SURVEILLANCE OF MAJOR NONCOMMUNICABLE DISEASES IN THE SOUTHEAST ASIA REGION

Report of an Intercountry Consultation
WHO/SEARO, New Delhi, 2-4 August 2000

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# CONTENTS

1. **INTRODUCTION** ......................................................................................................................... 1
2. **BACKGROUND** .......................................................................................................................... 1
3. **OBJECTIVES** ............................................................................................................................... 3
4. **SCOPE AND METHODS OF NCD DATA COLLECTION** ............................................................. 3
5. **NCD SURVEILLANCE IN SEAR - COUNTRY REPORTS** ........................................................ 3
   5.1 Bangladesh ................................................................................................................................. 4
   5.2 Bhutan ......................................................................................................................................... 5
   5.3 DPR Korea ................................................................................................................................. 6
   5.4 India ........................................................................................................................................... 6
   5.5 Indonesia .................................................................................................................................. 7
   5.6 Myanmar ................................................................................................................................... 9
   5.7 Nepal ......................................................................................................................................... 9
   5.8 Sri Lanka .................................................................................................................................. 10
   5.9 Thailand ................................................................................................................................... 11
6. **COUNTRY REPORTS ON DIABETES MELLITUS** .................................................................... 11
7. **REPORTED APPROACHES TO NCD SURVEILLANCE IN SEAR** ....................................... 13
8. **MAJOR AREAS COVERED BY THE TECHNICAL DISCUSSION** ........................................... 16
   8.1 Information Gaps ....................................................................................................................... 16
   8.2 Surveillance ................................................................................................................................. 17
   8.3 Risk Factors ............................................................................................................................... 19
   8.4 Classification .............................................................................................................................. 19
   8.5 Research .................................................................................................................................... 20
   8.6 Management .............................................................................................................................. 21
9. **CONCLUSIONS** ......................................................................................................................... 22
10. **RECOMMENDATIONS** ........................................................................................................... 23
    10.1 Programme Development ........................................................................................................... 23
    10.2 Regional Profile ....................................................................................................................... 23
10.3 Surveillance System ..................................................................................23
10.4 Intervention ..............................................................................................24
10.5 Other Recommendations .........................................................................24

Annexes
1. List of Participants ..................................................................................25
2. Text of Address by Dr Uton Muchtar Rafei, Regional Director
   WHO South-East Asia Region ......................................................................27
3. Programme ..................................................................................................30
4. List of Documents .....................................................................................32
1. **INTRODUCTION**

The epidemiological transition in most of the SEAR countries has reached a stage when the burden of noncommunicable diseases (NCDs) outweighs that of communicable diseases. Scarcity and poor quality of data is regarded as one of the major hindrances in strengthening cost-effective prevention and control of major NCDs in the Region. Therefore, development of easy, inexpensive, feasible and sustainable systems of surveillance of major NCDs and their risk factors should be recognized as one of the priorities of WHO in the SEA Region.

Through concerted intercountry efforts available basic epidemiological data on major NCDs were collected in the Region in early 2000. Experts from eight Member Countries of the South-East Asia Region (SEAR) participated in the Intercountry Consultation of Principal Investigators on Surveillance of Major Noncommunicable Diseases held in WHO/SEARO, New Delhi, from 2 to 4 August 2000 (see Annex 1 for list of participants). The purpose of this consultation was to: (a) review and verify the data collected; (b) provide guidelines on development of a regional profile of major NCDs in SEAR; and (c) suggest measures to develop an integrated surveillance system for major NCDs and their risk factors.

The consultation was inaugurated by Dr Uton Muchtar Rafei, Regional Director, WHO South-East Asia Regional Office (WHO/SEARO), New Delhi (see Annex 2 for full text of address).

This has been a landmark meeting in which experts from most of the SEAR Member Countries discussed emerging issues related to the surveillance of noncommunicable diseases. Substantial progress has been made in terms of highlighting the importance of NCD issues in the Region. It was noted that there is a reasonable amount of data available on major NCDs. Issues related to surveillance, prevention and control of NCDs and mechanisms to promote new initiatives in the Region were discussed (see Annex 3 for the programme). The consultation adopted a number of important recommendations highlighting the priority areas for future activities at national and intercountry levels.

2. **BACKGROUND**

Noncommunicable diseases (NCDs) are known to be increasing at an alarming pace in SEAR Member Countries. However, systematic data on the...
problem in its various dimensions is not clearly known. While countries have made some progress in documenting information in the area of communicable diseases, similar knowledge of NCDs is lacking. Most of the present limited knowledge is based on attempts by research institutions and also from selected community-based surveys. At present, integrated NCD surveillance does not exist in any of the countries.

Despite these limitations, it is accepted beyond doubt that NCDs are increasing from year to year in terms of morbidity, mortality, disability, socioeconomic losses and increasing health resource utilization in all countries. Prioritized NCDs in the Region are cardiovascular disorders, cancer, diabetes mellitus and conditions arising out of injuries. Within these larger groups, it is noticed that ischaemic heart disease and cerebrovascular disease are two major conditions. Cancer of lung and oropharynx among men and breast and cervical cancer among women are already major public health problems. Type 2 diabetes mellitus is also more frequently prevalent and a major concern in all countries of the Region. The growing burden of injuries, road accidents, suicides and violence is unrecognized but contributes considerably to morbidity in the Region.

An appropriate, cost-effective, culture-specific methodology for obtaining basic information has still not been clearly established in SEAR Member Countries. The feasibility of strengthening existing national surveillance systems with an additional NCD component needs to be explored. The Global Strategy on Prevention and Control of Noncommunicable Diseases recently adopted by WHO creates a comprehensive framework for development of cost-effective and evidence-based activities addressing NCD priorities including surveillance with focus on developing countries.

There is growing evidence that NCDs like cardiovascular diseases, cancer, diabetes mellitus, and conditions caused by injuries are on the increase and place a serious burden on entire economies and particularly on health systems of SEAR Member Countries. Current and anticipated socioeconomic consequences of growing mortality, morbidity and disability from this group of disorders call for decisive and concerted action in order to minimize its anticipated developmental impact in the Region. WHO has recently adopted the Global Strategy on Prevention and Control of Noncommunicable Diseases. Prompt and effective implementation of the Strategy poses a challenge and a great opportunity for SEAR Member Countries.
3. OBJECTIVES

The objectives of the Consultation were:

(1) To review reports submitted by principal investigators on surveillance of major NCDs and on baseline information on diabetes mellitus from nine SEAR Member Countries;
(2) To identify strengths and weaknesses of the data collection process for NCDs and diabetes in SEAR Member Countries;
(3) To verify data on major NCDs in SEAR;
(4) To provide guidelines on the development of a regional profile of major NCDs in SEAR, and
(5) To suggest measures to develop/improve an integrated surveillance system for major NCDs and their risk factors in SEAR countries.

4. SCOPE AND METHODS OF NCD DATA COLLECTION

In September 1999, using intercountry budget, WHO/SEARO initiated a study on surveillance of major NCDs in the Region. Epidemiological data available on major NCDs (cardiovascular diseases, cancer and two locally important diseases) were collected by the Principal Investigators (PIs) in nine Member Countries – Bangladesh, Bhutan, DPR Korea, India, Indonesia, Myanmar, Nepal, Sri Lanka and Thailand and submitted to the Regional Office.

Through a separate study, basic epidemiological information on diabetes mellitus was collected from nine SEAR Member Countries – Bangladesh, Bhutan, DPR Korea, India, Indonesia, Maldives, Myanmar, Sri Lanka and Thailand.

All the 18 reports were reviewed in SEARO and technical comments sent to respective Member Countries. Revised reports and/or clarifications were obtained from all countries with the exception of DPR Korea and Maldives. These country reports were presented to the Consultation as background information material.

5. NCD SURVEILLANCE IN SEAR - COUNTRY REPORTS

The consultation reviewed country reports on NCD surveillance from Bangladesh, Bhutan, DPR Korea, India, Indonesia, Myanmar, Nepal, Sri Lanka
and Thailand. These reports are summarized below with a focus on the status of development of NCD surveillance system and the process of data collection in the Member Countries. The essential information on NCD burden reported for 1998 is also briefly outlined. The compiled and analyzed epidemiological data on major NCDs as reported by principal investigators from the above nine SEAR countries will be used for the development of a Regional NCD Profile (see the List of Documents at Annex 4). Major NCDs covered by country reports are listed in Table 1.

**Table 1. Major NCDs Reported by Principal Investigators**

<table>
<thead>
<tr>
<th>Country</th>
<th>Major NCDs Reported by Principal Investigator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>CVD*, Cancer, Diabetes mellitus, Road traffic-related Injuries</td>
</tr>
<tr>
<td>Bhutan</td>
<td>Cancer, CVD, Neuropsychiatric disorders, COPD**, Diabetes Mellitus, Injuries, Cirrhosis of the Liver</td>
</tr>
<tr>
<td>DPR Korea</td>
<td>Cancer, CVD, Diabetes mellitus</td>
</tr>
<tr>
<td>India</td>
<td>Cancer, Respiratory Diseases, Diabetes mellitus, Injuries, Substance Abuse, CVD</td>
</tr>
<tr>
<td>Indonesia</td>
<td>CVD, Cancer, Diabetes mellitus, Neuropsychiatric disorders, COPD, Cataract</td>
</tr>
<tr>
<td>Myanmar</td>
<td>Cancer, CVD, Respiratory diseases, Diabetes mellitus, Neuropsychiatric Disorders, Road traffic-related Accidents, Snake bites</td>
</tr>
<tr>
<td>Nepal</td>
<td>Cancer, CVD, Neuropsychiatric disorders, Diabetes mellitus, Hypertension</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>CVD, Cancer, Mental Illness, Diabetes mellitus, Injuries, Poisoning</td>
</tr>
<tr>
<td>Thailand</td>
<td>Cancer, CVD, Diseases of the nervous system, Diabetes mellitus, Road traffic-related injuries</td>
</tr>
</tbody>
</table>

* CVD = Cardiovascular Diseases.
** COPD = Chronic Obstructive Pulmonary Disease.

### 5.1 Bangladesh

Population-based NCD registries are non-existent in Bangladesh. The study was based on collection of aggregated data from eight specialized hospitals in Dhaka, 11 out of 59 district hospitals and 112 out of 402 county health centers. Apart from three specialized hospitals in Dhaka, none of the other hospitals has a proper recording and reporting system. The obstacles in
recording units include lack standardized format of medical records and table reports, non-availability of patient register books, poor quality and inadequate storing of medical records, missing death certificates, lack of special units and computer facilities for data analysis, inadequate skills of staff, and lack of quality control.

In addition, for the purpose of reporting, aggregate data based on national routine reporting system were collected from the Directorate-General of Health Services. Several incidental small community surveys and hospital studies were consulted. The data on traffic accidents came from police control room.

It is very difficult to estimate the incidence and prevalence rates of NCDs based on existing recording or reporting system. This is due to inadequate detection, under-reporting, and under-registration. According to the Directorate-General of Health Services 1997 data, NCDs are not regarded as the most common diseases. Still they contributed to a significant share of reported morbidity and mortality. The proportion of injuries, poisoning, hypertension, diabetes mellitus and mental disorders was reported to be 4.4%, 0.5%, 0.5%, 0.1% and 0.1% of reported morbidity respectively. According to the same source at least 25% of the total number of deaths in primary and secondary care hospitals in Bangladesh are caused by NCDs.

5.2 Bhutan

The morbidity estimates are based on the Annual Health Bulletin 1998, published by the Health Information Unit. This output of the national reporting system was supplemented by aggregate data on major NCDs collected from district medical officers and one referral hospital. The above method was applied as detailed information on cause-specific morbidity of major NCDs is not available in the bulletin. ICD-10 will soon be incorporated into the morbidity reporting system in basic health units and hospitals.

There is no regular system of compiling mortality data up to the central level. The aggregated data based on indoor and outdoor death certificates were collected from top referral hospitals and district health officers. The cause-specific mortality could be derived from indoor registers only. The total number of 543 deaths analyzed constitutes less than 25% of the total number of deaths registered in Bhutan. This indicates that the majority of deaths occurred outside hospitals. A new death certificate form requiring more detail information has been introduced since 2000.
The study reveals a number of problems related to correctness and completeness of data, lack of standardized reporting forms and regulations on notification of NCDs, under-recording and under-reporting due to lack of specialized services, and unavailability of registry. It was noted that albeit the proportion of morbidity due to NCDs is not as high as that of communicable diseases, NCDs in fact contribute to a major bulk of mortality. Among the 10 leading causes of morbidity, the proportion and rank of injuries and diseases of circulatory system were 3.7% and sixth, and 1% and tenth respectively. Conversely, NCDs and injuries contributed to 36.2% and 7.6%, while communicable diseases accounted for 32.2% of registered deaths.

5.3 DPR Korea

A household examination survey was conducted by the Institute of Public Health Administration in two districts of Pyongyang and some rural counties. The results of the survey provide information on major NCDs at the primary health care level. Data from higher levels of health care were drawn from available health statistics.

The reported morbidity (per 100,000) was 134.7 for cancer, 179.2 for cardiovascular diseases and 69.6 for diabetes mellitus. Corresponding mortality rates were 43.9 for cancer, 45.3 for cardiovascular diseases and 1.5 for diabetes. The Principal Investigator did not attend the consultation. Clarification of the reported data was requested which is still awaited.

5.4 India

The estimates are based on studies (i.e. vital and NCD registries, community-based studies, periodic and incidental national, multi-centre and local surveys, incidental multi-country surveys, reporting systems, and meta-analysis studies, etc) carried out in India since 1980. Each paper was critically examined for its representativeness to general population, measurement errors, and other biases. The number of cases/deaths in each age-specific group was calculated by multiplying the estimated population in the age group by calculated cause specific morbidity and mortality rates for that group separately for rural/urban and male/female. For the studies, which did not present data by age group, the summary estimate was assumed to be spread across the ages as reported by other studies that provided age-specific data. Studies with higher sample were given higher weight. The estimated number of cases of cancer and injuries reflect the incident cases, whereas for the other diseases prevalent cases were shown.
NCDs significantly contribute to total morbidity and mortality in India. The estimated prevalence of some NCDs is 2.8% for heart diseases, 6.6% for respiratory diseases, and 11.3% for substance abuse. NCDs contribute to about a quarter of all deaths. The respective contribution of cancers is 3.4%, heart diseases - 6.8%, respiratory diseases - 6.7% and injuries 8.7%. A number of studies reported on major NCD risk factors. Prevalence of hypertension varied from 4.5% to 31%, obesity (BMI>27) from 5.5% to 16.6%, tobacco use from 20.8% to 79.9% in males and 1% to 29.0% in females, and sedentary lifestyle was reported in 49.6% up to 65.4% in urban and 14.1% to 33.6% in rural males.

Though there is legislation on birth and death registration, the system is incomplete, inaccurate and unreliable. The ascertainment of cause of death is very poor in terms of coverage and quality. In rural areas, it is entirely done by lay reporting and the classification of causes is by system or syndromes. Only 15% of deaths have been medically certified in India in 1988, most of them in urban areas.

The survey of the causes of deaths initiated by the Office of the Registrar-General, is a pilot study that collects death statistics at PHC level. The scheme is in operation in about 1000 PHCs selected for this purpose.

There is no specific system of surveillance of NCDs in India. The only exception is a network of population and hospital-based cancer registries. The registries in Delhi, Mumbai, Chennai, Bangalore, and Bhopal cover 12.8% of urban population. There is also one rural cancer registry in Barshi. The cancer registry system covers 3.3% of the total Indian population. The proportion of pathological confirmation was 70–85%.

The National Crime Records Bureau (NCRB), Ministry of Home Affairs and Ministry of Surface Transport provide mortality data on road traffic accidents, suicides, homicides, and other accidents. While recording of road traffic-accident related deaths is good, it is estimated that only 25% of non-road traffic deaths are recorded by government offices.

5.5 Indonesia

A number of NCD surveillance-related activities such as periodic community surveys, routine recording system, routine reporting system, and community laboratories are being implemented in Indonesia without apparent coordination.
Vital registration managed by the Ministry of Interior is confined to urban and developed areas. It provides poor quality data, which is not systematically compiled. Periodic cross sectional national surveys are also implemented in Indonesia. The examples are National Household Health Surveys (NH2S) carried out every 5–10 years and Jakarta Multinational Monitoring of Trends and Determinants in Cardiovascular Diseases (MONICA) project carried out every five years. The surveys provide information on morbidity, mortality (based on verbal autopsy) and on selected risk factors. Behavioural risk factor data are collected periodically by National Socioeconomic and Indonesian Family Life Surveys.

The prevalence of NCD risk factors according to NH2S is:

- hypertension - 7.4% in males and 9.1% in females (according to several local studies the prevalence of hypertension is between 0.6% and 19.4%);
- being overweight - 6.5% of males and 11.8% of females, and
- smoking 45.8% in males and 2.9% in females (in age group 10 years and above).

In addition MONICA survey, carried out in three sub-districts in Jakarta in 1993, reported the prevalence of hypercholesterolemia (14.8% in males and 18.0% in females) and hypertriglyceridemia (32.1% in males and 20.6% in females).

Important information on NCD surveillance comes from routine recording systems such as cancer registry in Semarang Municipality, NCD surveillance in Yogyakarta Municipality and Annual Morbidity and Mortality of Hospital Inpatient Report. The latter is based on 10.9% sample of total inpatient abstracts. The existing routine reporting systems in Indonesia, though inappropriate for NCD surveillance, provide valid information on injuries and accidents (Quarterly Accident Report on Highways and accident report in the Indonesian police in figures).

Community laboratories, a type of longitudinal studies of health events, were established in several districts. NCD surveillance has been integrated recently into a system operating in Purworejo Province held by Gajah Mada University.

The total estimated burden of diseases in Indonesia was 60 863 000 DALYs in 1998. Communicable diseases contributed for 45%, NCDs for 43% and injuries for 12% of DALYs respectively.
5.6 Myanmar

An integrated National Health Management Information System was initiated in July 1995. Data including morbidity and mortality statistics are collected on a monthly basis from sub-rural health centres, rural health centres, and at township level. The reporting efficacy is more than 80%. Most of the diseases reported by peripheral units belong to the infectious disease category, while those from hospitals are mainly NCDs. Data on NCD risk factors are not much available. The Vital Registration and Statistics System introduced since 1962 covers 91% of urban population and 53% of rural population. Mortality is largely under-recorded and under-reported. Information on specific causes of deaths occurring at home in rural and even urban areas is not available. Although ICD-10 is not much applied at State/Division level, the Central Information Unit reclassified the aggregate data. The private market of medical care is increasing rapidly with about 60% of all medical doctors working in this sector. However, the information reporting system has not been established in private sector yet.

With 12.7% of total reported deaths, CVDs occupy the third position on the list of leading causes of mortality in Myanmar. This is followed by respiratory diseases (11.2%) and injuries (10%). Cancer contributes to 2.9% of deaths and ranks as the ninth most frequent cause of mortality.

5.7 Nepal

The main source of data on NCD-associated morbidity and mortality is the Annual Report published by the Department of Health Services, which is based on the national health reporting system. The response rate in 1997/1998 was 100% for district health office, 57% for district hospitals, 92% for health posts, and 48% for sub-health posts. Data from the private sector was not included in the report. The major bias in aggregated data is caused by under and mis-reporting of events due to poor accessibility of health care services and difficulties in establishing diagnosis. Classification and grouping of diseases is not based on ICD. There is no standardized reporting format for NCDs. Most deaths occur outside hospitals.

Out of estimated 254 859 deaths in Nepal in 1997/1998, only 68 552 events were analyzed. The proportion and rank of NCDs as the cause of death were 4% and third for COPD, 1.9% and seventh for heart diseases, and 0.8% and tenth for cancer. COPD was the only NCD listed among the top 10 leading causes of morbidity.
A hospital survey carried out in Kathmandu Valley showed that cancer contributed to 3% of admissions. The leading sites of cancer were lung 8.19%, breast 6.07%, and cervix uteri 6.35%. Different pattern of admissions was observed in Bir Hospital (a tertiary hospital). Stroke was ranked as number one, COPD number two, poisoning number three, renal failure number five, cancer number six, diabetes mellitus number eight, hypertension number nine, and diabetic nephropathy number ten. No studies on CVD, examining the problem in the national context, have been conducted so far. However, based on available information, it was estimated that the prevalence of CVD is 5.6% in the mountain area, 1.5% in the hills, and 5% in the Terai. The prevalence of hypertension among adults is estimated to be 5-20% and that of diabetes mellitus is 15% in urban and 2% in rural areas (in the age group 15+ years).

5.8 Sri Lanka

The main source of mortality and morbidity data is routinely available information from the Registrar-General and the Department of Health. Analysis of hospital data revealed that 12% of admissions are due to communicable diseases, 5.4% to cardiovascular diseases and 1.4% to cancer. Hospital deaths caused by communicable diseases were 8.1% only, while 18.8% resulted from cardiovascular diseases and 6.5% from cancer.

Studies on NCD risk factors showed that:

- fat consumption accounts for 24.2% - 25.6% of total calorie intake (80% provided by coconut oil);
- 61% of adults exceed the recommended daily sodium intake;
- prevalence of hypertension among adults ranges from 8.0% to 33.8%;
- prevalence of obesity (BMI>25) in Kalutara district is 15%, and
- mean cholesterol level among adults range from 5.1 to 5.6 mmol/l.

Vital registration system has been established in Sri Lanka since 1815. The latest mortality data published by the Registrar-General is for the year 1988. There are, however, unpublished reports using ICD-9 for the years 1995 and 1996. The island-wide coverage of deaths is over 90%. Only about 30-35% of deaths occur in hospitals. Inaccurate transfer of medical data by lay
registrars together with other factors leads to high proportion of deaths being attributed to ‘other forms of cardiac diseases’. The cause of 19% of deaths that occurred in Colombo General Hospital was reported as ‘ill-defined’.

It has been estimated that 55% of the outpatient services are provided by the private sector. In contrast, majority of the inpatient services is delivered by the public sector institutions. Inpatient morbidity and mortality data are collected quarterly from state sector hospitals and since 1996 are based on ICD-10.

A national prevalence study of selected NCDs is planned by the Department of Health, and the work on this project has already commenced.

5.9 Thailand

The study compiled data obtained from the Ministry of Public Health, Central Registrar Office, and other related reports. Among the 10 leading causes of mortality, diseases of circulatory system ranked second, diseases of respiratory system fourth, and cancer fifth. Their contribution to the total number of deaths was 20.1%, 5.5% and 5.4% respectively.

A 1998 survey on risky behaviours showed that 57.62% respondents did not use safety belts, 44.06% did not use anti-knock helmets, 11.25% drove at a high speed, 25.54% smoked cigarettes, 13.25% drank alcoholic beverages, 34.7% exercised regularly.

In Thailand, the morbidity reporting system is based on the compilation of reports from health service units under the Health Information Division. There is also a special surveillance system for 19 causes of accidents. Three national health examination surveys has been conducted by MOPH in 1982, 1991-1992 and 1998. The major problems in the implementation of NCD surveillance system are lack of effective networking, training and consultative meetings.

6. COUNTRY REPORTS ON DIABETES MELLITUS

An intercountry workshop on Prevention and Control of Diabetes Mellitus in the Countries of the South-East Asia Region, held in Dhaka, Bangladesh, in
April 1998, made specific recommendations on the development and strengthening of national diabetes mellitus prevention and control programmes. As a follow-up of this workshop, baseline data on diabetes was collected from nine SEAR Member Countries. The reports were presented at a plenary session together with country reports on surveillance of major NCDs and then verified and discussed in depth at a separate working group session. The framework for the Regional Diabetes Profile has been developed.

It was group noted that diabetes mellitus is an increasing phenomenon in Asia and it contributes significantly to the evolving paradigm of epidemiological transition. Demographic and socioeconomic changes resulting in acquisition of unhealthy lifestyles are to be blamed for the diabetes epidemic observed recently in developing countries. In addition, the relative role of the unique ethnic predisposition of some Asian populations to diabetes and the impact of prenatal and early-life malnutrition on observed epidemic needs to be further clarified to guide appropriate public health action.

Some countries in the Region have documented manifold growth in the prevalence rate of diabetes mellitus during the last two decades. In 1998, 38.5 million persons were estimated to be afflicted with diabetes mellitus in SEAR as shown in Table 2 below. The prevalence rate of diabetes in adults ranged from 2.1% to 8.1% and that of impaired glucose tolerance from 7.6% to 15.4%. A trend of early age of diabetes onset has been noted. It is also becoming evident that disadvantaged socioeconomic groups in developing countries, rather than more affluent segments of the society, are bearing the main brunt of diabetes epidemics.

Type 2 diabetes mellitus accounts for 90-95% of the disease load. It is preventable by means of dietary and physical activity intervention. Furthermore, improved treatment was demonstrated to prevent occurrence of late diabetic complications, thus decreasing the economic burden of the disease. Nonetheless, analysis of reports revealed the overall inadequacy of health care infrastructure and underdevelopment of human resources to cope with the rising burden of diabetes mellitus in South-East Asia. Most of the Member Countries do recognize diabetes as a public health problem. At present, functioning national programmes for control of diabetes have been developed only in Bangladesh, Myanmar and Thailand. Some activities at the national level have been reported in DPR Korea, India and Sri Lanka.
Table 2. Estimated prevalence (all ages) of diabetes mellitus in SEAR countries in 1998 (SCN, WHO, SEARO)

<table>
<thead>
<tr>
<th>Country</th>
<th>Per cent</th>
<th>Number</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>2.2</td>
<td>2 700 000</td>
<td>National estimate, survey U, R</td>
</tr>
<tr>
<td>Bhutan</td>
<td>0.4</td>
<td>2 430</td>
<td>National estimate</td>
</tr>
<tr>
<td>DPR Korea</td>
<td>0.7</td>
<td>15 000</td>
<td>National estimate</td>
</tr>
<tr>
<td>India</td>
<td>2.9</td>
<td>28 415 100</td>
<td>National estimate, survey U, R</td>
</tr>
<tr>
<td>Indonesia</td>
<td>2.0</td>
<td>4 117 000</td>
<td>National estimate, survey U, R</td>
</tr>
<tr>
<td>Maldives</td>
<td>5.5</td>
<td>14 900</td>
<td>National estimate</td>
</tr>
<tr>
<td>Myanmar</td>
<td>1.4</td>
<td>622 960</td>
<td>National estimate, hospital data</td>
</tr>
<tr>
<td>Nepal</td>
<td>1.3</td>
<td>314 360</td>
<td>Personal com.</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>4.9</td>
<td>907 000</td>
<td>National estimate, survey U, R</td>
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<tr>
<td>Thailand</td>
<td>2.3</td>
<td>1 380 000</td>
<td>National survey</td>
</tr>
<tr>
<td>SEAR</td>
<td>2.6</td>
<td>38 488 650</td>
<td>Regional estimate</td>
</tr>
</tbody>
</table>

U = urban; R = rural

7. REPORTED APPROACHES TO NCD SURVEILLANCE IN SEAR

In spite of growing evidence on rise of epidemics, NCDs are not regarded as a public health priority in the majority of developing countries. Accordingly, the standards for NCD surveillance are yet to be established in low resource countries. Based on the source of data, one may discern five main approaches to NCD surveillance currently in use in Member Countries: these are recording-based surveillance, national reporting-based surveillance, national periodic surveys, follow-up of community studies, and national death registries. The status of their implementation in SEAR countries is outlined in Table 3.
Table 3. Approaches to NCD Surveillance adopted by SEAR Countries by the Year 2000

<table>
<thead>
<tr>
<th>Country</th>
<th>Recording Based Surveillance (Urban Registry)</th>
<th>National Reporting Based Surveillance (Road Injury)</th>
<th>National Periodic Survey</th>
<th>Follow Up Study (Community Laboratory)</th>
<th>National Death Registry (Coverage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>0</td>
<td>1</td>
<td>0</td>
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<td>NA</td>
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<td>Bhutan</td>
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<td>Thailand</td>
<td>4</td>
<td>3</td>
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<td>1</td>
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Source: Country Reports on a Study on Surveillance of Major Noncommunicable Diseases (SCN, SEARO, 2000)

Recording-based surveillance is an appropriate tool for measuring NCD incidence in a defined population (e.g. cancer incidence). It requires laboratory/medical confirmation. Abstracts from all medical records and from other sources are linked during data analysis to prevent multiple recording of cases. India and Thailand are the only SEAR countries with established functioning cancer registries.

Multiple problems related to medical records were identified by the principal investigators of the study. These are: correctness and completeness of identity, real domicile, diagnosis, readability, ICD-10 and ICD-O coding, work overload and inadequate skills of medical record staff, and sustainability of funding. NCD registries established in hospitals could provide valid information on the proportion of distribution of diseases as well as on some other indicators such as disease staging at diagnosis and survival rate etc.
National reporting-based surveillance, which systematically compiles reports from peripheral to central level, is a poor tool for measuring NCD morbidity, with the exception of injuries and external causes. This is attributed to the following factors: multiple records and reports of the same case, discrepancies between central and peripheral level in quality of clinical diagnosis, low response rate and coverage especially by private health sector, lack of standardized report format, etc. Nonetheless, hospital based reporting system could provide useful data on the proportion of distribution of causes of deaths.

National periodic survey is a good tool for measuring morbidity, biological risk factors and behavioural risk factors of NCDs that occur with moderate to high prevalence. Indonesia reports integration of NCD risk factor measurement into four large surveys, namely, National Household Health Survey, National Socioeconomic Survey, Indonesian Family Life Study, and Demography and Health Survey. The National Household Health Survey includes verbal autopsy study that is implemented by trained medical doctors. Since vital registry has not been well developed, this study has a potential to provide valid mortality data. Demography and Health Survey, an important multicountry survey has been conducted in seven SEAR countries. The survey is carried out every three years. It can serve as a frame for measuring NCD risk factors.

Follow-up community study is a tool for collecting information on risk factors and also some major NCDs in rural areas. India reported one community laboratory and one rural cancer registry that incorporated NCD surveillance. NCD surveillance has been recently integrated into a community laboratory in Indonesia. Integration of NCD surveillance into the existing community laboratories is regarded as a cost-effective approach.

National death registries have not been adequately developed in most of the low-resource countries. Myanmar, Sri Lanka and Thailand reported coverage of at least 70% deaths. Mortality data are an important supplement to NCD surveillance, especially for acute fatal events occurring outside hospitals. Nonetheless, a number of problems still exist even in the countries with a long history of death registry. These are validity of diagnosis, medical certification, coverage of deaths occurring outside hospital, and coordination between Death Registrar and the Ministry of Health. India has attempted to produce cause-specific death data in rural areas by conducting periodic verbal autopsy, whereas Indonesia has incorporated verbal autopsy into National
Household Health Survey. The experience shows that classification power of verbal autopsy is limited to 2-digit category of ICD-10, beyond which the validity and reliability is rather poor.

8. MAJOR AREAS COVERED BY THE TECHNICAL DISCUSSION

With the ongoing epidemiological transition in SEAR, NCDs contribute to a significant proportion of morbidity, mortality and health related socioeconomic losses. WHO estimates that nearly 52% of all deaths and 38% of disease burden in SEAR are related to NCDs, thus reflecting the growing problem in developing and transitional societies. Further, NCDs place a heavy burden on the health care systems in terms of consuming hospital resources to a significant extent. The participants discussed at length on various aspects of noncommunicable diseases in the Region. The discussions focused on a number of areas, which are summarized below.

8.1 Information Gaps

All the participants expressed the need for good reliable information on epidemiology of NCDs in order to facilitate programmes at the local, national and regional levels. To develop any systematic programme, data is required on at least three aspects:

(1) Problem: mortality (total deaths due to a single cause and age – sex specific rates to every cause) and morbidity (prevalence and/or incidence).

(2) Pattern: at least for prioritized disorders like cardiovascular diseases, cancer, diabetes mellitus and injuries.

(3) Determinants: as to what factors contribute for the occurrence of disease.

The present system of death certification in the urban and rural areas of the Region is far from satisfactory and requires improvement in terms of recording, coverage, accuracy and completion. The medical record information system in the majority of health care institutions in SEAR is also far from satisfactory and is not helpful for wider activities. Even though NCD
deaths are increasing in numbers, sufficient attention is not paid towards recording proper information, analysis and utilization.

The group felt that the epidemiological data available at present has limited usefulness for developing intervention programmes and cannot be used for evaluation of any intervention activities. In this situation, it was felt that focused epidemiological research should be developed in selected centres in all SEAR Member Countries to promote a better understanding of NCD epidemiology. Some of the participants said that NCDs are not included in information systems uniformly across countries and data are not easily available. Extrapolating from epidemiological surveys also carries the dangers of overestimating or underestimating the problem. It was also felt that health functionaries in government agencies should be adequately trained to document NCD-related information in all countries.

Despite considerable efforts the quantity, quality, accessibility and practical applicability of information on major NCDs in SEAR is largely inadequate.

8.2 Surveillance

The group discussed various aspects of NCD surveillance and its present status and recognizing the importance of NCD surveillance in the Region, felt that a systematic approach is totally lacking in this direction. It was pointed out that a standardized methodology for NCD surveillance activities is totally lacking. The ongoing efforts are research-oriented, based on individual and institute-specific interests. The types of surveillance also depend upon methods like sentinel sites, community-based or hospital-based programmes in the Region. These attempts help in better understanding of the problem and provide in-depth information.

Surveillance by definition includes a series of activities involving data collection, analysis, interpretation, action oriented intervention and feedback. The group also debated the choice between disease-oriented surveillance and risk factor surveillance and felt that both were crucial for intervention activities. The choice of indicators was related to mortality, morbidity, disability and behaviour-related risk factors. The methodology for collection of data is outlined in Table 4.
Table 4 - Methodological Approaches for Collection of Data on NCDs

<table>
<thead>
<tr>
<th>routine national reporting system</th>
<th>Sentinel</th>
<th>Registry (Case)</th>
<th>Special Study</th>
<th>Death Registration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morbidity</td>
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<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Mortality</td>
<td>X</td>
<td>X</td>
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<td>X</td>
</tr>
<tr>
<td>Risk Factors</td>
<td></td>
<td>X</td>
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</tr>
</tbody>
</table>

An integrated approach to risk factor surveillance is vital for NCD control. For example, tobacco usage as a risk factor contributes to cardiovascular diseases, stroke, cancer, and others. Thus, targeting one risk factor for intervention will yield significant benefits for many other programmes. Further, high-risk communities, groups, families and individuals should be identified and targeted for interventions, which is possible through surveillance activities. It was felt that WHO should take a lead role in developing the required guidelines, methodology, instruments and demonstration projects for an integrated approach for the control of major NCDs.

From the experience of surveillance of HIV-AIDS, it was felt that surveillance agencies collect large amounts of data, which are not individually put into practical use. Hence, it was decided that the surveillance systems should focus on minimal - vital data and avoid complicated forms and other procedures. Repeated surveys in the community at periodical intervals would throw better light on changing risk factor levels and their contribution. The group also felt that secondary sources of data from related sectors and social welfare agencies should be incorporated in surveillance programmes.

There is an urgent need to develop and implement a simple, inexpensive, reliable and sustainable system of NCD surveillance in SEAR in order to monitor the ongoing epidemics and evaluate effectiveness of planned interventions.
8.3 Risk Factors

Several risk factors have been identified for different noncommunicable diseases. With regard to individual disorders, these risk factors contribute both individually and collectively. The major risk factors of importance are tobacco usage, high blood pressure, hypercholesteremia, excessive alcohol consumption, obesity, sedentary lifestyle, unhealthy diet and stress. A collective examination of risk factors indicates that a significant majority of these factors (like tobacco usage, alcohol, diet) are related to the life-styles of individuals and people within societies. Further, this group of life-style related, high risk behaviours are risk factors by themselves and contributing factors for several NCDs. Most of the times multiple risk factors operate in the causation of NCDs. The contribution of stress as a major risk factor has not been examined in the SEAR Member Countries. Many problems related to definitions, measurement and process of data collection were highlighted as the major obstacles. It was pointed out that practical and feasible methodologies should be developed for measuring all major risk factors and stress in developing countries.

Participants also held the view that since countries of the Region have a flourishing base of traditional systems of medicine, alternative approaches to reduce the prevalence of risk factors and improve health (like yoga and meditation) should be targeted for research and considered as potential options in NCD control. Several protective factors with regard to the health status of the communities contributing to a lesser magnitude of NCDs needs to be identified such as the relationship between the use of olive oil and lower incidence of CVDs. Specially in the traditional communities, several day-to-day practices related to diet and exercise are found to have a positive effect on the health status of population. This needs to be examined to promote the health of the people.

It is observed that the epidemic of NCDs is life-style-related and could be modified by community-based interventions addressing identified behavioural risk factors. In order to provide meaningful evaluation of interventions, these factors should also be targeted for NCD surveillance.

8.4 Classification

Even though ICD-10 classification system has been recommended all over the world, it is not included on a regular basis in the health care systems of SEA
Region, except in some research institutions of India, Indonesia, Nepal and Thailand. While this has caused considerable difficulties for classification and comparison purposes, this classification is complicated and may not be possible to adopt with the existing health care resources. In almost every country, medical records are not computerized and coding of diagnosis has to be done manually by workers. Although classification systems are used extensively for research activities they are not in-built into the work of health information systems. In view of this, it may be necessary to develop a simple, practical, and feasible system to avoid wrong classification of major NCDs.

8.5 Research

While numerous discussions are held towards prevention and control of NCDs, an understanding of the basic risk factors (mechanisms by which they operate in the occurrence of disease) at the population level has not been possible. This type of understanding is crucial to develop focused and targeted policies and programmes at community levels. The problems in definition, measurement, ascertainment, reporting bias and wrong classification contribute to the complexities of risk assessment. Along with estimation of currently known risk factors, there is also a need to identify several new factors linked to social and economic deprivation such as life events, nutritional factors and socioeconomic status as contributing factors for the emergence of NCDs in the Region. Any sustainable intervention requires a clear understanding of the present situation of risk factors. In order to identify changing trends, evolving epidemics and strategies for risk factor modification through behavioural, cultural, pharmacological and other methods, it is essential to develop a quantitative and qualitative understanding of these risk factors in the Region through focused basic clinical research and population-based studies.

Information on NCDs and risk factors has to be developed from existing health systems, community-based surveys, and focused epidemiological studies. Population-based surveillance, sentinel surveys, disease-specific registries, ethnographic studies and research on social aspects of NCDs should be incorporated and encouraged. The concept of sentinel surveillance was echoed by the participants and was recommended as major strategy in many countries. The group expressed that major institutions should network and interact for sharing experiences within and outside the Region. NCD surveillance should also be linked with environmental epidemiology, as several environmental factors have been incriminated in the aetiology of NCDs.
8.6 **Management**

The management strategy of NCDs by the health sector needs significant revisions if compared with the control of communicable diseases, nutrition and infectious disorders. The present health system has not been geared up in terms of appropriate manpower, adequate resources and restructuring of health services. Countrywide planning has to be done to address this major problem. The participants expressed the view that an integrated approach towards prevention and control of noncommunicable diseases (e.g. CINDI, CARMEN) should be developed which would avoid duplication of work and enable judicious use of resources for bringing the desired changes over a period of time. A strategic plan needs to be incorporated towards advocacy building to strengthen surveillance, develop cost-effective and evidence-based intervention; and based on utilization of research, this strategic plan should be promoted in the Region. It was also felt that NCD initiatives are in the early stages of development. Integrated national programmes for prevention and control of NCD should be developed/strengthened in SEAR Member Countries in order to prioritize and support activities of public health importance.

| Countries should develop and strengthen national integrated programmes for prevention and control of major NCDs. |

The existing human resources in the Region are primarily engaged in the delivery of prevention and control of communicable diseases. Further, neither this category has been exposed to nor involved to a greater extent in activities related to noncommunicable diseases. This has created a vacuum. WHO should take a lead role in guiding governments to address this problem and alternative strategies to develop relevant human resources to handle the emerging NCD epidemic should be addressed urgently.

With the emergence of private sector health care, the cost of management of NCDs would be beyond the reach of many developing societies. Health care systems need to be restructured and guided in appropriate ways to contain the cost of basic NCD management. The lessons learnt from national programmes related to various communicable diseases should be put into greater use to avoid expensive mistakes in research and programme organization towards delivering services to individuals with noncommunicable diseases. There should be a large-scale networking of leading institutions within the Region to develop activities in NCDs. A major focus of this strategy should be on promotion of institutional strengthening
mechanisms so that centres of excellence as focal points would emerge for large number of NCD surveillance, prevention and control activities in the Region.

Capacity-building through national and regional networking and strengthening of existing institutions is a clear priority for NCD prevention and control activities. Standard tools and methods of NCD surveillance should be urgently developed and tested in the Region.

9. CONCLUSIONS

The consultation reviewed country reports, developed a format for the Regional Profile of NCDs, and extensively discussed the strategies for development of an integrated surveillance system for major NCDs and their risk factors in SEAR Member Countries.

This was a landmark meeting in which experts from most Member Countries gathered together to discuss emerging issues related to the surveillance of noncommunicable diseases. Substantial progress has been made in terms of highlighting the importance of NCD issues in this Region. The principal investigators enthusiastically participated before and during the meeting. It should be noted that there is reasonable amount of NCD data for the Region. During the meeting a number of issues related to surveillance, prevention and control of NCDs and mechanisms to promote new initiatives in the Region were discussed. These were:

(1) Epidemiological evidence gathered during the last two decades clearly demonstrates the growing magnitude of NCDs in SEAR;

(2) The available epidemiological data on NCDs is difficult to utilize for advocacy and planning purposes due to methodological constraints;

(3) Population-based data on NCDs is fragmented or in early stages of development in SEAR Member Countries;

(4) Reliable, feasible and inexpensive tools for monitoring and evaluation of NCD intervention programmes, which have been developed elsewhere, have not been adapted and used in the Region;

(5) Review of the reports on major NCDs in SEAR revealed broad inadequacies of available information on cardiovascular diseases. The data on cancer and diabetes mellitus are more easily available and of better quality in some but not all countries;
(6) While mortality data are available for major NCDs in the Region, reliable information on morbidity, disability and socioeconomic determinants is lacking considerably, and

(7) Community-based integrated strategies for prevention of major NCDs have proved to be effective in other Regions, which have not been implemented in the SEA Region.

10. RECOMMENDATIONS

10.1 Programme Development
(1) Member Countries should develop a national integrated NCD surveillance and control programme, since such a programme is either non-existent or is fragmented and vertical.

(2) National focal points/agencies on surveillance of NCDs and their risk factors should be identified and supported by MoH.

(3) Detailed methodology for core NCD surveillance in SEAR should be developed by WHO.

(4) WHO should identify/support development of a regional Centre of expertise for developing NCD surveillance in the Region.

(5) WHO should take a lead role in supporting Member Countries in advocacy activities in NCD prevention and control.

(6) An intersectoral approach and coordination between health and health-related divisions both within and outside governments should be encouraged for NCD prevention and control activities.

10.2 Regional Profile
(1) Based on available information, a profile of NCDs in SEAR should be developed and widely utilized for advocacy on NCD prevention and control.

(2) The process of collection, analysis, and utilization of critical data on NCDs in SEAR should be improved and standardized.

10.3 Surveillance System
(1) A regional strategy and plan of action for surveillance of NCDs in SEAR should be developed.
(2) WHO should assist Member Countries in developing/strengthening national systems for NCD surveillance.

(3) WHO should provide simple but detailed guidelines on the development of NCD surveillance system in Member Countries and support capacity-building and training for such a system.

(4) Surveillance of major NCDs should be selective and accompanied by surveillance of risk factors including socioeconomic determinants.

(5) NCD surveillance should be incorporated into the national system of disease surveillance.

(6) WHO should support development of regional network of NCD surveillance.

10.4 Intervention

(1) A model project on integrated community-based intervention should be developed and implemented in selected Member Countries.

(2) Simple, inexpensive and reliable methodology and a set of tools for monitoring and evaluation of ongoing and planned NCD intervention programmes should be developed.

10.5 Other Recommendations

(1) WHO should develop guidelines for secondary and tertiary prevention and good practice for major NCDs.

(2) WHO should develop guidelines for screening of high-risk groups.

(3) WHO should promote and support high quality research on public health aspects of major NCDs.
Annex 1

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Annex 2

TEXT OF ADDRESS BY DR UTON MUCHTAR RAFEI
REGIONAL DIRECTOR, WHO SOUTH-EAST ASIA REGION

The new era of globalization has witnessed a gradual shift in the pattern of disease burden. While infectious diseases continue to be the leading cause of mortality and morbidity, we are facing an increasing burden of noncommunicable diseases. This double burden of diseases imposes a tremendous strain on national health budgets and health services. According to estimates in the World Health Report 2000, noncommunicable diseases account for nearly 52 per cent of all deaths and 38 per cent of the disease burden in the South-East Asia Region. Significantly, ten countries of the Region contribute 22 per cent to the global noncommunicable disease-related mortality and one-fourth to the global noncommunicable disease burden.

The epidemiological transition, with its distinct rise in the burden of major noncommunicable diseases is expected to continue in the coming decades as the economic, social, behavioural, and demographic determinants of noncommunicable diseases become more apparent. Increasingly, larger segments of population in the Region are acquiring unhealthy lifestyles. Rising tobacco consumption, unbalanced diet and physical inactivity have become the important factors contributing to the ill-health of the population.

The recent Report on Global Strategy for the Prevention and Control of Noncommunicable Diseases by the Director-General of WHO, Dr Gro Harlem Brundtland, stresses that the rapid rise in the incidence of noncommunicable diseases represents one of the major health challenges to development in the 21st century, in particular, in the developing countries who suffer the greatest impact.

The WHO Global Strategy aims at reducing the burden of noncommunicable diseases by strengthening systems for surveillance of major noncommunicable diseases, including cardiovascular diseases, cancers, diabetes mellitus, and chronic respiratory diseases as well as their risk factors. It focuses on prevention through integrated control of risk factors at individual, family, community, and population levels.
Collection, analysis, and use of a reliable and up-to-date health information are the essential aspects of health planning and management. Surveillance of noncommunicable diseases and its risk factors remains a missing element in the regional health information system. The establishment of a suitable mechanism for surveillance should be considered as a tool for the improvement of noncommunicable disease prevention and control in South-East Asia.

We should always keep in mind that the descriptive epidemiology of noncommunicable diseases and their risk factors have to be applied in the socio-economic context. The conditions in which people live and the ways in which they behave are of great significance. Therefore, a good surveillance system should also address the socio-economic determinants of health and diseases. This information is essential, as it provides public health professionals with a powerful tool to improve their capacity and credibility for taking direct action, both inside and outside the health sector.

The lack of easy access to reliable surveillance data on major noncommunicable diseases results in little attention being paid by some governments to its health and socio-economic implications. These problems need to be addressed. Supporting the development of the integrated framework for noncommunicable disease surveillance in the Region is a good example of WHO technical assistance and leadership in strengthening and reconceptualizing health care systems.

Responsiveness becomes the major WHO performance indicator of the health systems. Therefore, the epidemiological surveillance of major diseases should provide continuous access to current information, guiding health reforms in order to make them more responsive to changing expectations resulting from demographic and epidemiological transition. Transformation of the health systems has to be based on evidence-based information. Therefore, disease surveillance should aim at integrating collection and delivery of valid data and building information framework for health care transformation.

Through balanced dialogue and positive interaction we should aim at creating partner-based networks for the development of effective, reliable, and sustainable surveillance of noncommunicable diseases in the Region. The specific outcome for which you are accountable is the development of a baseline profile of major noncommunicable diseases in the South-East Asia Region. The document should raise awareness and provide a better insight and be a tool for health policy-makers in developing public health strategies and interventions.
The foundation of intelligence on noncommunicable diseases that includes both collection and utilization of information is an important task that should not be neglected any longer. We have to develop and provide technical assistance to introduce an easy system that is affordable and manageable. In addition to surveillance, we must strengthen our health promotion and advocacy of noncommunicable diseases among service providers, decision-makers and the public.

I do hope that this Consultation will come up with a clear message, a feasible plan of action and sound recommendations. These could be effectively utilized to support the development of the conceptual framework for the establishment of a comprehensive and reliable regional surveillance system of major noncommunicable diseases.

I would like to convey my warm greetings to you and wish you fruitful discussions, meaningful outcomes and a comfortable stay in New Delhi.

Thank you very much.
Annex 3

PROGRAMME

Wednesday, 2 August 2000

0830-0850 hours  Registration of participants
0900-0930 hours  Inaugural Session
1000-1100 hours  Presentations
  • Global and regional surveillance on NCDs and their risk factors
    - by Dr Sawat Ramaboot
  • Strategy for integrated NCD prevention and control
    - by Dr J. Leowski
  • Cardiovascular diseases research initiative for developing countries
    - by Dr K. Srinath Reddy
1100-1230 hours  Country reports on existing systems of NCD surveillance and
                national programmes for NCD prevention and control
1400-1630 hours  Summary comments on country reports on NCDs surveillance

Thursday, 3 August 2000

0900-1230 hours  Group Work
  • Discussion of collected data on major NCDs
  • Discussion of collected data on diabetes mellitus
1400-1500 hours  Report of working groups

Thursday, 3 August 2000

1515-1630 hours  Group Work
  • Feasible system of NCD surveillance in developing countries
    - Facilitator: Dr Sawat Ramaboot
  • Regional guidelines for NCD surveillance in SEAR
    - Facilitator: Dr J. Leowski
• Structure and function of NCD surveillance network in SEAR
  - Facilitator: Dr Jai P. Narain

• Development/strengthening of national programmes for integrated prevention of major NCDs
  - Facilitator: Dr Vijay Chandra

Thursday, 4 August 2000

0900-1000 hours  Report of working groups
  Discussion on development of regional NCD and diabetes profiles

1015-1200 hours  Group Work
  • Drafting of format of SEAR NCDs Profile
    - Facilitator: Dr K. Anand
  • Drafting of format of SEAR Diabetes Mellitus Profile
    - Facilitator: Dr Mahen Wijesuriya

1230 – 1330 hours  Recommendations of the consultation
  Closing
## Annex 4

### LIST OF DOCUMENTS

<table>
<thead>
<tr>
<th>S No.</th>
<th>Document Title</th>
<th>Document No.</th>
</tr>
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<tbody>
<tr>
<td>A. Background Documents</td>
<td></td>
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</tr>
<tr>
<td>1.</td>
<td>Objectives and Expected Outcome</td>
<td>SEA/NCD/Meet.2/1</td>
</tr>
<tr>
<td>2.</td>
<td>Tentative Programme</td>
<td>SEA/NCD/Meet.2/2</td>
</tr>
<tr>
<td>3.</td>
<td>Provisional List of Participants</td>
<td>SEA/NCD/Meet.2/3</td>
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<tr>
<td>4.</td>
<td>Guidelines for Compilation of Data on NCDs</td>
<td>SEA/NCD/Meet.2/4</td>
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<td>Guidelines for Final Country Report on Surveillance of Major NCDs</td>
<td>SEA/NCD/Meet.2/5</td>
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<td>6.</td>
<td>Guidelines for Collecting Data on Diabetes Mellitus</td>
<td>SEA/NCD/Meet.2/6</td>
</tr>
<tr>
<td>7.</td>
<td>Draft Guidelines for Integrated Surveillance of Major Noncommunicable Diseases in the WHO South-East Asia Region</td>
<td>SEA/NCD/Meet.2/7</td>
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<tr>
<td>8.</td>
<td>Interim Report on a Study on Surveillance of Major Noncommunicable Diseases - Bangladesh</td>
<td>SEA/NCD/Meet.2/8</td>
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<tr>
<td>9.</td>
<td>Report on Collection of Data on Diabetes Mellitus - Bangladesh</td>
<td>SEA/NCD/Meet.2/9</td>
</tr>
<tr>
<td>10.</td>
<td>Interim Report on a Study on Surveillance of Major Noncommunicable Diseases - Bhutan</td>
<td>SEA/NCD/Meet.2/10</td>
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<tr>
<td>11.</td>
<td>Report on Collection of Data on Diabetes Mellitus - Bhutan</td>
<td>SEA/NCD/Meet.2/11</td>
</tr>
<tr>
<td>12.</td>
<td>Interim Report on a Study on Surveillance of Major Noncommunicable Diseases - DPR Korea</td>
<td>SEA/NCD/Meet.2/12</td>
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<td>Interim Report on Collection of Data on Diabetes Mellitus - DPR Korea</td>
<td>SEA/NCD/Meet.2/13</td>
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<td>14.</td>
<td>Report on a Study on Surveillance of Major Noncommunicable Diseases - India (plus Addendum)</td>
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<td>15.</td>
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<td>SEA/NCD/Meet.2/15</td>
</tr>
<tr>
<td>16.</td>
<td>Report on a Study on Surveillance of Major Noncommunicable Diseases – Indonesia</td>
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<td>18.</td>
<td>Interim Report on Collection of Data on Diabetes Mellitus – Maldives</td>
<td>SEA/NCD/Meet.2/18</td>
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<td>19.</td>
<td>Interim Report on a Study on Surveillance of Major Noncommunicable Diseases – Myanmar</td>
<td>SEA/NCD/Meet.2/19</td>
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<td>22.</td>
<td>Report on a Study on Surveillance of Major Noncommunicable Diseases – Sri Lanka</td>
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<td>24.</td>
<td>Interim Report on a Study on Surveillance of Major Noncommunicable Diseases – Thailand</td>
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<td>25.</td>
<td>Interim Report on Collection of Data on Diabetes Mellitus – Thailand</td>
<td>SEA/NCD/Meet.2/25</td>
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<td><strong>B. Information Documents</strong></td>
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<td>26.</td>
<td>Global Strategy for the Prevention and Control of Noncommunicable Diseases – Report by the Director-General (Fifty-third World Health Assembly, Provisional Agenda Item 12.11, Document No.A53/14)</td>
<td>SEA/NCD/Meet.2/Inf.1</td>
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<td>27.</td>
<td>WHA Resolution on Prevention and Control of Noncommunicable Diseases, Agenda Item 12.11, Document No.WHA53.17</td>
<td>SEA/NCD/Meet.2/Inf.2</td>
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<td>28.</td>
<td>Diabetes Mellitus and other common lifestyle-related noncommunicable diseases control in South-East Asia – Assignment Report of Dr J. Leowski, WHO/STC</td>
<td>SEA/NCD/Meet.2/Inf.3</td>
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<td>29.</td>
<td>Non-communicable Disease Control in South-East Asia – Assignment Report of Dr Vijay Chandra</td>
<td>SEA/NCD/Meet.2/Inf.4</td>
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<td>31.</td>
<td>Regional Plan for Integrated Prevention and Control of Cardiovascular Diseases and Diabetes for the Western Pacific Region, 1998-2003</td>
<td>SEA/NCD/Meet.2/Inf.6</td>
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