Surveillance of Noncommunicable Diseases

Report of a WHO Meeting

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1. Introduction

Noncommunicable disease (NCD), primarily heart and stroke disease, cancer, chronic obstructive pulmonary disease (COPD) and diabetes caused an estimated 35 million deaths in 2005 with mortality projected to increase by 17% by 2015. Eighty per cent of the deaths occurred in low- and middle-income countries (LMIC). By 2030, 8 out of the 10 leading causes of death will be linked to these conditions. The burden of NCD poses serious implications for social and economic development worldwide but particularly for LMIC.

NCD surveillance is the ongoing systematic collection and analysis of data to provide appropriate information regarding a country’s NCD disease burden, the population groups at risk, estimates of NCD mortality, morbidity, risk factors, behaviours and determinants coupled with the ability to track health outcomes and risk factor trends over time. In this context and for the purposes of this report, a national NCD surveillance system is one which has
national or sub-national representativeness and is integrated to the extent feasible within and builds upon a country’s existing health information systems.

Surveillance is critical to providing the information needed for policy and programme development and appropriate legislation for NCD prevention and control and to support the evaluation of programmes and policies for monitoring progress and success. Surveillance needs to serve practical action and preventive work with emphasis on relatively simple, but relevant indicators of key risk factors, behaviours, determinants and preventive actions. A challenge with such surveillance is to be able to collect data on an ongoing basis using comparable measures.

National surveillance should serve in a strategic capacity in addition to being a fundamental public health function to foster critical partnerships, provide linkage to and inform decision structures with input to information systems at all levels. For information to be turned into action, strategies for linking surveillance information to policy-making, legislation, local planning, health promotion, monitoring and evaluation of interventions, need to be established.

1.1 Meeting Background & Objectives

The 2000 Global Strategy for NCD Prevention and Control has surveillance as one of its three main objectives in order to map the emerging epidemic of NCD and their major risk factors and to analyze the social, economic, behavioral and political determinants, with particular reference to poor and disadvantaged populations.

The 2008 NCD Action Plan through Objective 6, calls on Member States to strengthen surveillance systems with standardized data collection on the above, using recognized methods and tools and calls on WHO to develop and maintain an information system to collect, analyze and disseminate data and information on trends with regard to NCD mortality, disease burden, risk factors and determinants, policies, plans and programmes.

This present meeting is a follow up to an earlier meeting of the Action Plan’s WHO Expert Reference Group on NCD Surveillance held from 6 - 8 April 2009 in Geneva. The present meeting has three interrelated objectives; firstly, to review the NCD surveillance framework developed during the April 2009 meeting, specifically to agree on the key components of a national NCD surveillance system; to agree on a series of practical core indicators for which it is feasible to collect data in all countries; and to define the core indicators and the methodology for data collection; secondly, to review the WHO Country Capacity Questionnaire to achieve consensus on its content and review the main operational issues with regard to implementation and thirdly, to review and propose content of the 2010 WHO NCD Global Status Report. The Programme and List of Participants are attached.
2. Summary of discussion and recommendations

Positioning national NCD surveillance and approaches to data collection

In many instances, surveillance related activities such as surveys are conducted by countries as one time events often utilizing external expertise and resources. As such, the activity does not become institutionalized as an integral part of a country’s health information system. These activities are often not coordinated or standardized and build little or no sustained country capacity.

In many instances, NCD surveillance is mostly a collation, synthesis and presentation of data and information from multiple sectors within and outside the health sector, supplemented and complimented by additional surveys and sources of data. Ultimately, sustainable NCD surveillance systems need to be formalized as an essential component of the national public health infrastructure and become part of a country’s health information system. Generally, they need to be founded in policy and/or legislation. They require long term funding and should be seen as more than a data collection exercise. The information and the processes to collect it contribute to national public health capacity building at all levels, particularly at the local level.

The characteristics of any given national surveillance system are generally dependent on issues of feasibility and availability of resources - the technical, human and financial capacity to gather, process, analyze, interpret, and disseminate information - plus the priority given to NCD by the country. Advanced systems need the capacity to perform complex statistical modelling and analysis on a regular basis.

National NCD surveillance systems need to build upon a country’s existing information systems. For countries with little existing NCD surveillance activity, the development of the system should be an incrementally evolving process. Clearly, the capacity to undertake NCD surveillance varies considerably among countries. In low-resource settings with limited capacity, a viable and sustainable system needs to be simple and produce data at a local level with information and a system rooted in the local context. Enhancing the quality of existing surveillance activities should take priority over expansion of a poor system.

It is important to utilize local resources to build a surveillance culture with a focus on the functional infrastructure for sustainability. There is a critical need for basic and affordable tools and methods that conform to international standards. As information management is critical to advocacy at all levels for action on NCD building local capacity for analysis, interpretation and dissemination are of utmost importance.

NCD surveillance systems should be representative of a national/population level or at least representative of the level from which the data is collected. There are a number of approaches to data collection but methods need to be
appropriate to the context and local capacity. In settings where there is very little or no surveillance activity and capacity is limited, the most feasible approach is to start with a few representative sentinel sites rather than attempting to collect data on a national level. Starting at a level where the quality of data can be managed is critical. Data collect needs to be an ongoing and routine function if a surveillance system is to be sustainable.

For different indicators, the methods of data collection vary - administrative registers, health examinations surveys, health interview surveys etc. - and the relevant frequency of collection may be different - risk factors and behaviours should be followed more frequently than outcomes such as morbidity or mortality that generally do not change as quickly. Age, sex and cause-specific mortality data need to conform to standard definitions, preferably utilizing ICD-coding. Population surveys such as health interview surveys and health examination surveys need to conform to international recommendations for this type of data collection.

Where technically possible, surveillance systems should be linked to other appropriate information systems such as registries. They can be significantly enhanced by optimal mining of economic and demographic public records, including data collection from key points in health care delivery systems.

The challenge for chronic diseases surveillance for the future is to effectively manage an increasingly complex monitoring systems that serve the needs of multiple programmes while adapting to changes in communications technology, (where affordable and accessible) such as the increased use of landline telephone, cellular telephones and call screening devices (answering machines and ability to see the calling number), societal behaviors (concerns about privacy and declining participation in surveys), and population diversity (growing number of languages spoken some countries along with greater cultural and ethnic diversity).

To address these challenges, a surveillance system must maintain an ongoing programme of improvement and adaptation. These efforts are critical for improving the quality of data, reaching populations previously not included, and expanding the utility of the surveillance data. By addressing current challenges and keeping an eye on future issues, these studies help prepare surveillance and monitoring systems for design and implementation changes when needed.

To reduce the cost of surveillance and to improve the timeliness of the data, surveillance needs to consider the use of multi mode data collection. Generally, most data collection is conducted via household surveys (face to face) and are usually quite costly and time consuming. Where appropriate, it may be time to consider the use of telephone (landline and/or cellular) and mail surveys. These surveys could be conducted in addition to the regular ongoing surveys.

For example, a country may conduct a WHO Steps or an equivalent health interview/examination survey every 3 to 5 years but continue surveillance on a yearly basis using telephone or mail. This would produce timely data on self-reported behaviors to monitor programmes and for evaluation and
permit the adjustment of the telephone or mail survey for coverage and self-reported bias to produce national estimates. The rapid spread of cellular telephones, including in low-resource settings, opens a number of opportunities and should be considered for surveillance.

A concern is that at WHO Headquarters and Regional Offices, NCD related data collection activity is compartmentalized within a number of vertical programme structures. This can result in different data standards and advice on data collection with multiple instruments being provided to countries from WHO, depending on the source within the Organization. The instruments used by many programmes are quite complex and are not likely affordable or sustainable in the long run as country surveillance tools. These instruments have been designed for comprehensive global monitoring. However, their indicators are often incorporated into WHO recommendations for national surveillance systems creating complexity where simplicity is needed, particularly in low-resource settings.

This situation would be greatly improved if there was one data platform for the core NCD indicators to be used for national NCD surveillance, particularly risk factor surveys. Such an approach would not hinder programmes from collecting the more detailed information they require. Countries could also collect the more detailed information components as their priorities and needs dictate. Unifying across NMH a relatively simple set of NCD core indicators and consistent data standards could accomplish this outcome.

### 2.1 Revised framework for a national NCD surveillance system

Below is a revised version of the components of a national NCD surveillance system for both core and expanded indicators.

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### 2.2 NCD Indicators
A core indicator is one that is critical to NCD and is feasible to collect in all countries from a technical and resource perspective. Expanded indicators are ones that are central to NCD and provide useful information for policy development and monitoring. All countries may collect these as their priorities and capacity dictates.

2.2.1 Exposures

Monitoring of risk factors at the population level or in a subset of the population has been the mainstay of national NCD surveillance in most countries. With an incremental approach, the first phase of surveillance in many low- and middle-income countries should be based on their priority information needs for policy, programme development, implementation and evaluation. Given these needs and the NCD Action Plan’s emphasis on population exposures to behavioural risk factors, surveillance activities in low-resource settings should place the highest priority to these factors. It is likely that attention to physiological and metabolic risk factors, mortality, morbidity, and other components of the NCD framework will require longer term development.

In this context, the WHO Steps approach to risk factor surveillance is a good example of a phased in approach that has been utilized by many countries worldwide.

**Behavioral including dietary/nutritional risk factors**

**Tobacco Use Indicators**

**Core**
- Prevalence of tobacco use status in the population.
  - Reported in four categories: never tobacco user, former users, occasional user, and daily user.
- Prevalence of cigarette smoking status in the population.
  - Reported in four categories: never smoker, former smoker, occasional smoker, daily smoker.

**Expanded**
- Prevalence of tobacco smoking status in the population.
  - Reported in three categories: non-smoker, occasional smoker, daily smoker.
- Prevalence of smokeless tobacco use status in the population.
  - Reported in three categories: non-user, occasional user, daily user.
- Prevalence of exposure to environmental tobacco smoke.
  - Defined as percentage of population reporting to be exposed to environmental tobacco smoke.
- Mean age of initiation into tobacco use among current tobacco users.
- Mean number of cigarettes smoked per day by current daily smokers.

**Data sources**

Data collected utilizing WHO Steps or similar health interview survey methodology representative of the national or sub national level. Frequency - every 3-5 years.
**Alcohol Consumption Indicators**

**Core**
Prevalence of alcohol consumption status in the population.

- Reported in four categories: lifetime abstainer, past 12 abstainer, drank in last 12 months not current, and current user (defined as population reporting to have drunk alcohol in the past 30 days).

- Prevalence of heavy episodic drinking (last week and last month).
  Defined as population reporting to have 5+ for men and 4+ for women drinks on a single drinking occasion.

**Expanded**
Adult recorded per capita consumption in litres of pure alcohol.

- Prevalence of category II and category III drinking (awaiting new labels from October meeting).
  - Category III is defined as drinking $\geq 60$g of pure alcohol on average per day for men and $\geq 40$ g for women.
  - Category II is defined as drinking $40-59.9$g of pure alcohol on average per day for men and $20-39.9$g for women.
  - A standard drink contains approximately 10g of pure alcohol.

**Data sources**
Core indicator data collected utilizing WHO Steps or similar health interview survey methodology representative of the national or sub-national level. Data sources for expanded indicators are multiple and include government statistics, data from the alcohol industry and data from FAO. Frequency - every 3 -5 years.

**Physical Activity Indicators**

**Core**
Prevalence of respondents classified into two categories of physical activity for children.

- Insufficiently active (defined as not engaging in at least 60 minutes of physical activity on at least 5 days in past week).
- Sufficiently active (defined as engaging in at least 60 minutes of physical activity on at least 5 days in past week).

Prevalence of respondents classified into three categories of total physical activity for adults.

- Low level (insufficiently active) (defined as $< 600$ MET-minutes/week).
- Moderate level (minimally active) (defined as $\geq 600$ MET-minutes/week and $< 3000$ MET-minutes/week).
- High level (sufficiently active) (defined as $\geq 3000$ MET-minutes/week).

**Expanded**
Median time spent in physical activity per day.

- Percentage not engaging in vigorous activity.
  Defined as proportion of population who reports they did no
vigorous activity in leisure or work related physical activity in a typical day.

**Data sources**
Data collected utilizing WHO Steps or similar health interview survey methodology representative of the national or subnational level. Frequency - every 3-5 years.

**Diet Indicators**

**Core**
Prevalence of low fruit and vegetable consumption.

Defined as 1 or more fruit and vegetable servings aligned into four groupings (no fruit and/or vegetables; 1-2 servings; 3-4 servings; ≥5 servings).

**Expanded**
Population level intake of salt.
Energy from trans fatty acids, polyunsaturated and saturated fatty acids.

**Data sources**
Data collected utilizing WHO Steps or similar health interview survey methodology representative of the national or sub-national level. Salt intake is measured by 24 hour urine collection and/or 3 hour timed collection with adjustment for 24 hours (method needs further validation). Energy from the fat is collected from food consumption surveys. In their absence, FAO food balance sheets can be used to give crude estimates at the population level. Frequency - every 3-5 years.

**Other indicators**

**Core**
Use of solid fuel in cooking and heating poorly ventilated dwellings.

**Data sources**
Data collected utilizing WHO Steps or similar health interview survey methodology representative of the national or sub-national level. Frequency - every 3-5 years.

**Metabolic and physiological risk factors**

**Anthropometric Indicators**

**Core**
Low birth weight
Define as weight at birth < 2.5 kg.
BMI (calculated indicator from weight and height).

Prevalence of BMI status of the population defined as:
- **Underweight** - BMI less than 18.5 kg/m² in adults or <-2SD for children 5 – 19 according to WHO growth reference.
- **Normal weight** - BMI 18.5 – 24.9 kg/m² ≥2SD and ≤+1SD for children 5 – 19 according to WHO growth reference.
- **Overweight** - BMI ≥ 25 kg/m² among adults and appropriate
national cut-off points, or >+1SD for children 5 – 19 according to WHO growth reference.
Obese – BMI ≥ 30 kg/m2 among adults and appropriate national cut-off points, or > +2SD for children 5 – 19 according to WHO growth reference.

**Expanded**
Waist circumference.
Prevalence of abdominal obesity.

**Data sources**
Data collected utilizing WHO Steps or similar health interview/examination survey methodology representative of the national or sub-national level. Low birth weight derived from data on child and material health routinely collected at national or sub-national levels. Frequency - Surveys every 3-5 years, low birth weight annually.

**Blood Pressure Indicators**

**Core**
Prevalence of raised blood pressure.
Defined as SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP.
Prevalence of population with raised blood pressure not aware.
Prevalence of population with raised blood pressure not on medication.

**Expanded (calculated indicators)**
Mean systolic blood pressure.
Mean diastolic blood pressure.

**Data sources**
Data collected utilizing WHO Steps or similar health interview/examination survey methodology representative of the national or sub-national level. Frequency - every 3-5 years.

**Blood Glucose Indicators**

**Core**
Prevalence of impaired fasting glycaemia.
Defined as plasma venous value of ≥6.1 mmol/l and <7.0 mmol/l or whole blood value ≥5.6 mmol/l and <6.1 mmol/l.
Prevalence of raised fasting blood glucose.
Defined as plasma venous value ≥ 7.0 mmol/L (126 mg/dl) or capillary whole blood value ≥ 6.1 mmol/L (110 mg/dl) and/or currently on medication for raised blood glucose among adults.

**Expanded**
Prevalence of raised blood glucose 2 hours after an oral glucose load.
Defined as 2-hour oral glucose tolerance test (OGTT) (with 75g glucose) plasma venous glucose ≥11.1 mmol/l (200 mg/dl) or capillary whole blood value ≥ 9.9 mmol/l (179 mg/dl).
Data sources
Data collected utilizing WHO Steps or similar health interview/examination survey methodologies representative of the national or sub-national level. Frequency - every 3-5 years.

Blood Cholesterol Indicators
Core
Prevalence with raised total blood cholesterol.
  Defined as ≥5.2 mmol/L or 200 mg/dl.

Expanded
Mean total blood cholesterol.

Data sources
Data collected utilizing WHO Steps or similar health interview/examination survey methodology representative of the national or sub-national level.

Composite Risks Indicators
Core
Prevalence of population at risk of developing type 2 diabetes within 10 years according to the Diabetes Risk Score.
  Presented in 5 categories (low, slightly elevated, moderate, high and very high).

Prevalence of population with multiple risk factors for NCD.
  5 RFs - current daily smoker, less than 5 servings of fruit and vegetables per day, low level of physical activity, overweight or obese, raised BP).
  Presented in 3 categories (0 RFs, 1 – 2 RFs, 3 – 5 RFs).

Prevalence of population at risk of cardiovascular disease.

Data sources
Risk factor data collected utilizing WHO Steps or similar health interview/examination survey methodology representative of the national or sub-national level. Composite risk indicators are derived utilizing statistical analytical techniques based on measured risk factor levels and risk coefficients derived from longitudinal survey data.

Total 10 year risk of a fatal or non-fatal cardiovascular event (myocardial infarction or stroke) according to age, sex, systolic blood pressure, smoking status, blood cholesterol and presence or absence of diabetes based on WHO/ISH cardiovascular risk prediction charts. Risk levels are categorized as <10%, 10-<20%, 20-<40%, equal or >40%. Other risk prediction charts are available for categorization of risk in Australia, Canada, New Zealand, the United States and Europe.

The Diabetes Risk Score which estimates the population at risk of
developing type 2 diabetes within 10 years is calculated using risk coefficients derived from longitudinal studies in Finland and includes 9 variables - age, BMI, waist circumference, history of elevated blood pressure, physical inactivity, fruit and vegetable consumption, history of elevated blood glucose or gestational diabetes, and family history of type 2 diabetes. Frequency - every 3-5 years.

2.2.2 Outcomes

Mortality Indicators

Core

- all-cause mortality by age, sex & region (urban and rural, or by other administrative areas, as available).

  Total number of deaths utilizing vital registration. If not available use sample registration systems and employ verbal autopsy.

  Cause-specific mortality (urban and rural, or other administrative areas, as available).

  Cause-specific death data utilizing vital registration. If not available use sample registration systems and employ verbal autopsy.

Countries not submitting mortality data regularly are encouraged to do so.

Information on trends in major causes of death causally related to risk factor exposure is available as part of the routine vital statistics data collections maintained by many Member States. In these annual returns, deaths are (in principle) certified by medical practitioners although several factors affect diagnostic quality and comparability.

Because of potential errors in diagnosis, it is also recommended to monitor trends in all cause- (total) mortality using a summary index of mortality measured across all adult ages, or some appropriate subset(s) of ages, to reflect premature deaths, largely due to chronic diseases.

Mortality and population data from vital registration systems are available by age and sex, in order to calculate rates. Where levels of mortality cannot be reliably calculated from existing vital registration, sibling survival questions should be added to routine health surveys or built into new surveys. New methods have been developed to assess levels of mortality from these indirect demographic approaches.

Methodology to be employed to measure mortality will depend upon the capacity of the country. Strengthening vital registration is essential to achieving quality mortality data. However, where vital registration is not available or inadequate from a coverage and/or quality perspective, countries should establish alternative methods such as verbal autopsy as an interim measure, pending improvements to their vital registration system.

Verbal autopsy is a method to collect data on the cause of death by carrying out an interview with relatives of the deceased to assess signs
and symptoms preceding death. WHO has recommended a structured questionnaire to collect this information. All verbal autopsy questionnaires should be reviewed by a physician to ascertain the probable cause of death from the symptom pattern and other information and/or health records provided by the family.

In areas or populations for which no mortality data exist, countries should be encouraged to establish sample registration systems. These sentinel sites should each ideally monitor all vital events in a population of at least 50,000 adults, with a verbal autopsy performed for each death, preferably with physician review. In making this recommendation, it is recognized that verbal autopsy is a ‘blunt instrument’. Guidelines for verbal autopsy have been improving but still need further work. For example, there are concerns as to the comparability of mortality data derived from verbal autopsy across populations or its usefulness in following trends.

About two thirds of countries appear to have in most cases, vital registration systems that appear to capture the total number of deaths reasonably well, but there are significant problems with respect to the accuracy of cause-specific certification and coding, due to excessive use of ill defined codes and other so-called “garbage codes”, which countries frequently use for vague diagnoses such as heart failure, or cancers without primary site determined.

These practices often result in significant under-reporting for some major disease categories such as cardiovascular disease and over reporting others e.g. Alzheimer’s disease and pneumonia. These poor certification practices are widespread, and make it very difficult to reliably estimate disease trends, particularly for major NCD. Without the ability to project cause-specific trends, it becomes difficult to evaluate policy and programme impact. Methods have been developed to adjust for these practices, however, these issues suggest an urgent need for certification training for physicians in countries to reliably certify causes of death using the WHO international certificate of cause of death and applying the rules and procedures of the (current) ICD.

It is recommended that countries be encouraged to submit their mortality and other data to WHO on a regular basis.

Data sources
Total number of deaths and cause-specific death data are collected utilizing vital registration at a national or sub-national level from death certification. Where vital registration in not adequate or where no mortality data exists, countries are encouraged to establish alternative methods of certification such as verbal autopsy. Frequency - on an annual basis.

Morbidity Indicators

Core
- Cancer incidence: total & type
- Diabetes prevalence
Expanded
Cancer by stage
Acute myocardial infarction incidence
Stroke incidence
Coronary heart disease prevalence
Asthma prevalence
Chronic obstructive pulmonary disease prevalence
Liver cirrhosis and chronic liver disease prevalence
Case fatality
- Acute coronary events
- Stroke
- Cancer (cause specific - linkage of cancer registry data with mortality)

Morbidity data is important information for the management of health care systems, particularly planning and evaluation of service delivery. They are useful for estimation of disease burden, gaps in health system capacity and the identification of missed opportunities in prevention. They provide critical information for the evaluation of quality of care and the production of cost estimates of NCD to the health system and individuals. From a planning perspective, they provide necessary information for the identification and magnitude of inequities in relation to prevention and management of NCD in addition to the provision of essential information for priority setting.

Despite their importance, there was a concern about including an extensive list of morbidity indicators as part of the core outcome indicators in a national surveillance system because of issues of feasibility for low-resource settings, given the technical and cost implications. The bulk of the morbidity indicators are recommended therefore as expanded surveillance indicators to be collected through the use of registries or by population surveys, the extent of which would be dependent on economic and technical capacity.

The principle methods for collecting morbidity data include population-based disease registries, hospital-based registries, developed through the utilization of health care information systems, cross sectional surveys, cohort studies and use of record linkage technology, utilizing routinely collected health system and administrative data systems. Clearly, the capacity to employ these types of data collection methods for national NCD surveillance varies from excellent to not at all, depending on the economic and technical resources of a country.

Cancer registries are important because cancer type and staging are critical to planning for health care services, quality of care assessment, and prevention programmes. There was consensus that this would justify the collection of cancer morbidity data through cancer registries as a priority. The inclusion of indicators of acute myocardial infarction, stroke, COPD, asthma, diabetes, kidney and liver disease needs to be based on a countries’ technical and economic capacity plus the priority assigned to these conditions. Surveys and/or hospital-based data are
recommended for the collection of data on these morbidity indicators.

**Data sources**
Incidence is collected through population-based disease registries and/or hospital-based registries where feasible. Record linkage technology can be used to produce incidence from routinely collected health and administrative data systems where technically feasible. Prevalence can be collected utilizing WHO Steps or similar health interview/examination survey methodology representative of the national or sub-national level. Case fatality and survival is derived from statistical analysis of disease registry and hospital-based data. Frequency - every 3-5 years.

**Cost Indicators**

*Expanded*
- Percentage of out of pocket expenditure on general health care.
- Catastrophic expenditure on general health care.
- Health system cost of NCD and risk factors.
- National economic burden of NCD.

**Data sources**
There are very few data sources routinely available at country level that contain these kinds of data and particularly specific to NCD. The indicators will need to be calculated by uniquely designed studies in countries that have the necessary data available and technical capacity to carry out the work. Frequency - every 3-5 years.

2.2.3 **Health System Response**

**Indicators**

*Core*
- Health system capacity
  - Number of trained health human resources for NCD prevention & control (physicians - primary care & specialist; nurses - hospital & community-based, etc.).
  - Defined as number of each specific health professional per 1000 population.
- Per cent of the population with access to essential medicines.
- Per cent of the population with access to essential health care technologies for NCD treatment and control.
- Economic expenditure for NCD.
  - Defined as % of GDP allocated to health.
  - Per capita expenditure on health.

**Data sources**
Health human resource and health care expenditure data are routinely collected by most countries. However, there are many countries that do not have data sources routinely available to monitor health system interventions. These latter indicators will need to be calculated by uniquely designed studies in countries that have the necessary data
available and technical capacity to carry out the work. Frequency - every 3-5 years.

2.2.4 Determinants of Health

Social, cultural and economic factors are major determinants of the health of populations and individuals. Cultural factors can also be of great importance, for example, certain protocols and beliefs that are part of an ethnic group’s cultural practices may protect health, while others can be harmful.

These broader determinants generally influence health through more proximal determinants such as behavioral risk factors, including those that are particularly important for NCD. In turn, behavioral risk factors such as smoking, physical inactivity and poor diet do not develop in isolation, but are strongly influenced by social and economic context. For example, a person’s level of education influences their level of health literacy, while a person’s income directly affects the food and recreation choices available to them.

These factors also operate across the life-course for example, an individual’s educational opportunities as a child will strongly influence their employment prospects and income as an adult, as well as the likelihood that they will start smoking as a child or adolescent. There is evidence that maternal nutrition during fetal development can influence NCD risk later in life.

Clearly, there is significant importance to the inclusion of the broader determinants of health as part of a national NCD surveillance system. It is important not only to monitor some measure of individual SES but also to include broader societal indicators of the socioeconomic climate.

The challenge of adequately incorporating the determinants of health in NCD surveillance is to bring together data from a variety of sources into one platform at the country level rather than trying to duplicate this information which can be obtained from other reliable national information systems. These other data are collected and monitored routinely as part of other processes, and examining these is an important part of building the overall NCD picture in a country, and will assist countries in developing appropriate surveillance approaches and policy responses. A key question is where the responsibility and accountability for implementation and maintenance of this capacity should reside.

Data Sources

Data collected from a variety of sources including utilizing WHO Steps or similar health interview/examination survey methodology representative of the national or sub-national level. The indicators for determinants of health should be analysed by parameters such as age, sex, education and material well being (e.g., utilizing the TFI GATS survey question A4) and will need to be derived using data from other platforms that may exist in a number of relevant government departments/institutions within a country depending upon availability. Frequency - every 3-5 years.
Assessing individual country capacity to address NCD prevention and control in a comprehensive manner and to measure progress over time in dealing with these conditions is a major component of the reporting requirements contained in Objective 6 of the WHO NCD Action Plan. As information of this kind is not readily available, new data collection will be undertaken at the country level through the development of the CCQ. This process builds upon the experience and lessons learned from previous surveys of country capacity for NCD carried out by WHO HQ in collaboration with WHO Regions in 2000/01 and 2005/06.

The assessment of capacity and response to NCD can also be applied at sub-national levels for countries with decentralized governance and/or federated systems and/or those that do not have the capacity to carry out the survey at a national level. The CCQ provides a platform for ongoing assessment of changes in country capacity and response to NCD and builds a country profile that allows immediate feedback. It is anticipated that the CCQ will be completed by a team at country level, led by the NCD focal point in close collaboration with Regional Offices and WHO HQ.

The CCQ provides information on a number of key components of country capacity for NCD prevention and control. The domains of information covered by are the public health infrastructure available to deal with NCD; the status of NCD relevant policies, strategies, action plans and programmes; the existence of health information systems, surveillance activities and surveys; health system capacity for early detection, treatment and care for NCD; and the existence of partnerships and collaborations related to NCD prevention and control.

The CCQ has been developed as a collaborative activity among Regional Offices and NMH staff. A meeting of RAs for NCD was held in February 2009 to consider draft instruments prepared by PAHO and WPRO along with the previous instruments used in 2000 and 2005. This meeting reached agreement on core and expanded questions resulting in the production of the CCQ for global application. It has been reviewed in two Regional Meetings of NCD focal points (SEAR and WPR) and piloted with selected countries (PAHO and AFR).

Remaining is the need to develop an operational plan for implementation along with a plan for data analysis and dissemination of results, in collaboration with Regional and country offices plus some key additions and modifications were identified for inclusion. There was support for the development of a training manual for country personnel who will be responsible for implementation and agreement that the CCQ and supporting manuals need to translated into WHO official languages.

Although the information obtained from the CCQ will be valuable to WHO for tracking NCD activities, it will likely be less useful for countries.
However, it does reinforce to countries the areas of importance for NCD prevention and control and will provide some comparable data with the previous versions used in 2000 and 2005. It is recognized that there is not a great deal of resources available for the survey and it was emphasized that implementation needs to be affordable and technically feasible for countries.

4. WHO NCD Global Status Report 2010

In 2007, the Health Assembly adopted the resolution WHA60.23, entitled “Prevention and Control of Noncommunicable Diseases: Implementation of the Global Strategy”, which requested the Director-General to prepare an Action Plan for the Prevention and Control of Noncommunicable Diseases, to be submitted to the Sixty-first World Health Assembly through the Executive Board; and to provide support where needed for elaboration, intensified implementation, and monitoring of national plans for prevention and control of NCD.

The Action Plan which was approved in 2008, sets out a series of objectives along with actions to be implemented over the six-year period of the Medium-term strategic plan 2008–2013, including performance indicators for Member States, the Secretariat and international partners in order to guide their work on the prevention and control of NCD at the national, regional and global levels. Actions to be completed or initiated during the first two years are specifically identified.

An evaluation of the implementation of the plan and of progress made will be carried out at the mid-point of the plan’s six-year time frame and at the end of the period. A mid-term assessment will offer an opportunity to learn from the experience of the first three years of the plan, taking corrective measures where actions have not been effective and reorienting parts of the plan in response to unforeseen challenges and issues.

From what is known about NCD information systems around the globe, the majority of countries, particularly in low- and middle-income countries, have limited or no capacity for epidemiological monitoring, particularly with cause-specific mortality data or risk factor data (with use of WHO STEPS the global monitoring of risk factors has improved substantially). Very few countries overall routinely monitor policy and programme development, implementation and outcomes when it comes to the health or social service sectors.

As a consequence, the outcomes from the first round of global monitoring of NCD will likely reveal the existence of significant gaps with respect to country and regional capacity to effectively tackle NCD. These gaps are likely to be in information, health policy, health promotion, health services, particularly at the primary care level, and measures to address the determinants of health and equity, particularly with respect to health outcomes and access to care.

A discussion was held regarding the most appropriate focus for the Global Report and the identification of the target audience. It is clear that the report
is to be delivered to the WHA as part of the mandate of Objective 6 of the Action Plan. There were suggestions that the report should also serve as a tool to create awareness of the global NCD epidemic, particularly targeted to public policy-makers, development agencies, NGOs, the philanthropic community and the private sector.

The following draft outline for the report was presented for review and discussion. It received general agreement.

**Draft Outline of WHO NCD Global Status Report 2010**

**Global Burden of NCD in human and fiscal terms (data components)**
Growing epidemic - globally and by Region.
Economic impact at the societal and individual levels with indicators of risk such as impact on GDP, cost of illness, catastrophic expenditure.
Risk to global poverty reduction, economic development and MDG.
Update of disease burden, risk factors and determinants with trends by country.

**Key messages:**
Global health gains achieved in the later part of the twentieth century are at risk.
Every year, NCD erodes the productivity of developing economies.
MDG cannot be achieved without action on NCD.
Urgent action is needed now.

**Evidence for prevention and effective control**
Overview of the massive biological, clinical and public health evidence that support broad intersectoral, integrated and cost-effective public health policy, health system and community-based prevention and control programmes.
Present example of success in dealing with NCD e.g. declining CVD rates in some countries; the tobacco story.

**Key messages:**
Enough is known to take effective action now.
Proven solutions exist now to save millions of lives and prevent premature death in developing countries.

**Response of the international community and Member States**
Summary of the finding from the Global Survey of Country Capacity to address NCD.
Summary of the major gaps that need to be addressed on a global scale to tackle NCD.
Analysis of financial flows and programmatic support for global health by the major international NGOs, philanthropic organizations and PPP’s demonstrating the massive limited funding for action on NCD.

**Key messages:**
The international community is not addressing the bulk of the global
burden of disease. NCD by any measure have a major impact on the poor which requires a serious public health response. In many cases, international community do not support NCD because it is not part of the MDG.

**The way forward: A Call for Action**

Outline the specifics of the Global Strategy and the NCD Action Plan which demonstrates that WHO has the right vision and the correct plan to lead a global assault. Development agencies and the international community need to move to a more balanced policy on international development aid. WHO in partnership with others in the international community has the capacity to scale up to tackle the global epidemic. NCD needs to be incorporated into the global development agenda and MDG.

**Key message:**

With concerted effort on the part of the international community and Member States, it can be done.

**AGENDA**

1. Introduction and objectives of the meeting
2. Review of summary report of the April 2009 Expert Reference Group meeting for NCD surveillance
3. Review of the components of a national surveillance system
4. Discussion and recommendations for core and expanded indicators for national NCD surveillance systems
5. Discussion and recommendations on data sources and methods of collection for core and expanded indicators for national NCD surveillance systems
6. Assessment of national capacity for NCD Prevention and control: a review of the country capacity tool
7. Review of the 2010 NCD Global Status report
8. Discussion and agreement on recommendations and next steps
**Thursday, 20 August 2009**

08:30 – 09:00  Registration

09:00 – 09:30  Welcome, introductions, objectives of the meeting.

09:30 – 10:30  Review of the report of the April 2009 surveillance meeting and identification of gaps

10:30 – 11:00  **Break**

11:00 – 12:00  Review of components of a national NCD surveillance system

12:00 – 13:30  **Lunch**

13:30 – 15:30  Mortality and Morbidity: review of core and expanded indicators; sources of data and methods of collection

15:30 – 16:00  **Break**

16:00 – 18:00  NCD risk factors: review of core and expanded indicators; sources of data and methods of collection

**Friday, 21 August 2009**

09:00 – 9:30  Summary and conclusions of the first day

09:30 - 10:30  Assessment of national capacity for NCD prevention and control: review of country capacity tool and operational issues

10:30 – 11:00  **Break**

11:00 – 12:00  Assessment of national capacity for NCD prevention and control: review of country capacity tool and operational issues

12:00 – 01:30  **Lunch**

01:30 – 15:00  Health system data: review of core and expanded indicators; sources of data and methods of collection

15:00 – 15:30  **Break**

15:30 – 17:30  Determinants of health: review of core and expanded indicators; sources of data and methods of collection
Saturday, 22 August 2009

09:00 – 09:30  Summary and conclusions of the second day

09:30 - 10:30  Review of NCD Global Status report

10:30 – 11:00  **Break**

11:00 – 12:30  Review of NCD Global Status report

12:30 - 13:00  Recommendations and next steps

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