR ACTION. THEY ARE:15

- SMOKING
- PHYSICAL INACTIVITY
- UNHEALTHY DIETS
- OBESITY
- ALCOHOL
- LACK OF SCREENING FOR EARLY DETECTION

Common Underlying Factors

Health is more than simply an outcome of biology and individual behaviour patterns. Research shows that biology and individual behaviour patterns are affected by social factors and social characteristics of population sub-groups. Ten interrelated aspects of the social determinants of health include:16

- people’s social and economic circumstances - people higher up the social ladder have better health than those at the middle, who in turn have better health than those at the bottom;
- stress - caused by social and psychological circumstances;
- a person’s early life – people who have slow growth and lack emotional support in childhood are more likely to suffer ill-health when they are adults;
- whether people feel excluded or isolated from the wider community;
- the nature of a person’s work – stress at work increases the risk of disease;
- unemployment puts health at risk – these ill effects also occur if people feel their job is at risk;
- how much support people get from their family and friends;
- addiction to harmful substances such as alcohol, drugs and tobacco;
- the availability of good food; and
- a good public transport system, and policies that reduce driving and encourage walking and cycling.

The connection between behavioural risk factors and the social and environmental determinants of NCDs are illustrated by the following key inter-relationships:

1. Poverty, Reduced Knowledge and Awareness, and NCDs: socioeconomic status, literacy and access to health services are inter-related factors that affect the prevalence of NCDs. For example, people with low incomes may access health services less often (due to cost factors). In addition, low socioeconomic status individuals and communities tend to have low levels of education and literacy, which affects their ability to access health services and health information. In these communities awareness of NCD and of NCD risk factors among the general public, decision-makers, and even health professionals is often low. NCD advocacy is largely concerned with raising awareness about NCD risk factors, and advocates in less developed countries should not assume that decision makers and health professionals are aware of these. It is important to demonstrate the social and economic impact of NCDs to your target audience and to highlight the link between poverty and illness.
2. **Life-style related risk factors and environmental determinants**: Globalisation, industrialisation and urbanisation have had a significant impact on the lifestyles of many people in the Western Pacific Region. For example, global free trade has secured multinational tobacco companies with access to developing countries, so that while cigarette consumption has been declining in developed countries, it has actually been increasing in developing countries. There is also increased availability of, and demand for, imported foods, which are generally less healthy than traditional foods, and increased access to and consumption of alcohol. In Pacific Island countries rapid urbanisation and the transition to cash (or wage-based) economies have changed traditional occupational patterns and reduced levels of physical activity. These factors make some populations particularly vulnerable to NCDs.

The relationship between life-style and environmental factors is complex. Exposure to risk occurs over time and is cumulative. The *life-course approach* is needed to understand these relationships and to take into account the complex ways in which biological risk interacts with economic, social and psychological factors in the development of chronic disease. The following diagram illustrates the variety of ways in which these interactions occur, using CVD as an example.

**Figure 5: Factors Affecting CVD (Cardiovascular Disease).**

What Can Be Done?

NCDs are not preventable simply through one-off efforts, such as promotional campaigns or screening programs. Lifestyles and life chances are complex, and depend on the interaction of many different factors over time. It is easier to develop positive environments and habits early and to maintain them than it is to change large numbers of people and communities once the problems occur. NCD prevention requires strategies that are directed at different levels, different target groups, and over time, as both the *Ottawa Charter for Health Promotion* and the *Jakarta Declaration* indicate.
### Areas for Investment and Action

Needs may vary in localities, but there are a group of action areas that are critical to NCD prevention in all places. In Australia’s Northern Territory work was done to identify priority interventions for chronic disease control because of the high burden of disease for disadvantaged populations and the high cost of medical care carried by the government and community. This work suggested some of promising areas for investment and action in a comprehensive approach to the prevention and control of chronic disease.

<table>
<thead>
<tr>
<th>Activity domain</th>
<th>Priority Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maternal health</strong></td>
<td>➢ Improving infant birthweight</td>
</tr>
<tr>
<td><strong>Promotion of child growth</strong></td>
<td>➢ Breastfeeding</td>
</tr>
<tr>
<td></td>
<td>➢ Preventing childhood malnutrition</td>
</tr>
<tr>
<td></td>
<td>➢ Decreasing childhood infections through better environmental health conditions</td>
</tr>
<tr>
<td></td>
<td>➢ Childhood Immunisation</td>
</tr>
<tr>
<td><strong>Underlying determinants of health</strong></td>
<td>➢ Maternal and childhood education</td>
</tr>
<tr>
<td></td>
<td>➢ Alleviate poverty</td>
</tr>
<tr>
<td></td>
<td>➢ Promote ‘sense of control’ and mental well-being</td>
</tr>
<tr>
<td><strong>Lifestyle modification</strong></td>
<td>➢ Smoking cessation and prevention programs</td>
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<tr>
<td></td>
<td>➢ Brief intervention for hazardous alcohol use</td>
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<tr>
<td></td>
<td>➢ Nutrition, weight loss and physical activity programs in high risk populations</td>
</tr>
<tr>
<td><strong>Early detection and early treatment</strong></td>
<td>➢ Screening</td>
</tr>
<tr>
<td></td>
<td>➢ Adult immunisation</td>
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<tr>
<td></td>
<td>➢ Aggressive blood pressure lowering to prevent progression of renal disease</td>
</tr>
<tr>
<td><strong>Best practice management</strong></td>
<td>➢ Prevention of complication of diabetes</td>
</tr>
<tr>
<td></td>
<td>➢ Aggressive management of heart attacks and known cardiovascular disease</td>
</tr>
<tr>
<td></td>
<td>➢ Rehabilitation and outreach programs (cardiac, respiratory, renal)</td>
</tr>
<tr>
<td><strong>Secondary Prevention</strong></td>
<td>➢ Regular monitoring of disease</td>
</tr>
<tr>
<td></td>
<td>➢ Support, education and advice regarding risk factors (nutrition, tobacco, physical activity)</td>
</tr>
</tbody>
</table>
**Issues and Challenges**

There are a number of challenges involved in NCD advocacy, particularly in less developed countries in the Region. It is vital to create an understanding, both among the general population and policy-makers, that NCD prevention is important. A number of countries in the Region still have high rates of communicable disease, so that they suffer a ‘double burden’ of disease (both communicable and non-communicable disease). Often, because health resources are limited, the immediate problems presented by infectious diseases are prioritised over the (comparatively) long-term problems of non-communicable disease. Policy makers in these countries need to be convinced that:

- NCDs are a public health issue – they are a not solely a problem for individuals;
- NCDs are a problem for less developed countries as well as for wealthy countries;
- NCDs are not an inescapable result of aging, they have a significant impact on the health, welfare and productivity of people in their middle years; and
- NCDs cost – in terms of productivity, medical care and pharmaceuticals, and lost quality of life.

Despite awareness that many important factors for preventing NCDs lie outside of health services, the ability of health sector personnel to bring about changes in the broader social, economic, cultural, and political environment have been limited. As custodians of community health, and as catalysts for change, health sector personnel need tools and skills for advocacy and partnership with elected leaders, policy-makers (in diverse sectors as treasury, agriculture, recreation, and education), media, industry interests, and civil society.

**Some examples of population interventions for CVD and smoking**

Cardiovascular disease (CVD) accounts for a substantial burden of disease in all countries, even those that are poor, so that cost-effectiveness is a crucial consideration for anyone attempting to reduce incidence of CVD. Comprehensive approaches to the reduction of CVD take into account a number of risk factors: blood pressure, cholesterol, smoking, body mass index (BMI), low levels of physical activity, diet and diabetes, for example. Advocates that focus on reducing the incidence of CVD might adopt the following population-based issues, and work with people such as politicians, law-makers, and industry representatives to have them implemented in their respective countries.
<table>
<thead>
<tr>
<th>CVD RISK FACTOR</th>
<th>ADVOCACY INTERVENTION EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Blood pressure</strong></td>
<td>Encourage cooperation between government and food industries to adopt appropriate labelling about salt content on products, and begin to reduce the amount of salt added to commonly consumed products, by establishing voluntary codes of conduct, for example. Advocate for legislative action to ensure that labelling and salt reduction in commonly consumed products are adopted by food industries. Costs are generally higher than voluntary codes of conduct, because mechanisms for quality control and enforcement are required. However, the reduction in salt intake is often larger than under voluntary codes of conduct.</td>
</tr>
<tr>
<td><strong>Cholesterol</strong></td>
<td>Advocacy to media organisations and governments (among others) for population-wide health education through the mass media (such as broadcast and print media). According to the WHO, this approach can lead to a 2% reduction in cholesterol levels across an entire population (WHO 2002:116).</td>
</tr>
<tr>
<td><strong>Low fruit and vegetable intake</strong></td>
<td>Short, intensive mass media advertising and community-based consumer education through health facilities, food retailers and food service providers. Advocacy is required to encourage cooperation from the food industry, the mass media, and other stakeholders.</td>
</tr>
<tr>
<td><strong>Smoking (tobacco)</strong></td>
<td>Advocacy to government tax-collection ministers, ministries and agencies for tobacco product tax increases. Some studies suggest that for every 10% rise in real price of tobacco due to tax increases, tobacco consumption is reduced by at least 2%, and as much as 10% (WHO 2002:124). Advocacy to government to introduce ‘clean air’ laws in public places, so that the risk of passive smoking on non-smokers is reduced. These kind of legislative measures have also been shown to reduce tobacco consumption by smokers. Advocacy to government to introduce comprehensive bans on advertising on tobacco products. This should include media advertising, but also the sponsorship of public events, such as sports, by tobacco companies. Consultation will often be required with other stakeholders who stand to lose revenue if tobacco advertising is banned. Encourage the dissemination of health information through warning labels, counter-advertising, and consumer information packages. Advocacy will focus on encouraging cooperation between government, mass media, and health sector agencies.</td>
</tr>
</tbody>
</table>

Source: WHO (2002)  

Although the focus of this table is on CVD risk factors, many of these are also risk factors for other health conditions – tobacco, for example, is a major cause of lung cancer – so that often the benefits of advocacy will not be restricted to particular issues. Obviously, a large number of these advocacy initiatives rely on the support of government, through policy and/or legislation, in order to be successful. However, advocates should also note that they may have to spend some time encouraging other stakeholders to cooperate with their efforts, so that when laws are made by government, they are also obeyed by the people.