Intercountry Workshop for NCD Surveillance and Monitoring

Seoul, Republic of Korea
3–7 December 2012
Participants of the Intercountry Workshop for NCD Surveillance and Monitoring
3–7 December 2012, Seoul, Republic of Korea
REPORT

INTERCOUNTRY WORKSHOP FOR NCD SURVEILLANCE AND MONITORING

Convened by:

WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR THE WESTERN PACIFIC

NATIONAL CANCER CENTER, KOREA

Seoul, Republic of Korea
3 – 7 December 2012

Not for sale

Printed and distributed by:

World Health Organization
Regional Office for the Western Pacific
Manila, Philippines

March 2013
NOTE

The views expressed in this report are those of the participants in the Intercountry Workshop for NCD Surveillance and Monitoring and do not necessarily reflect the policies of the Organization.

This report has been prepared for the World Health Organization Regional Office for the Western Pacific for the use of governments from Member States in the Region and for those who participated in the Intercountry Workshop for NCD Surveillance and Monitoring held at the National Cancer Center, Seoul, Republic of Korea, from 3 to 7 December 2012.
SUMMARY

Surveillance and monitoring is a critical component of national programmes for prevention and control of Noncommunicable Diseases (NCDs). However, national capacity for surveillance and monitoring of NCD is limited in most of the low- and middle-income countries of the Region. Mortality registration is weak with inadequate registration of deaths and incomplete certification. Disease registries are often not available. Hospital-based data are often not linked and not complete. Risk factor surveys are carried out occasionally and do not give trends over time. Institutional capacity is also limited for undertaking surveillance and monitoring.

Recognizing this priority, an intercountry workshop for NCD surveillance and monitoring was conducted from 3 to 7 December 2012 in Seoul, Republic of Korea, in collaboration with the Korea Centres for Disease Control and the National Cancer Center, with the following objectives:

1. To review the current systems and capacity for NCD surveillance and monitoring, identify gaps and constraints;
2. To discuss the WHO framework for NCD surveillance and monitoring and the global voluntary targets and indicators;
3. To provide an overview in NCD risk factor surveys, disease registries, mortality registration and health system monitoring using WHO tools and approaches; and
4. To identify the next steps for strengthening national NCD surveillance and monitoring frameworks and to support setting up national targets and indicators for NCD prevention and control.

Components of NCD surveillance, country experiences in implementing them and options for further strengthening of national NCD surveillance systems were covered in the workshop. These included risk factor surveys, mortality registration, disease registries specifically cancer registry, community-based surveys, and assessment of health systems response. The need for strengthening national NCD surveillance systems was emphasized in relation to monitoring the progress towards the set of global voluntary targets.
## CONTENTS

1. INTRODUCTION ........................................... 1
   1.1 Background ........................................... 1
   1.2 Objectives ........................................... 1
   1.3 Participants ........................................ 1
   1.4 Organization ........................................ 2
   1.5 Opening ceremony ..................................... 2

2. PROCEEDINGS ........................................... 2
   2.1 Session 1 – Setting the scene .......................... 2
   2.2 Session 2 – Risk factor surveys ........................ 4
   2.3 Session 3 – Mortality registration and cancer registry .. 4
   2.4 Session 4 – Community based surveys: Experience of Republic of Korea .. 5
   2.5 Session 5 – Health system response .................... 5
   2.6 Session 6 – Closing ceremony .......................... 6

3. CONCLUSIONS ........................................... 6
   3.1 Conclusions ........................................... 6
   3.2 Recommendations ..................................... 6

ANNEXES

<table>
<thead>
<tr>
<th>ANNEX</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANNEX 1</td>
<td>LIST OF PARTICIPANTS, TEMPORARY ADVISERS RESOURCE PERSONS, OBSERVERS AND SECRETARIAT</td>
</tr>
<tr>
<td>ANNEX 2</td>
<td>PROGRAMME OF ACTIVITIES</td>
</tr>
<tr>
<td>ANNEX 3</td>
<td>DAY 1 COUNTRY PRESENTATIONS - SITUATIONAL ANALYSIS</td>
</tr>
<tr>
<td>ANNEX 4</td>
<td>DAY 2 COUNTRY PRESENTATIONS - RISK FACTOR SURVEYS</td>
</tr>
<tr>
<td>ANNEX 5</td>
<td>DAY 3 COUNTRY PRESENTATIONS - MORTALITY REGISTRATION AND DISEASE REGISTRIES</td>
</tr>
<tr>
<td>ANNEX 6</td>
<td>DAY 4 COUNTRY PRESENTATIONS - HEALTH SYSTEM RESPONSE</td>
</tr>
<tr>
<td>ANNEX 7</td>
<td>DAY 5 COUNTRY PRESENTATIONS - DATA TO ACTION</td>
</tr>
<tr>
<td>ANNEX 8</td>
<td>EVALUATION OF THE CONSULTATION</td>
</tr>
<tr>
<td>ANNEX 9</td>
<td>SPEAKER PRESENTATIONS</td>
</tr>
<tr>
<td>ANNEX 10</td>
<td>PARTICIPANT'S WORKBOOK</td>
</tr>
</tbody>
</table>

Keywords

---

**CONTENTS**
1. INTRODUCTION

1.1 Background

NCD prevention and control is a regional and global priority. Regional Committee Resolution WPR/RC62.R2 called for development of a regional action plan for NCD prevention and control for 2014-2018, that is integrated into the global monitoring framework and is consistent with voluntary global targets and indicators to be developed by WHO by the end of 2012.

National capacity for surveillance and monitoring of NCD is limited in most of the low- and middle-income countries of the Region. Mortality registration is weak with inadequate registration of deaths and incomplete certification. Disease registries are often not available. Hospital-based data are often not linked and not complete. Risk factor surveys are carried out occasionally and do not give trends over time. Institutional capacity is also limited for undertaking surveillance and monitoring.

Recognizing this priority, an intercountry workshop for NCD surveillance and monitoring was conducted from 3-7 December 2012 in Seoul, Republic of Korea, in collaboration with the Korea Centres for Disease Control and the National Cancer Center (NCC).

1.2 Objectives

(1) To review the current systems and capacity for NCD surveillance and monitoring, identify gaps and constraints;

(2) To discuss the WHO framework for NCD surveillance and monitoring and the global voluntary targets and indicators;

(3) To provide an overview in NCD risk factor surveys, disease registries, mortality registration and health system monitoring using WHO tools and approaches; and

(4) To identify the next steps for strengthening national NCD surveillance and monitoring frameworks and to support setting up national targets and indicators for NCD prevention and control.

1.3 Participants

The workshop was attended by 15 delegates (NCD programme managers, national officers in Ministry of Health responsible for health statistics, and representatives from technical institutions dealing with national NCD surveys) from Cambodia, Lao People’s Democratic Republic, Mongolia, the Philippines, and Viet Nam. Three WHO staff from the Western Pacific Regional Office (WPRO), one from the WHO Division of Pacific Technical Support (DPS) and one from WHO Headquarters in Geneva, Switzerland, formed the Secretariat of the workshop. The list of participants, temporary advisers, resource persons and Secretariat members are in Annex 1.
1.4 Organization

The workshop comprised five sessions and the opening and closing ceremonies. After the introductory presentations to set the scene of the workshop, sessions focused on different areas of surveillance particularly on risk factor surveys, mortality registration, cancer registry, community-based surveys, health system response and next steps. These sessions included presentations by WHO Secretariat and Country Representatives. Participants were engaged in group discussions using a workbook which covered options for strengthening comprehensive NCD surveillance framework, risk factor surveys, mortality registration and disease registries, and utilizing data for actions. The programme originally included a visit to Korea Centers for Disease Control and Prevention (KCDC) but due to inclement weather, representatives from KCDC conducted their lecture in NCC. A full outline of the programme is presented in Annex 2.

1.5 Opening ceremony

The workshop was opened by Dr Jin Soo Lee, President, NCC, Republic of Korea. Dr Lee described how the National Cancer Centre through the past decade has contributed to the reduction of cancer incidence and mortality rates in the Republic of Korea through cancer control, specialized cancer research and treatment. He recognized the limitations in low- and middle-income countries in NCD surveillance, but was hopeful to see strengthening of NCD surveillance in the health agenda as a result of the workshop.

Dr Hai-Rim Shin, Team Leader, Noncommunicable Diseases and Health Promotion (NHP), WPRO, thanked NCC Republic of Korea for hosting the workshop. She noted the importance of strengthening surveillance system in countries and how this can be utilized to translate data to action.

2. PROCEEDINGS

2.1 Session 1 – Setting the scene

Dr Hai-Rim Shin presented the objectives and overview of the workshop. Dr Shin started with a snapshot of NCD death rates in the Region. She started on the significant milestones in NCD prevention and control globally through the United Nations General Assembly High Level Meeting on NCDs in September 2011 and the Regional Committee Meeting in October 2011 which intensified the efforts. Dr Shin also emphasized the key areas where action is needed to prevent and control NCD: national multi-sectoral policy and plan within the national health and development plan; population based, multi-sectoral actions for risk reduction; health system strengthening for NCD prevention and management; surveillance, monitoring and reporting; and sustainable partnerships and advocacy.

Ms Leanne Riley, Team Leader, Surveillance, Prevention of NCDs Department, WHO Geneva, presented the comprehensive framework for NCD prevention and control. She discussed in detail the significant historical and political milestones towards NCD prevention and control globally. She also gave details on the NCD surveillance framework, basis, criteria and process to develop global set of voluntary targets, and their application in the context of countries.

Dr Jun Gao, Team Leader, Health Information, Evidence and Research, WHO WPRO, described the diversity of countries in the Region in terms of population size and economic development and how these affects the health situation and systems in countries. This further
translates into limitation of health information systems. He presented a number of actions that can be done to address these challenges such as improving completeness and accuracy of facility-based reported data, establishing a surveillance system with harmonized surveys and strengthening information communication technology (ICT) in health information systems.

Dr. Cherian Varghese, Senior Medical Officer (NCD), WHO WPRO, presented the overview of NCD prevention and control in the Western Pacific particularly on surveillance. He started by describing the unique characteristics of NCD surveillance such as the relative rarity of events or cases compared to communicable diseases which are reportable, lack of uniform case definition, the need for unique identification number, importance of the denominator in estimating parameters of the population, varying infrastructures and the resource intensiveness of surveys.

Dr. Varghese presented the tools and resources available to support NCD surveillance and monitoring. WHO has standardized tools for adult and youth surveys such as the STEPwise surveillance for NCD risk factors (GSHS) and the Global School-based Student Health Survey (GSHS) that were conducted in many countries in the Region. Another important source of data on morbidity was hospitals and health facilities, however, almost similar issues on unique identifier, limited resources, and data analysis, to name a few, has to be considered. Situation of cancer registries, mortality registration, and health system response were also covered. In addition, the use of these data to convince policy makers to enact laws is a very important aspect that should be considered after conducting these surveys.

In the afternoon session, countries presented their current status and options to strengthen comprehensive NCD surveillance framework (Annex 3). This session has identified challenges and opportunities as presented in Table 1. Group work on timelines provided a snapshot of NCD surveillance and monitoring in countries highlighting the milestones of countries for the last 5 years. The market place activity presented the key findings in NCD surveillance in countries. Participants had a campus tour in the Korea National Cancer Centre.

Table 1. Common challenges and opportunities for NCD surveillance and monitoring

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• National surveillance system not established/institutionalized</td>
<td>• Increasing national commitment</td>
</tr>
<tr>
<td>• Separated/duplicated surveys</td>
<td>• NCD prevention and control being a global and regional agenda</td>
</tr>
<tr>
<td>• No subnational data on NCD risk factors</td>
<td>• Development of NCD-related policies</td>
</tr>
<tr>
<td>• Lack of timely reports (mortality data, cancer incidence, etc.)</td>
<td>• Health information system strengthening</td>
</tr>
<tr>
<td>• Different focal points for NCD surveillance activities</td>
<td>• Establishment of disease registries</td>
</tr>
<tr>
<td>• Limited resources (funds, manpower) and sustainability</td>
<td></td>
</tr>
</tbody>
</table>
2.2 Session 2 – Risk factor surveys

Ms Leanne Riley presented the overview of risk factor surveillance in adults and youth, as well as the other risk factor surveillance tools. The STEPwise approach to surveillance (STEPS) is an adult risk factor surveillance designed for implementation in low- and middle-income countries. It collects information on the behavioural and biological risk factors using three different levels of risk factor assessment: questionnaire (STEP 1), physical measurements (STEP 2) and blood samples (STEP 3). It also has 3 modules (core, expanded and optional) that countries can choose from in implementing their survey depending on their resources. Ms Riley discussed also in detail the questionnaire being used in STEPS and the upcoming developments which include the revision to version 3.0 in 2013, age range and sampling parameters, eSTEPS platform update and the revisions in the manual to reflect the changes.

The Global school-based student health survey (GSHS) is a youth risk factor surveillance which focuses on grades with students aged 13 – 17 years. There are 10 core questionnaire module topics: alcohol use, dietary behaviours, drug use, hygiene, mental health, physical activity, protective factors, sexual behaviours that contribute to HIV infection, other STI, and unintended pregnancy, tobacco use, and violence and unintentional injury. Each module contains 3 to 7 questions. Countries must use at least 6 of the 10 modules.

Ms Riley also presented briefly the Global School Health Policies and Practices Surveillance (Global SHPPS) which collects information at the school level about the school health policies and practices focusing on healthy and safe environment, health services, nutrition services, health education and physical education. Other tools for risk factor surveillance mentioned were the Global Youth Tobacco Survey (GYTS), Global adult tobacco survey (GATS), Tobacco questions for surveys (TQS), National nutrition surveys, Food frequency surveys, Global Physical Activity Questionnaire (GPAQ) and International Physical Activity Questionnaire (IPAQ).

Dr Colin Bell, Technical Officer, NCD, WHO DPS, provided more details on planning and preparing a STEPS survey which include identification of personnel, scope of the survey, methodology, timeline, budget, implementation plan, ethical approval, questionnaire, equipment, planning of field work, pilot testing, and planning of post-field work activities. Ms Riley then provided the same details for implementing the GSHS. Participants conducted a mini STEPS survey in pairs (changing roles of respondent and interviewer) and the filled out questionnaires were submitted to the Secretariat.

In the group work, country groups discussed the options in strengthening risk factor surveillance, as presented in Annex 4.

2.3 Session 3 – Mortality registration and cancer registry

Mr Jun Gao, Team Leader, Health Information, Evidence and Research, WHO WPRO, started the session by introducing the main sources of mortality data such as vital registration systems, sample registration systems and demographic surveillance systems. He also presented other information that can be obtained from these systems, other than the mortality data, and the advantages if these systems will be strengthened through improving completeness, quality of certification, availability and timeliness, use of data and reliability of data. Relevant materials and tools (available online) to improve mortality registration were provided.

Dr Joon Hyun Hong, Member of the WHO-Family of International Classification (FIC) Education and Implementation Committee (EIC), then introduced the International Statistical Classification of Diseases (ICD). It is the oldest and internationally-comprehensive health
statistics, published by WHO in 1948 and maintained by the WHO-FIC, which is the standard in international mortality classification since late 19th century. She presented the death registration system in Korea that started in 1938 and the laws related to death report, certificate and statistics. Dr Hong also presented the WHO Family of International Classifications (WHO FIC) and showed the development in reporting of deaths from 1950-2007 in all WHO regions, as well as the discrepancy of reported deaths compared to estimated deaths.

After the presentations, Dr Gao presented an interactive self-learning tool on ICD-10 (available in http://apps.who.int/classifications/apps/icd/ICD10Training/) which is designed for self-learning and classroom use. It has two versions of the training tool: the full ICD-10 training that contains all modules and the Cause of death certificate version which is for persons that fill in causes of death on a death certificate. Participants were guided and were able to navigate the tool.

Dr Hai-Rim Shin presented the essential components of cancer registration and cancer registry planning. Dr Brenda Edwards, from the Division of Cancer Control and Population Sciences, National Cancer Institute-USA, presented the Surveillance, Epidemiology and End Results (SEER) program which has been in existence since 1973 after the National Cancer Act in 1971. Dr Young-Joo Won, Division of Cancer Registration and Surveillance, NCC Korea, presented about coding of cancer cases using the International Classification of Diseases for Oncology, Third edition (ICD-O-3) which is a specific code set for neoplasms within ICD which is for all diseases. Dr Aesun Shin, Molecular Epidemiology Branch, Research Institute Cancer Registration & Statistics Branch, National Cancer Control Institute, NCC Korea, presented the development of population attributable fraction of risk factors for cancer in Korea using cancer registry and other data. Dr Kyu-Won Jung, Cancer Registration & Statistics Branch National Cancer Control Institute, NCC Korea, then presented CanReg5 which is the tool used to input, store, check and analyze cancer registry data.

Country groups discussed the options for strengthening mortality registration and disease registries, as presented in Annex 5.

2.4 Session 4 - Community based surveys: Experience of Republic of Korea

Dr Kyungwon Oh, Director, Division of Health and Nutrition Survey (DHS), Korea Centers for Disease Control and Prevention (KCDC), presented the historical and technical development of the Korea National Health and Nutrition Examination Survey (KNHANES) since 1998. She also elaborated its difference from other health surveys conducted in Korea and their future plans on how to further improve the survey and maximize the use of the information that they obtain. Dr Yoonjung Kim, Principal Researcher, DHS, KCDC, presented the background of the Korea Web-based Youth Risk Behaviour Survey, while Dr Yangwha Kang, Principal Researcher of the Division of Disease Control, KCDC, presented the community health interview survey in Korea.

In country group work, the options for strengthening health system response in their respective countries were discussed (Annex 6).

2.5 Session 5 - Health system response

Ms Riley presented the assessment of national systems capacity and readiness for NCD response with a focus on health systems, starting off with the indicators and targets specifically for national systems response included in the comprehensive global monitoring framework for NCDs. WHO has done three waves of the NCD country capacity assessment in 2000/2001, 2005/2006, and 2010. The questionnaire has five specific areas that are being assessed: public
health infrastructure for NCD; status of NCD relevant policies, strategies, action plans and programmes; health Information systems, surveillance and surveys; health systems capacity for NCD early detection, treatment and care; and health Promotion, partnerships and collaboration.

Ms Riley also presented another tool which measures health systems strengthening, the Service Availability and Readiness Assessment (SARA). It provides information needed to track how health systems respond to increased inputs and improved outputs and impact on health outcomes, specifically on the physical presence of services (availability) and the capacity to deliver services (readiness). She also elaborated further on the Global SHPPS.

Dr Bell presented the results of mini STEPS survey conducted among the workshop participants, as well as the challenges and limitations and the next steps.

Country groups reflected on the current situation of NCD data presentation and its dissemination in their countries (Annex 7) and had an exercise on prioritizing NCD interventions.

2.5.1 Evaluation

An evaluation of the consultation was conducted using a structured questionnaire and the assessment using a scale of 1-10 (in ascending order of impression and success achieved in the workshop) (Annex 8). The overall impression of the workshop was generally regarded as high (24% gave a complete score of 10, while 62% rated it as 9). Most of the participants also valued the information learned in the sessions and the experiences of other countries. Participants were also asked how they can strengthen surveillance and monitoring in their countries and the additional support needed to do the work.

2.6 Session 6 - Closing ceremony

Dr Hai-Rim Shin thanked the participants for their active participation during the workshop and looked forward to the application of the learning in their respective countries. She also expressed gratitude to the NCC Republic of Korea for hosting the workshop.

3. CONCLUSIONS

3.1 Conclusions

The objectives of the intercountry workshop for NCD surveillance and monitoring were met and the workshop successfully emphasized the pressing need for a comprehensive global monitoring framework for NCD in countries considering all areas of surveillance. Participants also learned from the exchange of experiences and expertise provided by the facilitators.

3.2 Recommendations

3.2.1 Countries have the option to do the following:

(1) Develop and/or strengthen their national NCD surveillance framework.

(2) Strengthen capacity of national institutions to conduct NCD surveillance with adequate resources.
(3) Conduct adult and youth risk factor surveys using standardized tools at least once in 5 years.

(4) Strengthen vital registration systems with emphasis on cause-of-death reporting and ICD coding.

(5) Develop and/or strengthen cancer registries.

(6) Assess health system capacity periodically.

(7) Monitor policies for NCD prevention and control and their implementation.

3.2.2 WHO may do the following:

(1) Provide technical support for strengthening national NCD surveillance framework.

(2) Provide support for capacity building in NCD surveillance.

(3) Integrate individual risk factor surveys to optimize data collection.

(4) Support use of data for monitoring.
LIST OF PARTICIPANTS, RESOURCE PERSONS, REPRESENTATIVE/OBSERVER, AND SECRETARIAT

I. PARTICIPANTS

Dr PRAK Piseth Raingsey, Director, Preventive Medicine Department, Ministry of Health, No. 151-153, Boulevard, Kampucheaekrom, Phnom Penh, Cambodia, Tel. No.: (855) 12862022, E-mail: pisethsey@yahoo.com; pisethrainsey@gmail.com

Dr KHOL Khemrary, Chief, Bureau of Health Information, Planning and Health Information Department, Ministry of Health, No. 34 Street 468, Sangkat Toul Tompoung 2, Khan Chamkarmorn, Phnom Penh, Tel. No.: (855) 12447480, E-mail: k_khemrary@yahoo.com

Dr Vannareth MEY, Deputy of Secretariat, University of Health Sciences, #73 Monivong, Phnom Penh, Tel. No.: 016957954, E-mail: vannarethlove@yahoo.com

Dr Phisith PHOUTSAVATH, Deputy Director General, Health Care Department, Ministry of Health, Dondeng Village Chanthabouly District, Vientiane, Tel. No.: (85620) 55527721, Fax No.: (85621) 217848, E-mail: psavath@gmail.com

Dr Snong THONGSNA, Deputy Director, National NCD Coordinator, Mittaphab Hospital, Phontong Road, Chanthabury D, Vientiane, Tel. No.: (85621) 71003; 02022210589, E-mail: thongsna@yahoo.com

Ms Alivanh PHANLAVONG, Technical Staff, Responsible for Health Information System, Statistics Division, Department of Planning, and International Cooperation, Ministry of Health, Vientiane, Tel. No.: (85622) 22478184, Fax No.: (856) 244101, E-mail: P_alivanh@yahoo.com

Dr Oyunbileg JANCHIV, Director-General, National Center for Public Health, Ministry of Health of Mongolia, Peace Avenue-17, Ulaanbaatar-49, Mongolia, Tel. No.: (976) 11458645, Fax No.: (976) 11458645, E-mail: jobileg@gmail.com

Mr Bat-Erdene CHULUUNBAT, Director, Center for Health Development, Enkhtaivan Street, 13B, Ulaanbaatar 210648, Tel. No.: (976) 11325540, Fax No.: (976) 11325540, E-mail: cbaterdene@yahoo.com; baterdene@chol.moh.mn

Dr Baigalmaa DANGAA, Officer-In-Charge of Policy Coordination, NCD Prevention and Control, Division of Public Health, Department of Policy Implementation and Coordination, Ministry of Health of Mongolia, Government Building VIII, Olympic Street 2, Sukhbaatar District, Ulaanbaatar 14210, Tel. No.: (976) 88084452, Fax No.: (976) 11320916, E-mail: baigalmaa12@yahoo.com

Dr Maria Irma ASUNCION, Director III (Officer-In-Charge-Director IV), Department of Health, National Center for Disease Prevention and Control, San Lazaro Compound, Rizal Avenue, Sta Cruz, Manila, Tel. No.: (632) 7090955, Fax No.: (632) 7110380, E-mail: doc_irma@yahoo.com

Dr Agnes Benegas-SEGARRA, Division Chief, Surveys, Risk Assessment and Evaluation Division, National Epidemiology Center, Department of Health Philippines, Building 19 San Lazaro Compound, Tayuman, Sta Cruz, Manila, Philippines, Tel. No.: (632) 6517800 extn 2928, Fax No.: (632) 7456076, E-mail: agnes_segarra@yahoo.com

Ms Charmaine DUANTE, Senior Science Research Specialist, Food and Nutrition Research Institute, Department of Science and Technology, General Santos Avenue, Bicutan, Taguig City, Tel. No.: (632) 3842877, Fax No.: (632) 8391843, E-mail: caduante@yahoo.com

Dr Thi Thi Tho NGUYEN, Deputy Chief, Department of Community Health, and Network Coordination, National Institute of Hygiene and Epidemiology, No. 1 Yersin Street Hai Ba Trung District, Hanoi, Tel. No.: (844) 439710, Mobile: (844) 936996386, Fax No.: (844) 439718490, E-mail: poernhnvn@yahoo.com
Mr Quoc Bao TRAN, Deputy Head of Division of NCD Control, and School Health, General Department of Preventive Medicine, Ministry of Health, No. 135 Nui Truc Street, Ba Dinh District, Hanoi, Tel. No.: (844) 912170778, E-mail: baomph@gmail.com

Dr Le Van Ngoc TRUONG, Medical Officer, Department of the Medical Service Administration, Ministry of Health, Viet Nam, 138 A. Ginagvo Street, Badinh District, Hanoi, Tel. No.: (844) 6273 2445, Fax No.: (844) 6273 2289 or 3736 7588, E-mail: ngoctruongmoh@gmail.com

2. RESOURCE PERSONS

Ms Marie Clem B. CARLOS, Research Assistant, Department of Epidemiology and Biostatistics, University of the Philippines, 103 P. Mariano Street Ususan, Taguig City, Philippines, Tel. No.: (632) 6426157, Mobile: (63) 9267585082, E-mail: clemcarlos@yahoo.com

Dr Brenda K. EDWARDS, Senior Advisor for Cancer Surveillance, Division of Cancer Control and Population Sciences, National Cancer Institut, 6116 Executive Blvd. Suite 504 Bethesda, Maryland, United States of America Tel. No.: (301) 4968506, Fax No.: (301) 4804077, E-mail: edwardsb@mail.nih.gov

Dr Joon Hyun HONG, WHO-FIC Education and Implementation, Committee (EIC) member Board member of International Federation of Health Information Management Associations (IFHIMA), Republic of Korea, Tel. No.: +82-31-973-3663, E-mail: jhong42@hanmail.net

Dr JUN Byung-Yool, Director, KCDC, Address: Osong Health Technology Administration Complex, 187 Osongsanengmyeong2(i)-ro, Yeonjae-ri, Osong-gun, Chungcheongbuk-do, Republic of Korea 363-951, Tel. No.: +82-43-719-7000, Fax No.: +82-43-719-7003, E-mail: byjun@korea.kr

Dr Yangwha KANG, Principal Researcher, Division of Chronic Disease Control, KCDC Address: Osong Health Technology Administration Complex, 187 Osongsanengmyeong2(i)-ro, Yeonjae-ri, Osong-eup, Cheongwon-gun, Chungcheongbuk-do, Republic of Korea 363-951, Tel. No.: +82-43-719-7395 Fax No.: +82-43-719-7458

Dr Yoonjung KIM, Principal Researcher, Division of Health and Nutrition Survey, KCDC Address: Osong Health Technology Administration Complex, 187 Osongsanengmyeong2(i)-ro, Yeonjae-ri, Osong-eup, Cheongwon-gun, Chungcheongbuk-do, Republic of Korea 363-951, Tel. No.: +82-43-719-7505 Fax No.: +82-43-719-7527, E-mail: kwoh27@korea.kr

Dr Jin Soo LEE, President, National Cancer Center, Address: 323 Ilsan-ro, Ilsandong-gu, Goyang-si, Gyeonggi-do, 410-769, Republic of Korea, Tel. No.: +82-31-920-1510, Fax No.: +82-31-920-1511, E-mail: jslee@ncc.re.kr

Dr OH Kyungwon, Director, Division of Health and Nutrition Survey, KCDC Address: Osong Health Technology Administration Complex, 187 Osongsanengmyeong2(i)-ro, Yeonjae-ri, Osong-eup, Cheongwon-gun, Chungcheongbuk-do, Republic of Korea 363-951, Tel. No.: +82-43-719-7460 Fax No.: +82-43-719-7527, E-mail: kwoh27@korea.kr

3. OBSERVER/REPRESENTATIVE

Dr Ann CHAO, Director, Cancer Research Programs, East Asia, Center for Global Health, National Cancer Institute 55 An Jia Lou Road, Beijing, China 100600, Tel. No.: (8610) 85313986, Fax No.: (8610) 65329908 E-mail: ChaoA@mail.nih.gov

4. SECRETARIAT

Dr Hai-Rim SHIN, Team Leader, Noncommunicable Diseases and Health Promotions, WHO Regional Office for the Western Pacific, P.O. Box 2932 1000 Manila, Philippines, Tel. No.: (632) 5289860, Fax No.: (632) 5260279 E-mail: shin@wpro.who.int

Dr Cherian VARGHESE (Responsible Officer), Senior Medical Officer, Noncommunicable Diseases WHO Regional Office for the Western Pacific, P.O. Box 2932 1000 Manila, Philippines Tel. No.: (632) 5289866, Fax No: (632) 5211036, E-mail: varghesec@wpro.who.int
Mr Jun GAO, Team Leader, Health Information, Evidence and Research, WHO Regional Office for the Western Pacific, P.O. Box 2932 1000 Manila, Philippines, Tel. No.: (632) 5289812, Fax No: (632) 5211036 E-mail: gaoj@wpro.who.int

Dr Sam Ath KHIM, Technical Officer (NCD), National Professional Officer, WHO Representative Cambodia No. 177-179 corner Streets Pasteur(31) and 254, Sankat Chak Tomouk, Khan Daun Penh, Phnom Penh, Cambodia Tel. No.: (855) 23 216610, Fax No: (855) 23-216211, E-mail: khims@wpro.who.int

Dr Phonesavanh KEOMANYSONE, Technical Officer (NCD), National Professional Officer, WHO Representative Lao PDR, 125 Saphanhang Road, Unit 5, Ban Saphanxhongtao, Sisattanak District, Vientiane, Lao People’s Democratic Republic, Tel. No.: (856) 3539024, Fax No: (856) 353905, E-mail: keomanysonep@wpro.who.int

Dr Tsogzolmaa BAYANDORJ, National Professional Officer (Noncommunicable Diseases), WHO Representative Mongolia, Ministry of Health, Government Building-8, Ulanbaatar, Mongolia, Tel. No.: (976) 11327870 Fax No: (976) 11324683, E-mail: bayandorjt@wpro.who.int

Dr John Juliard GO, National Programme Officer (Noncommunicable Diseases), WHO Representative Philippines National Tuberculosis Centre Building, First Floor, Building 3, Department of Health, San Lazaro Hospital Compound, Sta Cruz, Manila, Philippines, Tel. No.: (632) 5289063, Fax No: (632) 7313914 E-mail: goj@wpro.who.int

Dr Andrew Colin BELL, Technical Officer, Noncommunicable Diseases, WHO South Pacific, Level 4 Provident Plaza One, Downtown Boulevard, 33 Ellery Street, Suva, Fiji, Tel. No.: (679) 3234166 Fax No No: (679) 3234166 and 3234177, E-mail: bella@wpro.who.int

Dr Due Truong LAI, National Professional Officer, Non-communicable disease (NCD) prevention and control The World Health Organization Representative Office in Viet Nam, Add: 63 Tran Hung Dao street, Hanoi, Viet Nam Tel. No.: (8443) 9433734 ext 83864, Email: laid@wpro.who.int

Ms Leanne RILEY, Team Leader Surveillance, Department of Chronic Diseases and Health Promotion World Health Organization, Geneva, Switzerland, Tel. No.: (4122) 7914319, Fax No: (4122) 7910746 E-mail: riley1@who.int

Dr Young-Joo WON, Head, Division of Cancer Registration & Surveillance, Cancer Registration and Statistics Branch, National Cancer Control Institute, National Cancer Center, 323 Ilsan-ro, Ilsandong-gu, Goyang-si, Gyeonggi-do, 410-769, Republic of Korea, Tel. No.: +82-31-920-2015, Fax No.: +82-31-920-2179 E-mail: astra67@ncc.re.kr

Dr Kyu-Won JUNG, Chief, Cancer Registration & Statistics Branch, National Cancer Control Institute, National Cancer Center, 323 Ilsan-ro, Ilsandong-gu, Goyang-si, Gyeonggi-do, 410-769, Republic of Korea Tel. No.: +82-31-920-2175, Fax No.: +82-31-920-2179, E-mail: ara@ncc.re.kr

Dr Aesun SHIN, Senior Scientist, Molecular Epidemiology Branch, Division of Cancer Epidemiology and Prevention Research Institute, National Cancer Center, 323 Ilsan-ro, Ilsandong-gu, Goyang-si, Gyeonggi-do, 410-769, Republic of Korea, Tel. No.: +82-31-920-2571, Fax No.: +82-31-920-2579, E-mail: shina@ncc.re.kr

Ms Minji JOUNG, Public Relations & International Affairs Team, Office of Public Relations & Collaboration National Cancer Center, 323 Ilsan-ro, Ilsandong-gu, Goyang-si, Gyeonggi-do, 410-769, Republic of Korea Tel. No.: +82-31-920-1934, Fax No: +82-31-920-1939, E-mail: kpmj29@ncc.re.kr
### PROGRAMME OF ACTIVITIES

**Monday, 3 December 2012**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00-09:30</td>
<td>Registration</td>
</tr>
<tr>
<td>09:30-09:50</td>
<td><strong>(1) Opening ceremony</strong>&lt;br&gt; Welcome address</td>
</tr>
<tr>
<td>09:50-10:20</td>
<td>Opening address</td>
</tr>
<tr>
<td>10:20-10:30</td>
<td>Group photo and mobility break</td>
</tr>
<tr>
<td>10:20-10:30</td>
<td><strong>(2) Setting the scene</strong>&lt;br&gt; Self-introduction of participants</td>
</tr>
<tr>
<td>10:30-10:45</td>
<td>NCD prevention and control: Regional overview</td>
</tr>
<tr>
<td>10:45-11:00</td>
<td>Comprehensive framework for NCD prevention and control</td>
</tr>
<tr>
<td>11:00-11:15</td>
<td>Health information systems in the Region</td>
</tr>
<tr>
<td>11:15-11:30</td>
<td>Surveillance for NCD: Challenges and opportunities</td>
</tr>
<tr>
<td>11:30-12:00</td>
<td>Discussion</td>
</tr>
<tr>
<td>12:00-13:30</td>
<td><strong>Lunch</strong></td>
</tr>
<tr>
<td>13:30-15:00</td>
<td>Country presentations: Cambodia, Lao PDR, Mongolia, Philippines, Viet Nam</td>
</tr>
<tr>
<td>15:00-15:30</td>
<td>Timeline</td>
</tr>
<tr>
<td>15:30-16:00</td>
<td><strong>Mobility break</strong></td>
</tr>
<tr>
<td>16:00-17:00</td>
<td>Market place (Display key findings from NCD surveillance in countries)</td>
</tr>
<tr>
<td>17:00-18:00</td>
<td>KNCC Campus tour</td>
</tr>
<tr>
<td>18:00-19:00</td>
<td>Reception</td>
</tr>
</tbody>
</table>

#### ANNEX 2

- **Dr Jin Soo Lee**<br>President, National Cancer Center<br>Republic of Korea
- **Dr Hai-rim Shin**<br>WHO WPRO

- **Dr Hai-Rim Shin**
- **Ms Leanne Riley**<br>WHO Headquarters
- **Dr Jun Gao**<br>WHO WPRO
- **Dr Cherian Varghese**<br>WHO WPRO
Tuesday, 4 December 2012

(3) Risk factor surveys
09:00-09:15 Recap of Day 1
09:15-09:30 WHO tools for exposure assessment Ms Leanne Riley
09:30-09:45 Current situation Dr Cherian Varghese
09:45-10:00 Discussion Ms Marie Clem Carlos
10:00-10:30 Mobility break
10:30-12:00 STEPwise approach to surveillance (STEPS) Ms Leanne Riley

12:00-13:00 Lunch Dr Colin Bell
WHO South Pacific

13:00-15:30 Global school-based Student Health Survey (GSHS) and other surveys Ms Leanne Riley

15:30-16:00 Mobility break
16:00-17:00 County group work 1: Options for risk factor surveillance
17:00-17:30 Group presentation

Wednesday, 5 December 2012

(4) Mortality registration and disease registries
09:00-09:15 Recap of Day 2
09:15-09:45 Mortality registration Dr Jun Gao
09:45-11:00 Training on mortality registration Dr. Jun Gao/NCC, Republic of Korea
11:00-11:30 Mobility break Dr Hai-Rim Shin
11:30-12:00 Cancer registration
12:00-13:00 Lunch
13:00-15:00 Training on cancer registration NCC, Republic of Korea
15:00-15:30 Mobility break
15:30-16:30 Country group work 2: Options to strengthen mortality registration and disease registries
16:30-17:00 Group presentation
Thursday, 6 December 2012

(5) Health system response and community-based surveys

07:30-09:30  Travel from hotel to KCDC (Osong)
09:30-10:00  Mobility break
10:00-10:10  Opening remarks
10:10-10:40  Korea National Health and Nutrition Examination Survey (KNHANES)
10:40-11:05  Web-based youth risk behaviour survey
11:05-11:30  Community health interview survey

11:30-11:50  Discussion
11:50-12:10  Travel to restaurant (Cheongju)
12:10-13:30  Lunch
13:30-14:30  Travel to field survey site (Cheonan)
14:30-16:00  KNHANES Mobile Examination Center tour
16:00  Travel back to hotel

Friday, 7 December 2012

(6) National targets and next steps

09:00-09:15  Recap of Day 3 and 4
09:15-09:30  Set of voluntary global targets and indicators for NCD
09:30-10:00  Development of national targets
10:00-10:30  Mobility break
10:30-12:00  Country group work 3: Data to action
12:00-13:00  Lunch
13:00-14:30  Presentation of country action plans
14:30-15:00  (7) Closing ceremony
15:00  Coffee

Venue: KCDC, Osong

Dr Jun Byung-Yool
Director, KCDC, Republic of Korea

Dr Kyungwon Oh
Director, Division of Health and Nutrition Survey (DHS), KCDC

Dr Yoonjung Kim
Principal Researcher, DHS, KCDC

Dr Yangwha Kang
Principal Researcher
Division of Disease Control, KCDC

Ms Leanne Riley

Dr Cherian Varghese/
Dr Colin Bell
NCD surveillance framework

Presenter: Dr. Prak Piseth Raingsey

Current situation

• Data collection from public health facility (HBP, heart disease, diabetes, breast cancer, lung cancer, cervical cancer, uterus cancer, and mental health)
• Register for out-patient and in-patient
• Private is not truthful
• Register reported into monthly report (HC1 and HO2)

Data Collection System Schematic Diagram

Outcomes-Premature mortality

NCDS DEATHS IN CAMBODIA

Outcomes-cancer incidence
Cancer data

- Breast cancer: 183 (death=?)
- Lung cancer: 186 (death=22)
- Liver cancer: 335 (death=22)
- Cervical cancer: 354 (death=6)
- Uterus cancer: 67 (death?)

Source: HIS 2011

Risk factor surveys

- STEPs survey 2010
- Cambodia Demographic & Health Survey 2010
- National Adult Tobacco Survey of Cambodia conducted in 2011 by the National Institute of Statistics, Ministry of Planning

Health information system

Prevalence of NCD risk factors in Cambodian adults, aged 25-64 years, 2010

Health system response

<table>
<thead>
<tr>
<th>Parameter covered</th>
<th>Responsible agency</th>
<th>Parameters covered</th>
<th>Responsible agency</th>
<th>Parameters covered</th>
<th>Responsible agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCD risk factors</td>
<td>Ministry of Health</td>
<td>National survey</td>
<td>Ministry of Health</td>
<td>National survey</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>Reproductive</td>
<td>NIP, MoH</td>
<td>National survey</td>
<td>NIP, MoH</td>
<td>National survey</td>
<td>NIP, MoH</td>
</tr>
</tbody>
</table>

Health system response

<table>
<thead>
<tr>
<th>Responsible agency</th>
<th>Parameters covered</th>
<th>Responsible agency</th>
<th>Parameters covered</th>
<th>Responsible agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>MoH</td>
<td>National survey</td>
<td>MoH</td>
<td>National survey</td>
<td>MoH</td>
</tr>
<tr>
<td>NIP</td>
<td>NCD risk factors</td>
<td>MoH</td>
<td>Reproductive</td>
<td>MoH</td>
</tr>
</tbody>
</table>

Policy Monitoring

<table>
<thead>
<tr>
<th>Parameters covered</th>
<th>Responsible agency</th>
<th>Parameters covered</th>
<th>Responsible agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes registry</td>
<td>MoH</td>
<td>Hepatitis B registry</td>
<td>MoH</td>
</tr>
<tr>
<td>Hospital based cancer registry</td>
<td>MoH</td>
<td>Hospital based cancer registry</td>
<td>MoH</td>
</tr>
</tbody>
</table>

Source: Cambodia Demographic & Health Survey 2010, Cambodia 2011 Survey 2011
Policies related to NCD

- National Strategy for prevention and control of NCDs 2007-2010
- National Strategic Plan for prevention and control of NCDs 2013-2020
- National Strategic Plan on Tobacco Control 2006-2010, and the NSP 2011-2015
- Mental Health and Substance Abuse Strategic Plan, 2011-2015

Challenges for NCD surveillance

- Lack of resources.
- Capacity, knowledge and skills of the staff
- Staff commitment

Opportunities for NCD surveillance

- National Strategic Plan for Prevention and Control of NCD 2013-2020 in regard to strengthening NCD surveillance
- HIS update in the process
- Hospital cancer-based registry in the process
### Guide Questions

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation / 3 Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the risk factor surveys for children/youth in the country?</td>
<td>GYTS</td>
<td>Provision of regular funding for the conduct of surveys</td>
</tr>
<tr>
<td></td>
<td>GSHS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>National Nutrition Survey (NNS)— doing anthropometric measurements among children and adolescents</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No major challenge</td>
<td></td>
</tr>
<tr>
<td>What staffing, governance and management structures are in place?</td>
<td>DOH doing GYTS and GSHS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FNRI doing NNS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No major challenges.</td>
<td></td>
</tr>
<tr>
<td>What is the technical capacity (staff and software) to conduct such surveys?</td>
<td>DOH and FNRI have technical capacity to conduct and manage surveys</td>
<td></td>
</tr>
<tr>
<td>How has data from risk factor surveys in youth/children been used in your country and by whom?</td>
<td>Used by Government and stakeholders in policy making (e.g. Sin Tax) and NCD/tobacco control program monitoring</td>
<td></td>
</tr>
<tr>
<td>When is your suggested plan to conduct the next GSHS survey in your country?</td>
<td>Pending the completion of strategic plan for NCDs 2014 / Budgetary constraint, capacity of personnel to conduct survey</td>
<td>Capacity building for personnel and budgetary allocations from GOP</td>
</tr>
</tbody>
</table>
## Strengthening Mortality Registration

### Country: Cambodia

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation</th>
<th>Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your country have a system for registering mortality by cause of death on a regular basis?</td>
<td>No</td>
<td>No CoD&lt;br&gt;Poor data on mortality reported from the hospitals&lt;br&gt;No mortality cases reported from the community</td>
<td>Strengthen civil registration&lt;br&gt;Coordinate with ministry of interior&lt;br&gt;Verbal autopsy</td>
</tr>
<tr>
<td>Please describe the process of death registration and who is involved in the process.</td>
<td>Yes, in the hospital</td>
<td>CoD is clearly identified in some health facilities&lt;br&gt;Paper based registration</td>
<td>Training GP&lt;br&gt;Develop and introduce electronic patient record&lt;br&gt;Introduce ICD 10</td>
</tr>
<tr>
<td>What is the technical capacity (staff and software) on mortality registration?</td>
<td></td>
<td>Technical capacity is limited&lt;br&gt;Shortage of staff</td>
<td>Capacity building</td>
</tr>
<tr>
<td>How has data from mortality been used in your country and by whom?</td>
<td></td>
<td>Incomplete data&lt;br&gt;Being used for health planning&lt;br&gt;Policy makers</td>
<td>Strengthen collaboration with ministry of interior and other relevant sector e.g., NIS, ministry of planning</td>
</tr>
<tr>
<td>Guide Questions</td>
<td>Current situation</td>
<td>Key Challenges</td>
<td>What can be done to address these challenges?</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
<td>------------------------------------------</td>
<td>---------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Does your country have a system for registering mortality by cause of death on a regular basis?</td>
<td>HMIS&lt;br&gt;Hospital based&lt;br&gt;Community based</td>
<td></td>
<td>Technical capacity&lt;br&gt;No National standard&lt;br&gt;(ICD coding)&lt;br&gt;Data Incompleteness</td>
</tr>
<tr>
<td>Please describe the process of death registration and who is involved in the process.</td>
<td>MoH&lt;br&gt;Hospital Statistics&lt;br&gt;Village health Volunteers</td>
<td>Technical capability to conduct registration&lt;br&gt;Motivation</td>
<td>Implementation of National and international procedures</td>
</tr>
<tr>
<td>What is the technical capacity (staff and software) on mortality registration?</td>
<td>HMIS – MoH</td>
<td>Technical capacity&lt;br&gt;IT infrastructure</td>
<td>WHO- ICD coding</td>
</tr>
<tr>
<td>How has data from mortality been used in your country and by whom?</td>
<td>MDG</td>
<td>No consensus data</td>
<td>Systematic data collection</td>
</tr>
<tr>
<td>Guide Questions</td>
<td>Current situation / 3 Key Challenges</td>
<td>What can be done to address these challenges?</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
<td>------------------------------------------------------</td>
<td>---------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Does your country have a system for registering mortality by cause of death on a regular basis?</td>
<td>Yes</td>
<td>Registration quality is poor (detailed diagnosis in line with ICD-10)</td>
<td></td>
</tr>
<tr>
<td>Please describe the process of death registration and who is involved in the process.</td>
<td>Medical certificate</td>
<td>Hospital-based data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. PHC level</td>
<td>Home death causes are not categorised properly to be registered to the national mortality registration according to ICD-10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Secondary level</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Tertiary level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is the technical capacity (staff and software) on mortality registration?</td>
<td>Statistical units</td>
<td>Paper-based version</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. PHC level - 1 staff</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Secondary level - team</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Tertiary level - team</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Health-Info software</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How has data from mortality been used in your country and by whom?</td>
<td>Monthly - MOH</td>
<td>Data presentation is not clearly classified to compare with international data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quarterly - MOH and SSO</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Annual health statistics - to all stakeholders and public, and it is put on web</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Guide Questions

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation / 3 Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your country have a system for registering mortality by cause of death on a regular basis?</td>
<td>Yes, and not only mortality but also vital events (birth and marriage)</td>
<td>Timeliness of mortality data</td>
</tr>
<tr>
<td>Please describe the process of death registration and who is involved in the process.</td>
<td>The person responsible (attendant/informant) will file for registration of the vital event to the local civil registry office. The MHO will review and certify the death certificate both attended and unattended.</td>
<td>Issues on the accuracy of filing up the death certificates (attendant and MHO)</td>
</tr>
<tr>
<td>What is the technical capacity (staff and software) on mortality registration?</td>
<td>The local civil registry uses the Philippine Civil Registry Information System (PhilCRIS) for the encoding of vital events. At the NSO, they use the decentralized vital statistics system for uploading the files submitted by LCRO for tabulation of vital statistics.</td>
<td>Timeliness and accuracy of data being submitted by LCRO</td>
</tr>
<tr>
<td>How has data from mortality been used in your country and by whom?</td>
<td>Data used for policy making and planning purposes</td>
<td>Timeliness and accuracy of data being used for policy and management</td>
</tr>
</tbody>
</table>
Country: VIET NAM

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation</th>
<th>Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
</table>
| Does your country have a system for registering mortality by cause of death on a regular basis? | - Community based system  
- Hospital based system | Community based system  
- Poor quality  
- Incompleteness (cause of deaths)  
- Not utilized (by cause of deaths) | Develop regulations and standard guideline applying for all levels  
Provide trainings                                                                            |
| Please describe the process of death registration and who is involved in the process. | - Community based: Commune health center => District Health Centers => Provincial Health Dept => MoH  
- Hospital based: District/provincial hospital => Provincial Health Dept. => MoH | - Community based: Lack of guidelines/regulation on reporting cause of deaths |                                                                                       |
| What is the technical capacity (staff and software) on mortality registration? | - Limited capacity | - Community: no software/ no qualified staff  
- Hospital based: Good software only in some national hospitals |                                                                                       |
| How has data from mortality been used in your country and by whom? | Only data from hospital formal published and used by related agencies | Data not representative and cover all population | Strengthening Community based registration                                   |
## STRENGTHENING CANCER REGISTRIES

**Country:** CAMBODIA

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation</th>
<th>Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your country have a system for cancer registration?</td>
<td></td>
<td>No structure</td>
<td>Establish NCC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No coordination committee for cancer registry</td>
<td>Formulate committee for cancer registry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NCC not yet established</td>
<td></td>
</tr>
<tr>
<td>Is it population-based or hospital-based?</td>
<td></td>
<td>Staff shortage and motivation</td>
<td></td>
</tr>
<tr>
<td>Please describe the process of cancer registration and who is involved in the process.</td>
<td></td>
<td>Staff is not competent</td>
<td></td>
</tr>
<tr>
<td>How has data from cancer registration been used in your country and by whom?</td>
<td></td>
<td>Planning</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Policy maker</td>
<td></td>
</tr>
<tr>
<td>How many specialized centres/hospitals for cancer are there in the country?</td>
<td>2</td>
<td>Difficult to scale up cancer services</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Staff shortage</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lack of medical equipment</td>
<td></td>
</tr>
<tr>
<td>What is the technical capacity (manpower such as pathologists, etc.) and how are they distributed in the country (per region/state/province)?</td>
<td></td>
<td>1 oncologist</td>
<td>Training more staff</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 pathologist centralized in PP</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Less interest from health professionals to study in pathologist</td>
<td></td>
</tr>
</tbody>
</table>
## Guide Questions

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation</th>
<th>Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your country have a system for cancer registration?</td>
<td>Hospital based</td>
<td>Incomplete registration criteria</td>
<td>Technical capacity</td>
</tr>
<tr>
<td>Is it population-based or hospital-based?</td>
<td>Hospital based</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Please describe the process of cancer registration and who is involved in the process.</td>
<td>No pathology confirmation (Based on clinical investigations)</td>
<td>Incomplete registration criteria</td>
<td>Technical capacity</td>
</tr>
<tr>
<td>How has data from cancer registration been used in your country and by whom?</td>
<td>Not yet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many specialized centres/hospitals for cancer are there in the country?</td>
<td>1 unit at one central hospital</td>
<td>Policy</td>
<td>Policy</td>
</tr>
<tr>
<td>What is the technical capacity (manpower such as pathologists, etc.) and how are they distributed in the country (per region/state/province)?</td>
<td>Few pathologists</td>
<td>Capacity building</td>
<td>Technical assistance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Technical capacity</td>
<td>Financial support</td>
</tr>
</tbody>
</table>
## Country: MONGOLIA

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation / 3 Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your country have a system for cancer registration?</td>
<td>Yes</td>
<td>1. No population-based registry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Cancers identified and treated in other hospitals are not registered into National Cancer Data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. No differentiation between benign and malignant tumors</td>
</tr>
<tr>
<td>Is it population-based or hospital-based?</td>
<td>Hospital-based cancer registration</td>
<td>Lack of population based data on cancer registry</td>
</tr>
</tbody>
</table>
| Please describe the process of cancer registration and who is involved in the process. | 1. PHC level-referral  
2. Secondary level- pap smear - referral  
3. Tertiary level – final confirmation on DS and Treatment (new incidence) | 1. No data on patients treated abroad  
2.                                                                                                   |
| How has data from cancer registration been used in your country and by whom?    | NCC- National Center for Health development – Ministry of Health                                      | 1. Death cause is not clearly categorised  
2. Data on survival rate is poor  
3. Late diagnosis has negative impact on survival rate  
4. Poor data utilization for policy making                                                              |
| How many specialized centres/hospitals for cancer are there in the country?     | 1 – National Cancer Center                                                                            | 1. Late diagnosis has negative impact on survival rate  
2. Cancers identified and treated in other hospitals are not registered into National Cancer Data     |
| What is the technical capacity (manpower such as pathologists, etc.) and how are they distributed in the country (per region/state/province)? | National pathology unit only                                                                          | 1. Lack of pathologists  
2. Double role and responsibility of pathologists                                                        |
<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation / 3 Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your country have a system for cancer registration?</td>
<td>There is a population-based cancer registry based in Metro Manila covering about 5% of Philippine population. Some hospitals also run registries for their own audit/management purpose.</td>
<td>Timeliness of data. Latest available is 2002.</td>
</tr>
<tr>
<td>Is it population-based or hospital-based?</td>
<td>Population-based and some hospital-based</td>
<td>Timeliness of data from pop-based registry; Utilization of data among hospital-based registry</td>
</tr>
<tr>
<td>Please describe the process of cancer registration and who is involved in the process.</td>
<td>Philippine Cancer Society is in charge of running population-based registry with DOH funding</td>
<td>Timeliness of data generated</td>
</tr>
<tr>
<td>How has data from cancer registration been used in your country and by whom?</td>
<td>For policy development (e.g. Sin Tax Bill) and program development by DOH, legislators, etc.</td>
<td>Wala</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(This means NONE.)</td>
</tr>
<tr>
<td>How many specialized centres/hospitals for cancer are there in the country?</td>
<td>17 DOH medical centers in Metro Manila and in HUCs</td>
<td>Access to services in these hospitals, and access to cancer-related data in the medical records of these hospitals</td>
</tr>
<tr>
<td>What is the technical capacity (manpower such as pathologists, etc.) and how are they distributed in the country (per region/state/province)?</td>
<td>Pathologists are available but concentrated in urban centers</td>
<td>Maldistribution of pathologists</td>
</tr>
</tbody>
</table>
Country: VIET NAM

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation / Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your country have a system for cancer registration?</td>
<td>9 Center of Cancer registries poor quality of data</td>
<td>Strengthening Quality control at all registry Centers</td>
</tr>
<tr>
<td>Is it population-based or hospital-based?</td>
<td>Population based</td>
<td></td>
</tr>
<tr>
<td>Please describe the process of cancer registration and who is involved in the</td>
<td>Registry Unit collect data from nearby cancer hospitals/Departments (cover a defined population)</td>
<td></td>
</tr>
<tr>
<td>process.</td>
<td>National Oncology Hospital is the focal point</td>
<td></td>
</tr>
<tr>
<td>How has data from cancer registration been used in your country and by whom?</td>
<td>Data used for policy making, planning and for advocacy</td>
<td></td>
</tr>
<tr>
<td>How many specialized centres/hospitals for cancer are there in the country?</td>
<td>11 Oncology Centers/Hospitals for</td>
<td></td>
</tr>
<tr>
<td>What is the technical capacity (manpower such as pathologists, etc.) and how</td>
<td>Qualified staff only in Central hospitals;</td>
<td>Supportive policy for staff working in the field of cancer</td>
</tr>
<tr>
<td>are they distributed in the country (per region/state/province)?</td>
<td>Poor quality and unstable staff at provincial levels</td>
<td>registry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capacity building (trainings, international cooperation)</td>
</tr>
</tbody>
</table>
## ANNEX 6

### Country: CAMBODIA

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation</th>
<th>Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
</table>
| Is there any central agency responsible for collating data on health system response to the NCD epidemic? | Department of Preventive Medicine  
Department of Planning and Health Information | Brain drain  
Not fully completed for NCD data from private sectors  
Frequency data (only data from the hospitals) | Improve coverage of data collection from private sectors  
Electronic patient record will be established |
| What data is being collected through health information systems on NCD?         | Cancer, CVD, Diabetes, HPB, mental health, and injury                             | Diagnostic is not properly identified in some cases                                                | Introduce ICD-10 and capacity building       |
| Does it include data from the private sector (hospitals, insurance, etc.)     | Yes, it started in 2010  
Web based system just start in 2011                                                | Limited knowledge and low interest from private sectors                                            | Ensure private sectors to follow the regulation  
Coordinate with Provincial Health Departments to collect data from private sectors and send to MoH |
| Are any of the indicators in the proposed WHO global monitoring framework included in the data collection? | Not fully in line with the WHO global target and indicators                       |                                                                                                    | Update HIS in order to include chronic respiratory diseases |
## Guide Questions

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation</th>
<th>Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
</table>
| Is there any central agency responsible for collating data on health system response to the NCD epidemic? | • Statistic Division, Planning D-MOH  
• NIOPH (Donor driven research activities) | • No specific unit for NCDs data collection  
• Incomplete data | National focal point  
Technical capacity |
| What data is being collected through health information systems on NCD? | DM, HTN, Injury, Mental health, Cancer | Low data coverage | Integration of national indicator survey with WHO global monitoring framework |
| Does it include data from the private sector (hospitals, insurance, etc.)? | No | Motivation | Strict Regulations from MOH |
| Are any of the indicators in the proposed WHO global monitoring framework included in the data collection? | • NCD risk factors  
• Dietary  
• Vaccination against infectious agents | Incomplete indicators | Integration of national health indicator survey with WHO global monitoring framework |
<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation</th>
<th>Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
</table>
| Is there any central agency responsible for collating data on health system response to the NCD epidemic? | 1. Center for Health Development  
2. National Center for Public Health | 1. Integrated approach of collating data by MOH | 1. MOH policy is needed on the collation of data  
2. Needs to strengthen human capacity |
| What data is being collected through health information systems on NCD?         | 1. No data on drugs  
2. No data on equipment  
3. Data on morbidity and mortality | 1. Paper-based data collation is time consuming causing a late data reporting  
2. Lack of data on early detection and treatment | 1. Needs for internet-based data collation |
| Does it include data from the private sector (hospitals, insurance, etc.)      | 1. Yes  
2. Existing health insurance scheme functions under Ministry of Welfare | 1. Existing law does not allow for complete data on health insurance  
2. Two separate data flow  
**MOH:** Health data on recurrent cost on health facilities  
**Ministry of Welfare:** data on salary and health services | 1. Revision of law on health insurance  
2. Establish independent health insurance system |
| Are any of the indicators in the proposed WHO global monitoring framework included in the data collection? | 1. Indicators on mortality  
2. Indicators on morbidity  
3. Service availability- human resource, equipment | 1. 5-year data from STEPS only | 1. NCD indicators needs to be integrated to health information system |
<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation</th>
<th>Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
</table>
| Is there any central agency responsible for collating data on health system response to the NCD epidemic? | • DOH collects data through Program Implementation Review regularly conducted at the national and regional levels  
• Data on capacity assessment among hospitals are available but not fully utilized  
• Service indicators for NCDs are inadequate | • Inclusion of NCD service indicators in current reporting systems of DOH  
• Fragmented implementation of initiatives; inadequate coordination among various offices/stakeholders | • Management level meeting of the 3 offices  
• Come up with relevant indicators  
• Improved coordination among all stakeholders |
| What data is being collected through health information systems on NCD?          | Field Health Service Information System (FHSIS) collects frequency of NCD consultation for HPN and Diabetes | NCD service-related variables in the current health information is inadequate | Inclusion of relevant NCD variables in HIS of the DOH |
| Does it include data from the private sector (hospitals, insurance, etc.)       | No                                                                                 | Incomplete, inadequate report from the private sector                                            | Link with Phil Health Insurance Corp to capture data from the private sector and also ensure better participation in reporting NCD data |
| Are any of the indicators in the proposed WHO global monitoring framework included in the data collection? | Indicators are included but the targets have to be adjusted in the next strategic planning to be conducted | None                                                                                             | Adopt the global indicators in the next NCD strategic planning |
**Guide Questions** | **Current situation** | **Key Challenges** | **What can be done to address these challenges?**
---|---|---|---
Is there any central agency responsible for collating data on health system response to the NCD epidemic? | - Ministry of Health  
- Vertical programs for NCDs | - the information not adequate/comprehensive;  
- not cover all indicators,  
- from different sources within health sector (NCDs vertical programs) but not from other ministries/sectors | - Establishing NCDs National Surveillance System with Health system response component (MoH - management, one institution - technical focal point, consistent/unified all levels/sources)  
- Conduct National survey to assess system response (every 5 year)  
- Strengthen regulation for data reporting from private sectors  
- Develop set of indicators - consistent with WHC

What data is being collected through health information systems on NCD? | - Mortality and morbidity due to NCDs in Hospitals (MoH Health year book)  
- Some information of human resource, finance, drugs and equipment | - diseases indicator not cover all population  
- collected and reported by NCD vertical programs and serve for implementation of their own plans (not comprehensive) |  

Does it include data from the private sector (hospitals, insurance, etc.)? | - Very limited | - There are available forms for reporting, but very poor reports |  

Are any of the indicators in the proposed WHO global monitoring framework included in the data collection? | - Partially (Human resources, finance, drug and equipment, facilities…) | - The reporting system of MoH cover all indicators but not specific for NCDs  
- The NCDs vertical programs (under MoH) include some indicators but for their own plans |  

Is there any central agency responsible for collating data on health system response to the NCD epidemic? | - Ministry of Health  
- Vertical programs for NCDs | - the information not adequate/comprehensive;  
- not cover all indicators,  
- from different sources within health sector (NCDs vertical programs) but not from other ministries/sectors |  

Day 4 Group Work (Health systems response)
## DATA PRESENTATION AND DISSEMINATION

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>CAMBODIA</th>
<th>LAO PDR</th>
<th>MONGOLIA</th>
<th>PHILIPPINES</th>
<th>VIET NAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>How long did it take to develop the report (when was the survey done and when was the report published?)</td>
<td>2-3 months Published in 2011</td>
<td>Tobacco Study 2006-2009- 3 years STEP 2008-2010- 2 years</td>
<td>4-5 months</td>
<td>Survey was done in 2008 and the report was published in 2010 but in between there were many dissemination fora conducted up to the regional level. International publication in 2012</td>
<td>20 months Survey done in 2010 Report Published in August, 2012</td>
</tr>
<tr>
<td>How are the results disseminated? Who are the target audience?</td>
<td>National workshop Distribution of the reports/ factsheet in all NCD related meetings/workshops Policy makers, government intersectoral agencies, development partners, NGOs, and other stakeholders</td>
<td>National and international stakeholders</td>
<td>- Launching of the STEPS report for stakeholders including media - Placing in website</td>
<td>Target audience: all stakeholders, public and private Dissemination fora, including tri media</td>
<td>Through National Conference Policy makers Doctors Researchers NGO Mass media</td>
</tr>
</tbody>
</table>

---

Day 5 Group Work (Data to action)
<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>CAMBODIA</th>
<th>LAO PDR</th>
<th>MONGOLIA</th>
<th>PHILIPPINES</th>
<th>VIET NAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the report available on the internet?</td>
<td>Yes, WHO website, UHS, medical journal of the UHS</td>
<td>Yes, Tobacco Study 2009 Lao STEPS Survey 2010</td>
<td>Report is placed in MOH website</td>
<td>Yes, in the website of the Food and Nutrition Research Institute as well in the International Journal of Epidemiology</td>
<td>Not yet</td>
</tr>
<tr>
<td>Are the data publicly available for further analysis/research?</td>
<td>No</td>
<td>Yes, ASEAN –NCDs, woman health</td>
<td>Data in the form of fact sheet and figures are placed in the website of the Center for National Development</td>
<td>Yes, in collaboration with FNRI</td>
<td>Not yet</td>
</tr>
<tr>
<td>Are the results of this survey developed as a policy advocacy material?</td>
<td>Yes</td>
<td>Tobacco control campaign and law Developing NCD policy NCDs prevention campaigns (DM, Heart, Mental health)</td>
<td>Yes, it is widely used</td>
<td>Yes, e.g. used in development of advocacy materials for the Sin tax bill</td>
<td>Yes, develop National Target Program for NCD 2011-2015</td>
</tr>
<tr>
<td>Are there any journal articles based on the survey data/results?</td>
<td>Yes</td>
<td>No</td>
<td>Yes including Lancet</td>
<td>Yes, International Journal of Epidemiology and the Philippine Journal of Nutrition</td>
<td>2 articles in local Journals</td>
</tr>
</tbody>
</table>
A. Questionnaire

World Health Organization
Western Pacific Region

Intercountry Workshop for NCD Surveillance and Monitoring
Seoul, Republic of Korea, 3-7 December 2012

EVALUATION FORM

Questionnaire 1 – Overall impression
Please rate your impression of the meeting by giving your score on a scale of 1-10 (1 being the lowest and 10 the highest).

A. The participation in this meeting was
Comments, if any.

B. The facilitation in this meeting was
Comments, if any.

C. The leadership in this meeting was
Comments, if any.

D. Transport for the meeting was
Comments, if any.

E. Facilities of this meeting was
Comments, if any.

F. Accommodation for this meeting was
Comments, if any.

G. Meals of this meeting were
Comments, if any.

H. The overall impression of this meeting was
Comments, if any.
Questionnaire 2 – What have you achieved?
Rate the success of the workshop by giving your score on a scale of 1-10 (1 being the lowest and 10 the highest).

Session 2: Setting the scene and country presentations

1~10

a. to understand the objectives
b. to exchange views and information in discussion
c. to learn from the experience of other countries
d. Please add any examples you actually achieved.

Session 3: Risk factor surveys

1~10

a. to understand the objectives
b. to exchange views and information in discussion
c. to learn from the experience of other countries
d. Please add any examples you actually achieved.

Session 4: Mortality registration and disease registries

1~10

a. to understand the objectives
b. to exchange views and information in discussion
c. to learn from the experience of other countries
d. Please add any examples you actually achieved.

Session 5: Health system response and community-based surveys (field visit)

1~10

a. to understand the objectives
b. to learn the implementation of community-based surveys in the Republic of Korea
c. to identify common challenges
d. to identify common solutions
e. Please indicate any specific learning from the group work.

Sessions 6: National targets and next steps

1~10

a. to exchange views and information in discussion
b. to learn from the experience of other countries
c. Please add any examples you actually achieved.
Questionnaire 3 – Comments and suggestions

Please let us know your comments and suggestions. Please provide a maximum of 3 comments per question.

A. How can you further strengthen surveillance and monitoring of NCD in your country?
B. What are the additional support/information that will help you to do this work?
C. What are your suggestions in organizing the next workshop on NCD surveillance?

B. Results

<table>
<thead>
<tr>
<th>QUESTIONNAIRE 1</th>
<th>10</th>
<th>9</th>
<th>8</th>
<th>7</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>The participation in this meeting was</td>
<td>29%</td>
<td>48%</td>
<td>19%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>The facilitation in this meeting was</td>
<td>33%</td>
<td>48%</td>
<td>19%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>The leadership in this meeting was</td>
<td>33%</td>
<td>48%</td>
<td>14%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Transport for the meeting was</td>
<td>48%</td>
<td>33%</td>
<td>14%</td>
<td>0%</td>
<td>5%</td>
</tr>
<tr>
<td>Facilities of this meeting was</td>
<td>33%</td>
<td>43%</td>
<td>24%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Accommodation for this meeting was</td>
<td>25%</td>
<td>30%</td>
<td>45%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Meals of this meeting were</td>
<td>10%</td>
<td>33%</td>
<td>43%</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>The overall impression of this meeting was</td>
<td>24%</td>
<td>62%</td>
<td>10%</td>
<td>5%</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QUESTIONNAIRE 2</th>
<th>10</th>
<th>9</th>
<th>8</th>
<th>7</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Day 1: Setting the scene and country presentations</strong></td>
<td>24%</td>
<td>48%</td>
<td>24%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>a. to understand the objectives</td>
<td>24%</td>
<td>48%</td>
<td>24%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>b. to exchange views and information in discussion</td>
<td>25%</td>
<td>25%</td>
<td>35%</td>
<td>15%</td>
<td>0%</td>
</tr>
<tr>
<td>c. to learn from the experience of other countries</td>
<td>15%</td>
<td>35%</td>
<td>30%</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Day 2: Risk factor surveys</strong></td>
<td>33%</td>
<td>48%</td>
<td>14%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>a. to understand the objectives</td>
<td>33%</td>
<td>48%</td>
<td>14%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>b. to exchange views and information in discussion</td>
<td>20%</td>
<td>40%</td>
<td>25%</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>c. to learn from the experience of other countries</td>
<td>26%</td>
<td>32%</td>
<td>26%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Day 3: Mortality registration and disease registries</strong></td>
<td>20%</td>
<td>50%</td>
<td>20%</td>
<td>10%</td>
<td>0%</td>
</tr>
<tr>
<td>a. to understand the objectives</td>
<td>20%</td>
<td>50%</td>
<td>20%</td>
<td>10%</td>
<td>0%</td>
</tr>
<tr>
<td>b. to exchange views and information in discussion</td>
<td>21%</td>
<td>32%</td>
<td>32%</td>
<td>11%</td>
<td>5%</td>
</tr>
<tr>
<td>c. to learn from the experience of other countries</td>
<td>16%</td>
<td>32%</td>
<td>26%</td>
<td>21%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Day 4: Health system response and community-based surveys</strong></td>
<td>25%</td>
<td>40%</td>
<td>15%</td>
<td>15%</td>
<td>5%</td>
</tr>
<tr>
<td>a. to understand the objectives</td>
<td>25%</td>
<td>40%</td>
<td>15%</td>
<td>15%</td>
<td>5%</td>
</tr>
<tr>
<td>b. to learn the implementation of community-based surveys in the Republic of Korea</td>
<td>16%</td>
<td>26%</td>
<td>42%</td>
<td>11%</td>
<td>5%</td>
</tr>
<tr>
<td>c. to identify common challenges</td>
<td>21%</td>
<td>32%</td>
<td>26%</td>
<td>11%</td>
<td>11%</td>
</tr>
<tr>
<td>d. to identify common solutions</td>
<td>21%</td>
<td>32%</td>
<td>26%</td>
<td>11%</td>
<td>11%</td>
</tr>
<tr>
<td><strong>Day 5: National targets and next steps</strong></td>
<td>32%</td>
<td>42%</td>
<td>21%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>a. to exchange views and information in discussion</td>
<td>32%</td>
<td>42%</td>
<td>21%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>b. to learn from the experience of other countries</td>
<td>28%</td>
<td>39%</td>
<td>28%</td>
<td>6%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Surveillance for NCD: Challenges and Opportunities

Cherian Varghese, M.D., Ph.D.
Senior Medical Officer (NCD)

Relative rarity of events in comparison to reportable events in communicable diseases
- Lack of uniform case definition
- Lack of unique ID number
- Denominator is important
- Infrastructure availability varies widely between urban and rural areas
- Resource intensive

Components of NCD to be monitored depends on where you are and what you see

Set of 9 voluntary global targets for NCD prevention and control (by 2025)

ADULT AND YOUTH RISK FACTORS

STEPwise surveillance for NCD risk factors

Different levels of risk factor assessment:
- STEP 1 – questionnaire
- STEP 2 – physical measurements
- STEP 3 – blood samples

Three modules per Step:
- Core
- Expanded
- Optional
Considerations - Data
- Age and sex are the most important determinants
  - Risk factor prevalence varies considerably by age and sex
  - E.g., Tobacco prevalence 21% in country X
    - Perceived as low (impact of interventions)
    - Reality
      - Smoking prevalence 45% in same country
- Always stratify by age and sex
- Denominator makes a big difference
- Crude and age standardized data
- Age standardization is needed as age structure of populations vary between countries
- Crude data is good for planning services
- Age standardized data is essential for comparisons

Considerations - infrastructure
- Risk factor survey methodology is not complicated
- Involve researchers and departments/institutions with capacity in statistics, field work, data collation and analysis.
- After one survey, countries should be able to plan, execute, analyze and report the results
- Countries should have a mechanism to sustain surveillance.
**Prevalence and incidence**

- Prevalence is the number of all cases (old and new) in the population.
- Incidence is the number of **new** cases diagnosed in a defined population in a defined period of time.
- For hospital cases, we can only get frequency of cases in that hospital (unless they are linked and referred to a denominator).

**Hospital/health facility based data collection**

- Too many forms are filled up.
- If no unique identification number, repeat visits cannot be identified.
- Limited time of health personnel: only most important items to be collected.
  - Analysis of data
  - Use of data
- 'Bad data' is no better than 'no data'.
- What not to collect is more important than what to collect...

**One patient, one record**

- As much as possible assign one record for one patient.
- Computerized record systems will be of a big advantage.
- This is important in NCDs where patients are to be cared for years.
- An NCD passbook for the patient is also helpful.

**Indicators for monitoring cancer**

- Incidence
  - Number of new cases in a defined population in a defined period
- Prevalence
  - All cancer cases in a defined population
- Mortality
  - Death rate from cancer
- Survival
  - Survival rate of cancer in a population
- Stage shift
  - Shift in stage distribution (IV-II)

**More than apples and oranges**

- One patient, one record
- As much as possible assign one record for one patient
- Computerized record systems will be of a big advantage
- This is important in NCDs where patients are to be cared for years
- An NCD passbook for the patient is also helpful
Population based cancer registry

- Hospital
- Pathology lab
- Imaging facilities
- Death certificates
- Population register

New cancer cases in the population in the period

Incidence and mortality rates of cervical cancer in Finland in 1953-2002,
(Finnish Cancer Registry, 2004)

Options

- Start with hospital based cancer registry
  - Select the hospital which manages the maximum number of cancer cases
  - Well aligned to the medical records department and hospital information systems
  - Do not create parallel systems
  - Familiarize and learn the methodology, abstracting, removing duplicates, coding, tabulation
  - Can provide some indication of the cancer pattern
  - Expand to a defined catchment area
  - If PBCR is available, strengthen quality of data and coverage

Challenges

- Defined population
- Capture all new cancer cases
- Capture all deaths from cancer
- Microscopic verification (% path)
- Site and histological details
- ICD coding
- Stage of the disease (TNM, FIGO, etc)
- Collate all cases from the catchment population—avoid duplication
- Compute incidence and mortality data

Other Disease Registries

1. Diabetes registry
   - Helps to monitor the course of patients
   - Unique identifiers are needed
   - Data on services
   - Improve quality of care
   - Software developed
   - Link to mHealth (mobile messages for periodic checks)

2. Stroke Registry
   - Module available as part of STEPS
   - Can be started as hospital based registries
   - Mongolia is starting a Stroke registry
Current situation on NCDs

- No Specific national system for data collection on NCDs
- There are Hospital and community based for death registration (Incorrect or incomplete death certification)
- No Specific system for population cancer registry
- Re-organization for NCDs committee

Outcomes-Premature mortality

<table>
<thead>
<tr>
<th>National system for death registration</th>
<th>Yes / No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical certification</td>
<td>Yes / No</td>
<td>No</td>
</tr>
<tr>
<td>ICD coding</td>
<td>Yes / No</td>
<td>Yes (limited)</td>
</tr>
<tr>
<td>Proportion of the country covered</td>
<td>Specified</td>
<td>100%</td>
</tr>
<tr>
<td>Reporting agency</td>
<td>Specify</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>Rate of Death: Ministry</td>
<td>Specify</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>Training programme for ICD coding</td>
<td>Yes / No</td>
<td>None</td>
</tr>
<tr>
<td>Vital autopsy studies</td>
<td>Yes / No</td>
<td>No</td>
</tr>
</tbody>
</table>

Latest data available on cause-specific mortality: Specified (Ministry of Health)

Mortality Data

<table>
<thead>
<tr>
<th>Rank</th>
<th>Cause of Death</th>
<th>No. (15-60)</th>
<th>% of Total Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coronary Heart Disease</td>
<td>5,879</td>
<td>13.85</td>
</tr>
<tr>
<td>2</td>
<td>Pulmonary &amp; Influenza</td>
<td>5,129</td>
<td>12.29</td>
</tr>
<tr>
<td>3</td>
<td>Stroke</td>
<td>3,762</td>
<td>9.01</td>
</tr>
<tr>
<td>4</td>
<td>Chronic Lung Disease</td>
<td>3,023</td>
<td>7.11</td>
</tr>
<tr>
<td>5</td>
<td>Tuberculosis</td>
<td>2,609</td>
<td>6.36</td>
</tr>
<tr>
<td>6</td>
<td>Diarrhoeal Disease</td>
<td>1,251</td>
<td>3.05</td>
</tr>
<tr>
<td>7</td>
<td>Birth Trauma</td>
<td>1,232</td>
<td>2.95</td>
</tr>
<tr>
<td>8</td>
<td>Liver Cancer</td>
<td>8,155</td>
<td>2.03</td>
</tr>
<tr>
<td>9</td>
<td>Road Traffic Accidents</td>
<td>9,059</td>
<td>2.25</td>
</tr>
<tr>
<td>10</td>
<td>Suicide</td>
<td>1,084</td>
<td>2.53</td>
</tr>
</tbody>
</table>

Latest WHO data (2010). Death Rates are age-standardized. Total deaths are % of population.
**NCDs Mortality data**

<table>
<thead>
<tr>
<th>NCDs category</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total NCD deaths in 55+</td>
<td>18.1</td>
<td>11.7</td>
</tr>
<tr>
<td>NCD deaths under age 60 (%)</td>
<td>39.6</td>
<td>32.6</td>
</tr>
<tr>
<td>Age-standardized death rate per 100,000</td>
<td>12.1</td>
<td>11.7</td>
</tr>
<tr>
<td>All NCDs</td>
<td>849.4</td>
<td>689.0</td>
</tr>
<tr>
<td>Cancer</td>
<td>145.4</td>
<td>111.1</td>
</tr>
<tr>
<td>Chronic respiratory diseases</td>
<td>122.8</td>
<td>103.4</td>
</tr>
<tr>
<td>Cardiovascular diseases and diabetes</td>
<td>467.9</td>
<td>392.8</td>
</tr>
</tbody>
</table>


**Outcomes - cancer incidence**

<table>
<thead>
<tr>
<th>Population-based cancer registry</th>
<th>Yes/No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Established</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Population covered</td>
<td>Specify</td>
<td>75</td>
</tr>
<tr>
<td>Responsible authority</td>
<td>Specify</td>
<td>MOH</td>
</tr>
<tr>
<td>Latest report</td>
<td>Specify</td>
<td>National Health Statistics Report FY 2009-2010</td>
</tr>
</tbody>
</table>

**Cancer data**

(National Health Statistics FY 2009-2010)

Number of patients with cancer reported at OPD and IPD in 17 provinces (Whole country)

<table>
<thead>
<tr>
<th>Hospital</th>
<th>OPD</th>
<th>Rate(000)</th>
<th>IPD</th>
<th>Rate(000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17 Provinces (hospitals)</td>
<td>1047</td>
<td>0.2</td>
<td>1329</td>
<td>1.7</td>
</tr>
</tbody>
</table>

**Exposures**

<table>
<thead>
<tr>
<th>National health behaviour/risk factor/nutrition surveys</th>
<th>Yes/No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>List the surveys</td>
<td>Specify</td>
<td>Lao Step Survey</td>
</tr>
<tr>
<td>How often?</td>
<td>Specify</td>
<td>Lao Step Survey - Not determined</td>
</tr>
<tr>
<td>Responsible agency</td>
<td>Specify</td>
<td>MOH</td>
</tr>
<tr>
<td>Parameters covered</td>
<td>Specify</td>
<td>NCDs Risk factors</td>
</tr>
<tr>
<td>National or sub-national</td>
<td>Specify</td>
<td>Lao Step Survey - Sub-National</td>
</tr>
<tr>
<td>Latest report</td>
<td>Specify</td>
<td>2010</td>
</tr>
</tbody>
</table>

**Risk factor surveys**

- Study of Tobacco Smoking Impacts
- Lao Step Survey (WHO)
- National Health Statistics report FY 2009-2010
- Lao Social Indicator Survey 2012

**Health system response**

<table>
<thead>
<tr>
<th>Health information system structure</th>
<th>Specify components, system, etc.</th>
<th>Department of Planning &amp; Statistics Division, MOH</th>
<th>Center for Health Education-MOH Department of Health Care-MOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital covered</td>
<td>Yes / No</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Properties of hospitals in private sector</td>
<td>Specify %</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Information on the following:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cervical cancer screening</td>
<td>Yes / No</td>
<td>Yes, but limited</td>
<td></td>
</tr>
<tr>
<td>Drug therapy in prevent heart attacks and strokes</td>
<td>Yes / No</td>
<td>Yes, limited</td>
<td></td>
</tr>
<tr>
<td>Essential NCD medicines and technologies</td>
<td>Yes / No</td>
<td>Essential NCD medicines and technologies: Yes, limited</td>
<td></td>
</tr>
<tr>
<td>Palliative care</td>
<td>Yes / No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Vaccination programmes for hepatitis B and HPV</td>
<td>Yes (specify) / No</td>
<td>CPT, Hepatitis B/2010+7% HPV/NA</td>
<td></td>
</tr>
<tr>
<td>Information available</td>
<td>Specify</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsible agency</td>
<td>Specify</td>
<td>EPI Dept, of Immunization-MOH</td>
<td></td>
</tr>
<tr>
<td>Vaccination against infectious cancers</td>
<td>Yes (specify) / No</td>
<td>Yes, limited</td>
<td></td>
</tr>
</tbody>
</table>
Policy Monitoring

<table>
<thead>
<tr>
<th>Policies to eliminate FHVAs from food supply</th>
<th>Yes/No</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respective agency</td>
<td>Specify</td>
<td>Food and Drug Dept, MOH</td>
</tr>
<tr>
<td>Monitoring system</td>
<td>Specify</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Policies to reduce marketing of food and non-alcoholic beverages to children</th>
<th>Yes/SPECIFY/NA</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsible agency</td>
<td>Specify</td>
<td>Food and Drug Dept, MOH</td>
</tr>
<tr>
<td>Monitoring system</td>
<td>Specify</td>
<td>No</td>
</tr>
</tbody>
</table>

NCD targets and indicators Based on Lao Step Survey

<table>
<thead>
<tr>
<th>NCDs Risk Factors</th>
<th>Target reduction(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2010</td>
</tr>
<tr>
<td>Percentage of untreated hypertension</td>
<td>83.8%</td>
</tr>
<tr>
<td>Percentage of under standardized consumption of vegetable and fruit</td>
<td>30.0%</td>
</tr>
<tr>
<td>Percentage of daily smoking</td>
<td>10%</td>
</tr>
<tr>
<td>Percentage of people with less exercise</td>
<td>14.2%</td>
</tr>
<tr>
<td>Percentage of people drink</td>
<td>10.5%</td>
</tr>
<tr>
<td>Percentage of people with obesity</td>
<td>5.8%</td>
</tr>
</tbody>
</table>

Challenges for NCD surveillance

- Administration: Establishing Permanent NCD organization within MOH
- Resources Constraints:
  - Human
  - Financial
- No National Policy on Alcohol Control
- Multi-Sectoral Action for NCD prevention and Control

Activities toward NCDs

- Tobacco smoking Campaign(Dept. of Hygiene and HP)
- Study of Tobacco Smoking Impacts
- NCDs Lao Step Survey(DHC)
- World Heart Day
- World Diabetic Day
- STG of NCDs
- Several Studies regarding public impacts of NCDs:
  - DM, HTN, Stroke, etc.
- Establishment of NCDs working committee(DHC)
- Healthy city proposal

Opportunities for NCD surveillance

- National commitment toward NCDs
  - Establishment of National NCD Committee
  - Development of NCD policies(Mental health, NCD..)
- Technical Assistance- WHO and International Collaborations
- NCDs – Global Agenda

National Policies related to NCDs

- Tobacco Control Policy
- Mental Health Policy
- NCDs Policy(ongoing)
**NCD surveillance framework**

**Mongolia**

Team on NCDs: Dr. Balgamas Dagva, MoH
Dr. B. Bal-Erdene, HHC
Dr. J. Oyunbattag, NCPH

3-7 December 2012, Seoul, Korea

---

**HEALTH CARE LEVELS**

1. Primary level: (under district & province)
   - "Bag" health center
   - "Sum" health centers - 274
   - Inter-hospital - 37

2. Secondary level: (province & district)
   - Public Health centers - 30
   - District hospital - 12
   - Aimag general hospital - 17
   - Rural general hospital - 6

3. Tertiary level hospitals
   - Regional diagnostic center - 4
   - State clinical and specialized hospital - 16

---

**TYPES OF HOSPITAL SERVICES INFORMATION**

1. Inpatient data:
   - Resource (input) indicators – number of beds, number of doctors, nurses, patients shift between hospital ward,
   - Service utilization indicators – number of patients, bed days, average lengths of stay
   - Productive and outcome indicators - deaths within 24 hours after admission, number of surgery complication and deaths after surgery,

2. Outpatient data:
   - Resource (input) indicators – number of cabinet, number of doctors, nurses
   - Service utilization indicators – number of outpatients, average number of outpatients visits per doctor
   - Productive and outcome indicators - average treated days, average waiting time of visits
TYPES OF HOSPITAL SERVICES INFORMATION:

3. Hospital morbidity and mortality
   - by causes
   - by age
   - by sex
   - by drug cost
   - by bed days

DATA COLLECTION TOOLS

- Hospital registration forms
  - Monthly information sheet
  - Annual health report

MONTHLY REPORT

1. Number of birth: total number, home births, live born, stillborn, newborn infants weighing at below 2500 g.
2. Number of deaths: total number, infant deaths, maternal deaths, deaths in the age 1-4, deaths in the hospital.
3. Inpatient data: number of discharges, number of bed days
4. Outpatient data: number of visits
5. Infectious diseases
6. Total number screening of NCD /hypertension, diabetes mellitus /

QUARTERLY REPORT

1. Outpatient reports
2. Inpatient reports
   - Morbidity
   - Mortality

ANNUAL HEALTH REPORT:

1. Report of health manpower
2. Source hospital report
3. District and aiming hospital report
4. Cancer report
5. TB report
6. Reports on mental disorders
7. Reports on infectious diseases
8. Report on the nutrition status
9. Reports on pathology and toxicology
10. Reports on IEC activities
11. Reports on quality programs
12. HIV/AIDS report
13. Reports on gerontology

Outcomes-Premature mortality

<table>
<thead>
<tr>
<th>National system for death registration</th>
<th>Yes/No</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical certification</td>
<td>Yes/No</td>
<td>Yes</td>
</tr>
<tr>
<td>ICD coding</td>
<td>Yes/No</td>
<td>Yes (started 1992)</td>
</tr>
<tr>
<td>Proportion of the country observed</td>
<td>Specify</td>
<td>Public hospitals data: 70-80%</td>
</tr>
<tr>
<td>Responsible agency</td>
<td>Specify</td>
<td>Center for Health Development</td>
</tr>
<tr>
<td>Risk of Health Survey</td>
<td>Specify</td>
<td>Monitoring and evaluation of the health status, major disease, chronic disease, etc.</td>
</tr>
<tr>
<td>Monitoring programme for KID screening</td>
<td>Yes/No</td>
<td>No</td>
</tr>
<tr>
<td>Verbal autopsy studies</td>
<td>Yes/No</td>
<td>No</td>
</tr>
<tr>
<td>Latest data available on cause-specific mortality</td>
<td>Specify</td>
<td>Leading causes of mortality by ICD-10, by causes, by age, by sex, by location per 1000 population</td>
</tr>
</tbody>
</table>

2
Mortality rate per 10,000 population by age group, by sex, by region /2011/:

<table>
<thead>
<tr>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>0-10</td>
</tr>
<tr>
<td>11-39</td>
</tr>
<tr>
<td>40-64</td>
</tr>
<tr>
<td>65+</td>
</tr>
</tbody>
</table>

Outcomes-cancer incidence:

Population-based cancer registry: Yes/No

<table>
<thead>
<tr>
<th>Description</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Established in</td>
<td>Specify year</td>
<td></td>
</tr>
<tr>
<td>Population covered</td>
<td>Specify %</td>
<td></td>
</tr>
<tr>
<td>Responsible agency</td>
<td>Specify</td>
<td></td>
</tr>
<tr>
<td>Latest report</td>
<td>Specify year</td>
<td></td>
</tr>
</tbody>
</table>

Cancer data, 2011:

DATA ANALYSIS SOFTWARE:

- Statistical programs (EPI-6.0, SPSS-14.0, GIS-6.0) (at national level)
- National Standard Software H-INF0 2.0 (at all levels of hospitals)
- E-hospital (EMR, outpatients order, information of drug and equipment such as supply, resource, laboratory investigation, Imagine diagnostic - CT, MRI, X-ray, ultrasound, mammography, angiography etc.)

PUBLICATIONS AND DISTRIBUTION INFORMATION:

- Monthly report on Population Morbidity and Mortality is published before the 8th day of the next month.
- Annual Health Reports is published by the beginning of April of the following year.
- Since 2002, annual report is made available to the public by posting it MOH website.
INFORMATION OF OTHER SOURCES

- Vital statistics: NSO
  - Number of population
  - Mid year population
  - General fertility rate

- Study on the prevalence of specific diseases
  - STI/HIV/AIDS
  - Diseases of oral cavity (Dental caries)
  - Endocrine, nutritional and metabolic (Diabetes mellitus, hypoparathyroidism, obesity)
  - External causes of morbidity and mortality (suicide)

Risk factor surveys

Percentage who currently smoke tobacco

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>26.6%</td>
<td>48.7%</td>
<td>49.4%</td>
</tr>
<tr>
<td>2009</td>
<td>27.5%</td>
<td>5.9%</td>
<td>7.0%</td>
</tr>
</tbody>
</table>

Risk factors for major NCD steps survey

<table>
<thead>
<tr>
<th>Year</th>
<th>Overweight BMI&gt;25</th>
<th>Obese BMI≥30</th>
<th>Central obesity in 15-64 year-old women</th>
<th>Central obesity in men</th>
<th>Raised BP (SBP≥140mmHg or DBP≥90mmHg)</th>
<th>Impaired fasting glycaemia</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>32.4%</td>
<td>12.9%</td>
<td>42.8%</td>
<td>20.2%</td>
<td>26.5%</td>
<td>10.3%</td>
</tr>
<tr>
<td>2009</td>
<td>40.7%</td>
<td>55.7%</td>
<td>55.7%</td>
<td>29.1%</td>
<td>27.8%</td>
<td>9.3%</td>
</tr>
</tbody>
</table>

Health system response

<table>
<thead>
<tr>
<th>Service</th>
<th>Structure</th>
<th>Specify components, specs, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private hospitals served</td>
<td>Yes/No</td>
<td>Yes</td>
</tr>
<tr>
<td>Proportion of hospitals in private sector</td>
<td>Specify %</td>
<td>Private hospitals 54.4%, Government hospitals 45.6%</td>
</tr>
</tbody>
</table>

Exposures

- STEPS survey for NCD risk factors, 2005, 2010 and 2013 (planned)
- Global Youth Tobacco Survey (GYS) – 2013 and 2017
- Global School-based Lifestyle Health Survey (GSHS) – 2017
- Health Professionals Survey (HPS) – 2007
- Global School Health Survey: 2016 and 2013 (planned)
- Survey of Salt Intake Project, 2012
- National 4th Nutrition Survey, 2011
- National Non-communicable Disease Risk Factor Survey, 2010

Health information system

- Patients clinical based Info system
  - For 3 level of care health system
  - Established Info flow

- Population based Info system
  - WHO recommendation
  - Public health promoted health system
  - Spend a lot of resources (money, time, HR)
REFERRAL SYSTEM OF MONGOLIA

Highest referral
Regional diagnostic-treatment control
Province hospital
District and Soum hospital

Specialized doctor
Specialized doctor
Basic specialized doctors
FGP, doctors
Bagh fielder

INFORMATION FLOW AND FEEDBACK

Policy Monitoring

Monitoring of policies and their implementation
Yes / No
Policies to allocate resources from fixed supply
Yes (Specify) / No
Responsible agency
Specify
Monitoring system
Specify
Policies to reduce over-consumption of food and non-alcoholic beverages in children
Yes (Specify) / No
Responsible agency
Specify
Monitoring system
Specify

Policies related to NCD

- Health Law of Mongolia, 2011
- Tobacco control Law, 2012
- State Policy on Public Health, 2001
- State Policy on Physical Culture and Sport
- National program on prevention and control of NCDs 2005
  - Cancer prevention and control subprogram, 2005-2013
  - National program on control of cardiovascular diseases, 2010-2021
  - Tobacco control action plan in line with RAP (2010-2014)
  - Food safety-National program 2009
- Education, Information and Communication Strategy for BCC, 2010

NCD targets and indicators

<table>
<thead>
<tr>
<th>Target</th>
<th>Indicator</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary risk factors</td>
<td>Prevention of tobacco, alcohol, high blood pressure, and diabetes</td>
<td>STEPS Survey, 2005-2009</td>
</tr>
<tr>
<td>Early detection rates</td>
<td>Prevalence of people with 5-year history of hypertension, diabetes, and cancer</td>
<td>Annual Health Statistics</td>
</tr>
<tr>
<td>Death rates per 10000</td>
<td>Death due to diabetes, hypertension, cancer, and other causes of death</td>
<td>Annual Health Statistics</td>
</tr>
</tbody>
</table>

NCD targets and indicators

<table>
<thead>
<tr>
<th>Target</th>
<th>Indicator</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carry out monitoring of the prevalence of NCDs in all age groups and districts</td>
<td>Number of cases and districts involved in monitoring and their parentage</td>
<td>STEPS Survey, 2005-2009</td>
</tr>
<tr>
<td>Conduct STEPS survey as per directions of WHO</td>
<td>Survey report</td>
<td></td>
</tr>
<tr>
<td>Conduct STEPS survey as per directions of WHO</td>
<td>Survey report</td>
<td></td>
</tr>
<tr>
<td>Carry out risk assessment and control of NCDs</td>
<td>Surveillance system</td>
<td></td>
</tr>
<tr>
<td>Provide national media communication for the population in every year, in order to make available data on major NCDs and take necessary measures</td>
<td>Percentage of people involved in media examination</td>
<td></td>
</tr>
</tbody>
</table>
Challenges for population based info system

- Political will
- Capacity (what indicators, how set up, need model, PC, training, regulation
- NCD surveillance is not institutionalized and rarely integrated into the national health information systems
- Current capacities for NCD surveillance are inadequate

Policy Opportunities for NCD surveillance

- National policy on NCDs, Tobacco, Alcohol, Nutrition, Physical Activity, Salt reduction
- Establishment of national registry containing reporting of incidence, mortality, prevalence, survival, treatment and palliative care, using CanReg® software, complemented as appropriate by other similar software packages 2010-2013
- Establishment of injury surveillance 2011-2013 initiated the establishment of stroke and heart diseases registry 2012 - 2013

System opportunities for NCD surveillance

- Leadership WHO and roadmap of the country context
- WHO Health project is aimed to implement the population based early detection, cancer registry (guideline, training, pilot action)
- National capacity
  - established public health system by the Health law 2011
  - National Center for Public Health
  - Public Health Centers established in each district & province
  - the capacity to conduct IF surveys
  - conducted Risk Factor Surveys
- NCPR role:
  - surveillance (RF, its counseling, quit, screening NCDs)
  - Information & networking (local, policy makers, WHO)
  - laboratory (nutrition, body composition, polyclinic, environment)
- response (NCDs & EH through MSA & community)
**NCD Surveillance Framework**

Agnes Benegas-Segarra, MD
Philippines

**Outcomes - Premature mortality**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical certification</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>ICD coding</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Proportion of the country covered</td>
<td>Nationwide</td>
<td></td>
</tr>
<tr>
<td>Responsible agency</td>
<td>National Statistics Office (NSO)</td>
<td></td>
</tr>
<tr>
<td>Rate of Health Ministry</td>
<td>Reporting for LSUS, consolidation of reports based on NSO (Philippines Health Statistics)</td>
<td></td>
</tr>
<tr>
<td>Training programmes for ICD coding</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Verbal autopsy studies</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Latest data available on cause-specific mortality</td>
<td>2009</td>
<td></td>
</tr>
</tbody>
</table>

**Current situation**

National System on Data Collection on NCDs

- National Nutrition and Health Survey, done every 5 years
- Global Adult Tobacco Survey (GATS)
- Global Youth Tobacco Survey (GYTS), Global School Personnel Survey (GSPS)
- Global School-based Health Survey (GSHS)

Outcomes:
- NCD-specific Mortality data
- Cancer registry data
- Hospital-based NCD registry data
- FHSIS

Health System capacity and response:
- KP dashboard, LGU scorecard
- Program Implementation Review (PIR)

**Mortality Data**

**Morbidity Trend:** Malignant Neoplasm and Diseases of the Heart Rate per 100 000 Population, Philippines, 1999-2009
Outcome-cancer incidence

<table>
<thead>
<tr>
<th>Population-based cancer registry</th>
<th>Year/It</th>
<th>TFR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Established in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population covered</td>
<td>Specify %</td>
<td></td>
</tr>
<tr>
<td>Responsible agency</td>
<td>Specify</td>
<td></td>
</tr>
<tr>
<td>Latest report</td>
<td>Specify</td>
<td></td>
</tr>
</tbody>
</table>

Note: DOH-RCR covers 5.67 M; PHS-MCR covers 1.29 M; 2000 pop is 76.51 M.

Most Common Cancer Sites, Both Sexes
Metro Manila & Rizal, 1998-2002

Breast
Bladder, Prostate
Lung
Liver
Colon
Rectum
Non-Hodgkin’s Lymphoma
Cervix, Uterus

Most Common Cancer Sites, Males
Metro Manila & Bicol, 1998-2002

Breast
Bladder, Prostate
Lung
Liver
Colon
Rectum
Non-Hodgkin’s Lymphoma

Most Common Cancer Sites, Females
Metro Manila & Rizal, 1998-2002

Breast
Bladder, Prostate
Lung
Liver
Colon
Rectum
Non-Hodgkin’s Lymphoma

Most Common Cancer Sites, Both Sexes
Metro Manila & Rizal, 1998-2002

Ovarian Cancer, Uterus
Thyroid
Brain, Spinal
Liver
Rectum
Non-Hodgkin’s Lymphoma
Exposures

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>1998</th>
<th>2003</th>
<th>2008</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>21.0</td>
<td>22.5</td>
<td>25.3</td>
<td>SBP ≥ 140, DBP ≥ 90</td>
</tr>
<tr>
<td>Hyperglycemia</td>
<td>3.9</td>
<td>3.4</td>
<td>4.8</td>
<td>FBS ≥ 126 mg/dL</td>
</tr>
<tr>
<td>Total cholesterol</td>
<td>6.0</td>
<td>8.3</td>
<td>19.2</td>
<td>≥ 240 mg/dL</td>
</tr>
<tr>
<td>LDL-c</td>
<td>8.1</td>
<td>11.2</td>
<td>17.8</td>
<td>≥ 160 mg/dL</td>
</tr>
<tr>
<td>HDL-c</td>
<td>76.6</td>
<td>54.2</td>
<td>64.1</td>
<td>&lt; 40 mg/dL</td>
</tr>
<tr>
<td>Triglycerides</td>
<td>8.7</td>
<td>9.4</td>
<td>14.6</td>
<td>≥ 200 mg/dL</td>
</tr>
<tr>
<td>BMI (Overweight)</td>
<td>20.2</td>
<td>24.0</td>
<td>26.6</td>
<td>BMI ≥ 25.0</td>
</tr>
</tbody>
</table>

Risk factor surveys

Comparative Data on Obesity Among Different Age Groups, Phil, 2008

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Prevalence (N/9,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children 0-5 years old</td>
<td>2.0</td>
</tr>
<tr>
<td>Adult 15-19 years old</td>
<td>4.6</td>
</tr>
<tr>
<td>Adult 20-39 years old</td>
<td>6.5</td>
</tr>
<tr>
<td>Adult 40-59 years old</td>
<td>6.6</td>
</tr>
<tr>
<td>Older persons 60 years old and above</td>
<td>5.2</td>
</tr>
</tbody>
</table>

Prevalence of hypertension, hyperglycemia, dyslipidemia & overweight
1998, 2003 and 2008 Philippine NNS, FNRI

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>2003</th>
<th>2008</th>
<th>P-value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>20.8</td>
<td>28.4</td>
<td>0.0670</td>
<td>SBP ≥ 140, DBP ≥ 90</td>
</tr>
<tr>
<td>Hyperglycemia</td>
<td>3.4</td>
<td>3.4</td>
<td>0.9700</td>
<td>FBS ≥ 126 mg/dL</td>
</tr>
<tr>
<td>Total cholesterol</td>
<td>3.2</td>
<td>4.0</td>
<td>≥ 240 mg/dL</td>
<td></td>
</tr>
<tr>
<td>LDL-c</td>
<td>8.1</td>
<td>8.1</td>
<td>≥ 160 mg/dL</td>
<td></td>
</tr>
<tr>
<td>HDL-c</td>
<td>0.2</td>
<td>0.2</td>
<td>&lt; 40 mg/dL</td>
<td></td>
</tr>
<tr>
<td>Triglycerides</td>
<td>12.5</td>
<td>18.5</td>
<td>≥ 200 mg/dL</td>
<td></td>
</tr>
<tr>
<td>BMI (Overweight)</td>
<td>20.9</td>
<td>22.0</td>
<td>BMI ≥ 25.0</td>
<td></td>
</tr>
</tbody>
</table>

Age-adjusted Prevalence of some risk factors to NCDs, Philippines: 2003 and 2008

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>2003</th>
<th>2008</th>
<th>P-value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>24.5</td>
<td>28.4</td>
<td>0.0670</td>
<td>SBP ≥ 140, DBP ≥ 90</td>
</tr>
<tr>
<td>Hyperglycemia</td>
<td>3.4</td>
<td>3.4</td>
<td>0.9700</td>
<td>FBS ≥ 126 mg/dL</td>
</tr>
<tr>
<td>Total cholesterol</td>
<td>3.2</td>
<td>4.0</td>
<td>≥ 240 mg/dL</td>
<td></td>
</tr>
<tr>
<td>LDL-c</td>
<td>8.1</td>
<td>8.1</td>
<td>≥ 160 mg/dL</td>
<td></td>
</tr>
<tr>
<td>HDL-c</td>
<td>0.2</td>
<td>0.2</td>
<td>&lt; 40 mg/dL</td>
<td></td>
</tr>
<tr>
<td>Triglycerides</td>
<td>12.5</td>
<td>18.5</td>
<td>≥ 200 mg/dL</td>
<td></td>
</tr>
<tr>
<td>BMI (Overweight)</td>
<td>20.9</td>
<td>22.0</td>
<td>BMI ≥ 25.0</td>
<td></td>
</tr>
</tbody>
</table>

Prevalence of hypertension, hyperglycemia, dyslipidemia & overweight among Males
2003 and 2008 Philippine NNS, FNRI

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>2003</th>
<th>2008</th>
<th>P-value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>24.5</td>
<td>28.4</td>
<td>0.0670</td>
<td>SBP ≥ 140, DBP ≥ 90</td>
</tr>
<tr>
<td>Hyperglycemia</td>
<td>3.4</td>
<td>3.4</td>
<td>0.9700</td>
<td>FBS ≥ 126 mg/dL</td>
</tr>
<tr>
<td>Total cholesterol</td>
<td>3.2</td>
<td>4.0</td>
<td>≥ 240 mg/dL</td>
<td></td>
</tr>
<tr>
<td>LDL-c</td>
<td>8.1</td>
<td>8.1</td>
<td>≥ 160 mg/dL</td>
<td></td>
</tr>
<tr>
<td>HDL-c</td>
<td>0.2</td>
<td>0.2</td>
<td>&lt; 40 mg/dL</td>
<td></td>
</tr>
<tr>
<td>Triglycerides</td>
<td>12.5</td>
<td>18.5</td>
<td>≥ 200 mg/dL</td>
<td></td>
</tr>
<tr>
<td>BMI (Overweight)</td>
<td>20.9</td>
<td>22.0</td>
<td>BMI ≥ 25.0</td>
<td></td>
</tr>
</tbody>
</table>

Age-adjusted Prevalence of some risk factors to NCDs among Male Adults, Philippines: 2003 and 2008

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>2003</th>
<th>2008</th>
<th>P-value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>24.5</td>
<td>28.4</td>
<td>0.0670</td>
<td>SBP ≥ 140, DBP ≥ 90</td>
</tr>
<tr>
<td>Hyperglycemia</td>
<td>3.4</td>
<td>3.4</td>
<td>0.9700</td>
<td>FBS ≥ 126 mg/dL</td>
</tr>
<tr>
<td>Total cholesterol</td>
<td>3.2</td>
<td>4.0</td>
<td>≥ 240 mg/dL</td>
<td></td>
</tr>
<tr>
<td>LDL-c</td>
<td>8.1</td>
<td>8.1</td>
<td>≥ 160 mg/dL</td>
<td></td>
</tr>
<tr>
<td>HDL-c</td>
<td>0.2</td>
<td>0.2</td>
<td>&lt; 40 mg/dL</td>
<td></td>
</tr>
<tr>
<td>Triglycerides</td>
<td>12.5</td>
<td>18.5</td>
<td>≥ 200 mg/dL</td>
<td></td>
</tr>
<tr>
<td>BMI (Overweight)</td>
<td>20.9</td>
<td>22.0</td>
<td>BMI ≥ 25.0</td>
<td></td>
</tr>
</tbody>
</table>

Risk factors

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>2003</th>
<th>2008</th>
<th>P-value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>24.5</td>
<td>28.4</td>
<td>0.0670</td>
<td>SBP ≥ 140, DBP ≥ 90</td>
</tr>
<tr>
<td>Hyperglycemia</td>
<td>3.4</td>
<td>3.4</td>
<td>0.9700</td>
<td>FBS ≥ 126 mg/dL</td>
</tr>
<tr>
<td>Total cholesterol</td>
<td>3.2</td>
<td>4.0</td>
<td>≥ 240 mg/dL</td>
<td></td>
</tr>
<tr>
<td>LDL-c</td>
<td>8.1</td>
<td>8.1</td>
<td>≥ 160 mg/dL</td>
<td></td>
</tr>
<tr>
<td>HDL-c</td>
<td>0.2</td>
<td>0.2</td>
<td>&lt; 40 mg/dL</td>
<td></td>
</tr>
<tr>
<td>Triglycerides</td>
<td>12.5</td>
<td>18.5</td>
<td>≥ 200 mg/dL</td>
<td></td>
</tr>
<tr>
<td>BMI (Overweight)</td>
<td>20.9</td>
<td>22.0</td>
<td>BMI ≥ 25.0</td>
<td></td>
</tr>
</tbody>
</table>
Prevalence of hypertension, hyperglycemia, dyslipidemia & overweight among Females 2003 and 2008 Philippine NNS, FNRI

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>2003</th>
<th>2008</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>20.0</td>
<td>22.2</td>
<td>Sbp ≥ 140, DBP ≥ 90</td>
</tr>
<tr>
<td>Hyperglycemia</td>
<td>5.5</td>
<td>6.5</td>
<td>FBS ≥ 174 mg/dL</td>
</tr>
<tr>
<td>Total cholesterol</td>
<td>11.5</td>
<td>12.8</td>
<td>≥ 240 mg/dL</td>
</tr>
<tr>
<td>HDL-c</td>
<td>16.1</td>
<td>15.0</td>
<td>≥ 180 mg/dL</td>
</tr>
<tr>
<td>Triglycerides</td>
<td>42.7</td>
<td>37.8</td>
<td>&lt;150 mg/dL</td>
</tr>
<tr>
<td>BMI (Overweight)</td>
<td>23.3</td>
<td>27.3</td>
<td>BMI ≥ 25.0</td>
</tr>
</tbody>
</table>

Age-adjusted Prevalence of some risk factors to NCDs among Female Adults, Philippines: 2003 and 2008

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>2003</th>
<th>2008</th>
<th>P-value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>18.4</td>
<td>21.4</td>
<td>0.040</td>
<td>Sbp ≥ 140, DBP ≥ 90</td>
</tr>
<tr>
<td>Hyperglycemia</td>
<td>14.4</td>
<td>14.1</td>
<td>0.9701</td>
<td>FBS ≥ 174 mg/dL</td>
</tr>
<tr>
<td>Dyslipidemia</td>
<td>67.0</td>
<td>79.0</td>
<td>0.6741</td>
<td>≥ 240 mg/dL</td>
</tr>
<tr>
<td>Obesity by BMI</td>
<td>6.3</td>
<td>6.1</td>
<td>0.9426</td>
<td>≥ 30.0</td>
</tr>
<tr>
<td>Obesity by WHtR</td>
<td>12.0</td>
<td>10.2</td>
<td>0.4411</td>
<td>≥ 0.85</td>
</tr>
<tr>
<td>Smoking</td>
<td>11.4</td>
<td>11.7</td>
<td>0.0013</td>
<td>Current smokers</td>
</tr>
</tbody>
</table>

Distribution of population by physical inactivity Philippine NNS, FNRI

<table>
<thead>
<tr>
<th>Physical Inactivity Domain</th>
<th>2003 (%)</th>
<th>2008 (%)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupational</td>
<td>67.0</td>
<td>76.3</td>
<td>0.0000</td>
</tr>
<tr>
<td>Travel-related</td>
<td>91.0</td>
<td>93.8</td>
<td>0.9999</td>
</tr>
<tr>
<td>Leisure time physical activity ≤ 2 times per week</td>
<td>50.0</td>
<td>89.1</td>
<td>0.1269</td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupational</td>
<td>82.1</td>
<td>76.2</td>
<td>0.0035</td>
</tr>
<tr>
<td>Travel-related</td>
<td>94.3</td>
<td>95.2</td>
<td>0.6022</td>
</tr>
<tr>
<td>Leisure time physical activity ≤ 2 times per week</td>
<td>95.5</td>
<td>95.7</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

2009 Global Adult Tobacco Survey (GATS)

- 28.3% of adults currently smoke (17.3 M)
  - 47.7% males (14.6M)
  - 9.0% females (2.8M)
- 36.9% were exposed to tobacco smoke in enclosed areas at their workplace
- 54.4% were exposed to smoke at home.

Tobacco Use Among the Youth,

Current Cigarette Smoking Among Adolescents
- Both Sexes: 8.9%
- Boys: 12.9%
- Girls: 5.3%

(Source: GYTS 2011)
Trends in overweight among adolescents

<table>
<thead>
<tr>
<th>Year</th>
<th>1993</th>
<th>1998</th>
<th>2003</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
<td>2.8</td>
<td>2.9</td>
<td>3.2</td>
<td>3.1</td>
</tr>
<tr>
<td>Percent</td>
<td>4.2</td>
<td>4.1</td>
<td>4.9</td>
<td>5.8</td>
</tr>
</tbody>
</table>

Field Health Service Information System

- It is a network of information
- Intended to address needs of DOH and LGU staff with managerial or supervisory functions
- Monitors health service delivery in the local and nationwide capacity
- To enable it to better manage nationwide health service delivery
- For monitoring activities in each program
- Official designated statistics of DOH (E.O.352)
- Down to the village level

Proposed Integrated Chronic Non-Communicable Disease Registry (ICNDRS)

Health system response

<table>
<thead>
<tr>
<th>Field of Work</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Information System</td>
<td>Field surveyors, nurses, etc.</td>
</tr>
<tr>
<td>Annual Hospital Census</td>
<td>Yes</td>
</tr>
<tr>
<td>Proportion of Hospitals in private sector</td>
<td>Specific %</td>
</tr>
<tr>
<td>Information on the Following:</td>
<td></td>
</tr>
<tr>
<td>Directed vector control</td>
<td>Yes or No</td>
</tr>
<tr>
<td>HIV/AIDS program</td>
<td>Yes or No</td>
</tr>
<tr>
<td>Essential NCD medicines and technologies</td>
<td>Yes or No</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>Yes or No</td>
</tr>
<tr>
<td>Vaccination coverage for Hepatitis B and Adult Vaccine</td>
<td>Yes</td>
</tr>
<tr>
<td>Information available</td>
<td>Specify</td>
</tr>
<tr>
<td>Responsible agency</td>
<td>DOH</td>
</tr>
</tbody>
</table>

Recording Tools

- Individual Treatment Record (ITR)
- Target Client List (TCL)
- Summary Table
- HPA
- Morbidity Disease Monthly Consolidation Table (MCT)

Reporting Forms

- Monthly Form
  - M1 - Program
  - M2 - Morbidity
  - Quarterly Form
  - Q1 - Program
  - Q2 - Morbidity
  - Annual Forms
  - A - BHS (Village)
  - A1 - Vital Statistics
  - A2 - Morbidity
  - A3 - Mortality

Policy Monitoring

- Policies to eliminate PHI's from food supply
  - Yes (Specify)
  - No
  - None set
- Responsible agency
  - FDA and DOH
- Monitoring system
  - Specify
  - Specify
  - Specify
  - Specify
  - Specify
- Policies to reduce marketing of food and non-alcoholic beverages to children
  - Yes (Specify)
  - No
  - None set
- Responsible agency
  - DOH
- Monitoring system
  - Specify
  - Regional, Provincial, and Municipal Level
### Policies related to NCD

- DOH AO No 2011 -003, April 2011:
  - National Policy on Strengthening the Prevention and Control of Chronic Lifestyle Related Non-Communicable Diseases)
- RA 9211: Tobacco Regulatory Act of 2003
- Framework Convention on Tobacco Control (FCTC)

### Key Performance Indicators

- Reduction in prevalence of hypertension among adult males from 24.2 to 19.6.
- Reduction in prevalence of adults with high fasting blood sugar from 3.4 to 3.4.
- Reduction in prevalence of current smoking among adult males from 56.3 to 40.0.
- Reduction in prevalence of current smoking among adolescent females from 8.80 to 7.2
- Reduction in prevalence of adults with high physical inactivity from 60.5 to 50.8
- Increase in per capita total vegetable from 111.0 (g/day) to 133.0 (g/day)

### Challenges for NCD surveillance

- Sustainability/funding
- Lack of timely reports (latest mortality data is 2009; cancer incidence data 2002, etc)
- Lack of access to NCD data from private hospitals and clinics
- Surveys are national in scope, no sub-national data on NCD risk factors

### Opportunities for NCD surveillance

- WHO framework and adoption of global NCD indicators can synchronize/harmonize national surveillance efforts
- Integration of NCD indicators in KP Dashboard and LGU scorecard
- Philhealth reporting
NCD surveillance framework
Name of country: Vietnam
Presenter: Vietnamese Team

Current situation
- Exposures
  - National STEPS survey in 2009
  - GATS in 2010
  - Nutrition survey 2005,
  - Surveys from related institutes (diabetes, hypertension... 2005, 2009)
- Outcomes
  - Community based Cancer registry: 9 centers
  - Hospital reports: All levels, governments ones
  - Death report: from commune level: Quality limited
- Health system response:
  - Routine reporting system from all levels to MoH

MoH data Collection System Diagram

Central level
National/Regional Hospitals
Provincial level
Provincial Hospitals
District level
District Health Unit
Commune level
District Health Center (Vaccine + Prevention)

MoH data Collection System Diagram

Outcomes-Premature mortality

| National system for death registration | Yes | The system for death registration isn't comes
| Medical certification | Yes | Even for deaths at hospital,
| ICD coding | Yes | For deaths in hospitals, for deaths in community
| Prevalence of the cause covered | Specify | All time
| Responsible agency | Specify | Hospital/Community health center/Community government
| Ratio of Health Ministry | Specify | Managing/collecting/collecting data of the reporting within health system of all levels
| Training programmes for ICD coding | Yes | For applying in Hospitals, in community
| Verbal autopsy studies | No | Not applied in MoH reporting system
| Latest data available on cause-specific mortality | Specify | Health statistic year book 2010, MoH

Mortality data
- Some information from Health statistic year book 2010, MoH

Outcomes-cancer incidence

| Population-based cancer registry | Yes | 6/9 centers throughout the country
| Established in | Specify | The first one: 2000.
| Population covered | Specify | About 30%
| Responsible agency | Specify | National Cancer Hospital
| Latest report | Specify year | 2009,
Cancer data
- Estimation from the hospital based Cancer registry
  150,000 new cases, 75,000 deaths per year

Risk factor surveys
- STEPS survey 2009-2010 (Age 25-64)

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male current smoking</td>
<td>54.8%</td>
</tr>
<tr>
<td>Male drink ≥5 drinks in a drinking day in the last week</td>
<td>25.2%</td>
</tr>
<tr>
<td>Physical inactivity</td>
<td>29.9%</td>
</tr>
<tr>
<td>Consume less than 5 servings of vegetable/fruit</td>
<td>80.4%</td>
</tr>
<tr>
<td>Overweight/obesity (BMI≥25)</td>
<td>26.9%</td>
</tr>
<tr>
<td>Total cholesterol (&gt;5 mmol/L)</td>
<td>34.8%</td>
</tr>
</tbody>
</table>

Health information system
- Result of latest health system survey?
  No

Policy Monitoring
- Monitoring of policies and their implementation
  Yes/No

Health system response
- General health information system under MoH, covering all levels (Central, provincial, and communal)
  Hospital reporting system
  Communicable disease and epidemic surveillance system
  Information system of vertical health programs

Exposures
- National health behavior/nutrition surveys
  Yes

Health Information system structure
- Specify contents, systems, etc.

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Description</th>
<th>Responsible agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male current smoking</td>
<td>Yes</td>
<td>STEPS survey 2009-2010</td>
</tr>
<tr>
<td>Male drink ≥5 drinks in a drinking day in the last week</td>
<td>Yes</td>
<td>STEPS survey 2009-2010</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter covered</th>
<th>Description</th>
<th>Responsible agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco use, alcohol consumption, vegetable/fruit and salt consumption, physical inactivity</td>
<td>Yes</td>
<td>STEPS survey 2009-2010</td>
</tr>
<tr>
<td>Height, weight, waist, BP</td>
<td>Yes</td>
<td>STEPS survey 2009-2010</td>
</tr>
<tr>
<td>Fasting glucose and total cholesterol</td>
<td>Yes</td>
<td>STEPS survey 2009-2010</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>National (or sub-national)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specify national coverage</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Latest report</th>
<th>Description</th>
<th>Responsible agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specify year</td>
<td>STEPS survey 2009-2010</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Monitoring of policies and their implementation</th>
<th>Description</th>
<th>Responsible agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy to reduce marketing of food and non-alcoholic beverages to children</td>
<td>Yes/No</td>
<td>MoH, MoH, provincial programs, EPI program</td>
</tr>
<tr>
<td>Responsible agency</td>
<td>Specify</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Policy Monitoring</th>
<th>Description</th>
<th>Responsible agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policies to reduce marketing of food and non-alcoholic beverages to children</td>
<td>Yes/No</td>
<td>MoH, provincial programs, EPI program</td>
</tr>
<tr>
<td>Responsible agency</td>
<td>Specify</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Policy Monitoring</th>
<th>Description</th>
<th>Responsible agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policies to reduce marketing of food and non-alcoholic beverages to children</td>
<td>Yes/No</td>
<td>MoH, provincial programs, EPI program</td>
</tr>
<tr>
<td>Responsible agency</td>
<td>Specify</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Policy Monitoring</th>
<th>Description</th>
<th>Responsible agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policies to reduce marketing of food and non-alcoholic beverages to children</td>
<td>Yes/No</td>
<td>MoH, provincial programs, EPI program</td>
</tr>
<tr>
<td>Responsible agency</td>
<td>Specify</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Policy Monitoring</th>
<th>Description</th>
<th>Responsible agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policies to reduce marketing of food and non-alcoholic beverages to children</td>
<td>Yes/No</td>
<td>MoH, provincial programs, EPI program</td>
</tr>
<tr>
<td>Responsible agency</td>
<td>Specify</td>
<td></td>
</tr>
</tbody>
</table>
**Policies related to NCD**

- Law on prevention and control of the health effects of tobacco (enforced from 2013)
- National policy and Law on prevention and control of harmful use of alcohol (being developed)
- National strategy of nutrition 2012-2020 (one component for prevention of overweight/obesity and NCDs)
- Law on physical exercise and sports (general, not specific for prevention of NCDs)
- Decision NO 77/2002/T-Ttg of Prime Minister on NCDs control program 2002-2010
- ...

**Challenges/difficulties for NCD surveillance**

- Management:
  - National surveillance system not yet fully established
  - Different focal points for NCD surveillance activities
  - Very limited resources for surveillance
- Exposures:
  - Separated/duplicated surveys for NCDs risk factors/diseases
  - Limited of applying STEPSwise in surveillance
- No National NCD infobase
- Outcomes: Lack of NCDs specific morbidity and mortality
  - Poor quality of mortality data from community;
  - Estimation based on Hospital registry and report...

**Proposed NCD targets and indicators**

<table>
<thead>
<tr>
<th>Target</th>
<th>Indicator</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction of Mortality of the ages 30 - 70 due to NCDs</td>
<td>25% relative reduction of mortality due to CVD, cancer, diabetes or COPD</td>
<td>Survey</td>
</tr>
<tr>
<td>Cancer control</td>
<td>Control of Cancer Incidence/Deaths</td>
<td>Registry</td>
</tr>
<tr>
<td>Hypertension control</td>
<td>Reduction of 5 mm Hg of mean blood pressure</td>
<td>Survey</td>
</tr>
<tr>
<td></td>
<td>90% of detected hypertensive persons manage by program</td>
<td></td>
</tr>
<tr>
<td>Salt/sodium intake reduction</td>
<td>20% relative reduction of salt consumption per capita</td>
<td>Survey</td>
</tr>
<tr>
<td>Tobacco control</td>
<td>15% relative reduction of male smoking prevalence</td>
<td>Survey</td>
</tr>
<tr>
<td>Promoting Physical activity</td>
<td>19% relative reduction of Physical inactivity</td>
<td>Survey</td>
</tr>
<tr>
<td>Healthy diet</td>
<td>20% increase of adults consuming &gt;=5 servings of vegetables/fruits per day</td>
<td>Survey</td>
</tr>
</tbody>
</table>

**Opportunities for NCD surveillance**

- NCD prevention and control become priority at global, Regional and Country levels.
- WHO guidelines, tools (STEPS, Set of indicators and targets.
- Health information system and surveillance for CD and other health issues is in place with can be used for NCDs.
### RISK FACTOR SURVEILLANCE IN ADULTS

**Country:** CAMBODIA

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation</th>
<th>Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
</table>
| What are the risk factor surveys for adults in the country? | ▪ Harmful use of alcohol  
▪ Physical inactivity  
▪ Tobacco  
▪ Fruit and vegetable intake  
▪ High blood pressure  
▪ High blood glucose  
▪ Total cholesterol | ▪ Mobilize funding to support the all STEP; STEP1, STEP2, and STEP3 | ▪ WHO support  
▪ Plan ahead to earmark budget for the next STEP survey |
| What staffing, governance and management structures are in place? | ▪ Department of Preventive Medicine in collaboration with University of Health Sciences (UHS) to conduct STEPS survey | ▪ Staff shortage  
▪ Technical capacity | ▪ Propose to the MoH to recruit more staff to work for research unit in the UHS  
▪ Capacity building for health research supported by WHO |
| What is the technical capacity (staff and software) to conduct such surveys? | ▪ Staffs at Department of Preventive Medicine and UHS have experience to conduct STEPS survey 2010. However they still need technical assistance from WHO  
▪ Software is available | ▪ Motivation of the government staff  
▪ Daily incentive is needed to support the staff to work during STEPS survey  
▪ Technical capacity of the staff | ▪ Building capacity of the staff working in the Research Unit at the UHS  
▪ Technical support and training from WHO |
| How has data from risk factor surveys in adults been used in your country and by whom? (e.g. MOH NCD coordinator advocated to finance dept for funds June 2012) | ▪ Being used to develop National Strategic Plan for Prevention and Control of NCD 2013-2020, National Health Strategic Plan, and MSA  
▪ Served as baseline data in order to set target and indicator in line with voluntary global target for prevention and control of NCD  
▪ MoH, Development Partners, NGOs starting using this STEPS 2010 data | ▪ Difficulty in engaging other governmental agencies to address the burden of NCD risk factors | ▪ Multisectoral Action Plan for Prevention and Control of NCD should be developed  
▪ Coordination mechanism to implement this Multisectoral Action Plan for Prevention and Control needs to be clearly identified |
| When is your suggested plan to conduct the next adult risk factor survey in your country? | ▪ The next STEPS survey will be conducted in 2015 | ▪ Limited fund | ▪ Financial support from WHO is needed |
**Country: LAO PDR**

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation</th>
<th>Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
</table>
| What are the risk factor surveys for adults in the country? | • STEPS  
• GYTS | • Human  
• Financial  
• Technical expertise | • MSA  
• Stakeholders: National & international  
• TA (WHO...)

| What staffing, governance and management structures are in place? | • DHC-MOH  
• NIOPH | No National NCD committee  
No Full time staff | Set up National NCD committee

| What is the technical capacity (staff and software) to conduct such surveys? | • WHO provided | • Human  
• Financial  
• Technical expertise | • MSA  
• Stakeholders: National & international  
• TA (WHO...)

| How has data from risk factor surveys in adults been used in your country and by whom? (e.g. MOH NCD coordinator advocated to finance dept for funds June 2012) | • Drafting NCD policy  
• MSA  
• Tobacco law  
• MOH NCD committee  
• Live ministries | MSA collaboration | • MSA collaboration  
• Funding

| When is your suggested plan to conduct the next adult risk factor survey in your country? | • 2013 | | |

---

Day 2 Group Work (Risk factor surveys)
<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation / 3 Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the risk factor surveys for adults in the country?</td>
<td>2 STEPS surveys done (2005 and 2009) and the 3rd repeat to be conducted in 2013.</td>
<td></td>
</tr>
<tr>
<td>What staffing, governance and management structures are in place?</td>
<td>Coordinating Committee at the Ministry of Health. Implementing agency – National Center for Public Health Executing Agency - WHO Funding agency- MCA NCD project</td>
<td></td>
</tr>
<tr>
<td>What is the technical capacity (staff and software) to conduct such surveys?</td>
<td>1. National Center for Public Health - Staff for field work and data analysis and reporting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Other technical Agencies and Local Government</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. WHO and CDC – overall supervision - data analysis</td>
<td></td>
</tr>
<tr>
<td>How has data from risk factor surveys in adults been used in your country and by whom? (e.g. MOH NCD coordinator advocated to finance dept for funds June 2012)</td>
<td>1. 2006 STEPS survey results raised funding resources</td>
<td>- Strengthen coordination</td>
</tr>
<tr>
<td></td>
<td>2. 2010 STEPS survey results are inputs to implement National Programme for NCD Prevention and Control</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. 2013 STEPS survey results will be served to assess the National Programme for NCD Prevention and Control and baseline for the new Multisectoral Action Plan on NCD Prevention and Control - Data utilization is poor</td>
<td></td>
</tr>
<tr>
<td>When is your suggested plan to conduct the next STEPS survey in your country?</td>
<td>2013</td>
<td></td>
</tr>
</tbody>
</table>
Country: PHILIPPINES

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation / 3 Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the risk factor surveys for adults in the country?</td>
<td>• Prevalence of risk factors (FNRI-NNS, GATS ), several surveys being conducted but targeting the same population</td>
<td>• Convincing the stakeholders of the advantages of integrating the surveys (DOH, US-CDC, WHO etc)</td>
</tr>
<tr>
<td></td>
<td>• Big budget Requirement; integrating the surveys into one comprehensive survey</td>
<td>• Include the budget in the Sin tax allocation.</td>
</tr>
<tr>
<td>What staffing, governance and management structures are in place?</td>
<td>• FNRI for the STEPS; National Statistics Office for GATS; DOH not part of the TWG/committee</td>
<td>Include in the MOU not just funding assistance but technical collaboration</td>
</tr>
<tr>
<td></td>
<td>• Improve the technical collaboration between FNRI and DOH</td>
<td></td>
</tr>
<tr>
<td>What is the technical capacity (staff and software) to conduct such surveys?</td>
<td>FNRI and NSO have the mandate and the technical capability to conduct and manage surveys</td>
<td></td>
</tr>
<tr>
<td>How has data from risk factor surveys in adults been used in your country and by whom? (e.g. MOH NCD coordinator advocated to finance dept for funds June 2012)</td>
<td>Used by DOH and private sector for policy development and improved program implementation including monitoring of intermediate health outcomes (e.g. Sin Tax Bill)</td>
<td></td>
</tr>
<tr>
<td>When is your suggested plan to conduct the next STEPS survey in your country?</td>
<td>Step Survey conducted by 2013</td>
<td></td>
</tr>
</tbody>
</table>
## What are the risk factor surveys for adults in the country?
- National STEPS survey 2009-2010
- GATS 2010

## What staffing, governance and management structures are in place?
- MoH → MSA → NCD office
- National Institutes (Nutrition, Diabetes, Hypertension, cancer)

## What is the technical capacity (staff and software) to conduct such surveys?
- International consultants

## How has data from risk factor surveys in adults been used in your country and by whom? (e.g. MOH NCD coordinator advocated to finance dept for funds June 2012)
- Data is available in website.
- Data for advocate and develop National target program on (Diab, Hyp., cancer, COPD, MH)

## When is your suggested plan to conduct the next adult risk factor survey in your country?
- 2014

---

### Key Challenges

- Do duplicated surveys
- Limited funding
- Structures are not specified.
- No focal point.
- Depend on International consultant

### What can be done to address these challenges?

- Integrated surveys
- Mobilize resource.
- Assign one institute to be a focal point of survey.
- Building capacity for country's experts.
- Integrated surveys
- Assign one institute to be a focal point of survey.
RISK FACTOR SURVEILLANCE IN CHILDREN/YOUTH

Country: CAMBODIA

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation</th>
<th>Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the risk factor surveys for children/youth in the country?</td>
<td>§ GSHS 2012 is in progress</td>
<td>§ Anticipated low participation?</td>
<td>§ Training data collection</td>
</tr>
<tr>
<td></td>
<td>§ Except protective factor related questionnaires</td>
<td>§ Lack of coordination within the MoE</td>
<td>§ MoH ensure collaboration with the MoE</td>
</tr>
<tr>
<td>What staffing, governance and management structures are in place?</td>
<td>§ Department of Preventive Medicine in collaboration with the School Health</td>
<td>§ Shortage of staff to fully work for this GSHS</td>
<td>§ Recruit staff</td>
</tr>
<tr>
<td></td>
<td>Department, Ministry of Education Youth and Sport to conduct this GSHS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is the technical capacity (staff and software) to conduct such surveys?</td>
<td>§ 2 staff from Department of Preventive Medicine and School Health Department</td>
<td>Time constrain</td>
<td>§ Timeframe expanded</td>
</tr>
<tr>
<td></td>
<td>trained on GSHS with the WHO support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How has data from risk factor surveys in youth/children been used in your</td>
<td>§ Being used to update school health policy</td>
<td>§ Difficulty in engaging other governmental agencies to address the burden</td>
<td></td>
</tr>
<tr>
<td>country and by whom?</td>
<td>§ Served as baseline data in order to set</td>
<td>of NCD risk factors</td>
<td>§ MSA</td>
</tr>
<tr>
<td></td>
<td>target and indicator in line with voluntary</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>global target for prevention and control of NCD</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>§ MoH, Development Partners, NGOs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When is your suggested plan to conduct the next risk</td>
<td>§ GSHS is suggested to do again in 2016</td>
<td>§ Limited funding</td>
<td>§ WHO support</td>
</tr>
<tr>
<td>children/youth factor survey in your country?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Country: LAO PDR

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation</th>
<th>Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the risk factor surveys for children/youth in the country?</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What staffing, governance and management structures are in place?</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is the technical capacity (staff and software) to conduct such surveys?</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How has data from risk factor surveys in youth/children been used in your country and by whom?</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When is your suggested plan to conduct the next risk children/youth factor survey in your country?</td>
<td>2013</td>
<td>• Human</td>
<td>• Stakeholders: National &amp; international</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Financial</td>
<td>• TA (WHO...)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Technical expertise</td>
<td></td>
</tr>
</tbody>
</table>
Country: MONGOLIA

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation / 3 Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the risk factor surveys for children/youth in the country?</td>
<td>2003 - GYTS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2007 - GYTS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2010 - GSHS</td>
<td></td>
</tr>
<tr>
<td>What staffing, governance and management structures are in place?</td>
<td>Ministry of Health</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Coordinating Committee</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Implementing agency - National Center for Public Health</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Executing Agency - WHO</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Funding agency - MCA NCD project</td>
<td></td>
</tr>
<tr>
<td>What is the technical capacity (staff and software) to conduct such surveys?</td>
<td>1. National Center for Public Health</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Staff for field work and data analysis and reporting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Other technical Agencies and Local Government</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. WHO and CDC - overall supervision</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- data analysis</td>
<td></td>
</tr>
<tr>
<td>How has data from risk factor surveys in youth/children been used in your country and by whom?</td>
<td>Assess the National Programme for NCD Prevention and Control</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and baseline for the new Multisectoral Action Plan on NCD Prevention and Control</td>
<td></td>
</tr>
<tr>
<td>When is your suggested plan to conduct the next GSHS survey in your country?</td>
<td>2013 - GSHS and GYTS</td>
<td></td>
</tr>
</tbody>
</table>
Hospital based disease registry

MORTALITY REGISTRATION

Percentage of all NCD Deaths under age 70, WPR, 2008

Health System Response

Access to palliative care (neuropathy-equivalent consumption of strong analgesics according to methods of death (cancer, heart attack, etc.));

Availability of basic diagnostics and medications

Cervical cancer screening (women between ages 20-65 screened for cervical cancer at least once)

Medication therapy for cardiovascular disease risk reduction (treatment of high blood pressure, including at least once; others: 10-year risk of heart attack or stroke≥5%, or resting electrocardiographic abnormalities, or diabetes)

Policies to eliminate tobacco

(Adoption of national policies that eliminate (fully) hydrogenated vegetable oils (HVO) in the food supply)

Policies to reduce marketing of unhealthy foods to children

(Policies with enforcement mechanisms; for example: restricting foods high in saturated fat, trans-fat, added sugar, or salt to children)

Vaccination against hepatitis B

Vaccination against human papillomavirus
Methods and Tools

- **SARA**: Service Availability and Readiness Assessment (F)
  - tracer indicators on availability of key human and infrastructure resources in health facilities
  - Basic equipment, amenities, meds and diagnostic capacities
- **NCD Country Capacity Assessment (C)**
  - strengths and weaknesses related to NCD infrastructure, policy response, surveillance and health systems response and partnerships and health promotion
- **Routine reporting (R)**
  - eg: immunization coverage
- **Population surveys such as STEPS (S)**
  - questions can be added to assess screening coverage, multidrug therapy

Policies/legislations/ordinances

- It is important to monitor the policy/legislation/ordinance/regulation/decrees etc.
- Make these instruments available as they are powerful tools
- Date, full document, source
- Info on implementation
  - Eg. no of shops fined for violation

Surveillance and Monitoring for NCD

Linking NCD information within National Health information systems

Availability of NCD Data in WPR

POLICY MONITORING

MAKE DATA AND INFORMATION AVAILABLE AND ACCESSIBLE
Tools for risk factor surveys

Leanne Riley
Surveillance and Population-based Prevention (SPP)
Chronic Diseases and Health Promotion (CHP)
WHO Geneva

Overview

- Why NCD disease risk factor surveillance?
- STEPS adult risk factor surveillance
- Global school based student health survey (GSHS)
- Other RF surveillance tools

Non-Communicable Diseases (NCDs): 36 million deaths (63% of global mortality)

Low and middle income countries are the most affected

The problem has a serious impact!

NCDs
- Have major adverse effects on the quality of life of affected individuals;
- Cause premature deaths:
  - 44% of NCD deaths occur at age <70 years
- Create large adverse economic effects on families, communities and societies in general.

Risks are widespread:
% overweight (BMI 25+), 2008, ages 20+, age adj
Prevention is possible

Largest part of main NCDs can be prevented if risk factors are eliminated

- Heart disease
- Stroke
- Type 2 diabetes
- Cancer

Causal links

- Metabolic risk factors
- Behavioral risk factors

Risk Factors Common to Major NCD Conditions

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Cardiovascular diseases</th>
<th>Diabetes</th>
<th>Cancer</th>
<th>Respiratory Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Alcohol</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Low fruit &amp; vegetable</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Physical Inactivity</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Obesity</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raised blood pressure</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raised blood glucose</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abnormal blood lipids</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Why measure these risk factors?

- These risk factors have the greatest impact on NCD morbidity and mortality.
- Modification is possible through effective prevention.
- Measurement of risk factors proven to be valid.
- Measurements can be obtained using appropriate ethical standards.
- Once risk factor levels are known, this information can be used to set up NCD interventions and programmes.

What is STEPS?

- System for surveillance of these NCD risk factors
- Designed for implementation in low- and middle income countries
Objectives of STEPS

• Gather information on NCD risk factors to help plan programmes and interventions
• Collect standardized risk factor data to enable comparisons, but allow flexibility
• Provide an entry point for low- and middle income countries to get started on chronic disease surveillance
• Build capacity in countries
• Integrated approach at low cost

STEPS methods – The risk factors

• Behavioural Risk Factors
  - Tobacco use
  - Harmful alcohol consumption
  - Unhealthy diet (low fruit and vegetable consumption)
  - Physical inactivity

• Biological Risk Factors
  - Overweight and obesity
  - Raised blood pressure
  - Raised blood glucose
  - Abnormal blood lipids

STEPS methods – The framework

Different levels of risk factor assessment:
• STEP 1 – questionnaire
• STEP 2 – physical measurements
• STEP 3 – blood samples

Three modules:
- Core
- Expanded
- Optional

Step 1: Questionnaire

• Core:
  - Socio-demographic info
  - Tobacco use, quit attempts, past use
  - Alcohol consumption
  - Fruit & vegetable consumption
  - Physical inactivity
  - History of high BP and diabetes

• Expanded:
  - Cessation, smokeless tobacco use, ETS
  - Drinking with meals, past 7 days drinking
  - Oil consumption, meals outside a home
  - Sedentary behaviour
  - Treatment of high BP and diabetes

Step 2: Physical measurements

• Core:
  - Blood pressure
  - Height
  - Weight
  - Waist circumference

• Expanded:
  - Hip circumference
  - Heart rate

Step 3: Biochemical measurements

• Core:
  - Fasting blood sugar
  - Fasting total cholesterol

• Expanded:
  - Triglycerides
  - HDL cholesterol
Optional modules

- Oral health
- Salt/sodium
- Sexual behaviours
- Tobacco policy
- Violence and injury

Why a STEPwise framework to surveillance?

- Standard methods and tools, but also
- Flexible for adaptation to cultural and local needs
- Simple
- Hierarchical
- Can add on to existing systems (eg: DHS)

STEPS methods – recommendations

- Targets a scientific sample of adults aged 25 - 64
- Household surveys conducted using trained interviewers for STEP 1 (questionnaire) and STEP 2 (physical measures)
- Clinic based for STEP 3 (biochemical measures)
- Countries should at least do core questions STEP 1 and 2
- Repeat surveys every 5 years

STEPS methods – the Surveillance loop

Recognize need for data on NCD risk factors
Begin STEPS Planning
Implement Interventions
Conduct STEPS
Begin STEPS Planning

STEPS Data Collection Workshop
Application and Program Planning Workshop
STEPS Data Analysis & Reporting Workshop

STEPS methods – the workshops

- STEPS implementation workshop
  Overview, proposal, preparation, roles, sampling, tools
- STEPS data collection workshop
  Field work procedures
- STEPS data analysis and reporting workshop
  Epilinfo training, data management, result interpretation, report writing
- Application and planning workshop
  Intervention planning, policies

STEPS website
### Status of STEPS Implementation

<table>
<thead>
<tr>
<th>Region</th>
<th># countries active (attended ≥ 1 workshop)</th>
<th># countries finished data collection</th>
<th># countries with &gt; 1 survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFRO</td>
<td>87</td>
<td>36</td>
<td>4</td>
</tr>
<tr>
<td>AMRO</td>
<td>26</td>
<td>17</td>
<td>2</td>
</tr>
<tr>
<td>EMRO</td>
<td>18</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td>EURO</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>SEARO</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>WPRO</td>
<td>26</td>
<td>24</td>
<td>7</td>
</tr>
</tbody>
</table>

*Including ≥ 2011 surveys
*Including ≥ 2012 surveys

### STEPS up coming developments
- Questionnaire revision to version 3.0 in 2013
  - Tobacco questions for surveys
  - Alcohol revisions to capture problem drinking and uncontrolled alcohol
  - Other matching with global indicators - cancer screening, drug therapy reporting
- Age range and sampling parameters
- eSTEPS platform update
- Manual revisions to reflect changes

### GSHS Purpose
- To provide accurate and timely information on:
  - Help develop priorities, establish programmes, and advocate for resources
  - Establish trends in the prevalence of health behaviors and protective factors
  - Allow countries and international agencies to make comparisons across countries

### GSHS Methodology & Data Collection Procedures
- Focuses on grades with students aged 13 – 17
- National level surveys, but with possibility to generate sub-national data
- Two-stage scientific sample design of schools and classes
- Self-administered questionnaire and generic answer sheet
- Completed by students during one classroom period
- Anonymous and confidential

### GSHS Core Questionnaire Modules
- Alcohol use
- Dietary behaviors
- Drug use
- Hygiene
- Mental health
- Physical activity
- Protective factors
- Sexual behaviors that contribute to HIV infection, other STIs, and unintended pregnancy
- Tobacco use
- Violence & unintentional injury
### GSHS Questionnaire

- Consists of three components - core questionnaire modules, core-expanded questions, and site-specific questions.
- 10 core modules (plus demographic questions) - at least 6 of the 10 core modules must be used.
- Once a module is selected all questions must be used without modification.
- Each core module contains 3 to 7 questions.
- No skip patterns.

### GSHS Capacity Building Plan

- Provide survey implementation workshop.
- Assist with sample design and selection.
- Assist with questionnaire design.
- Provide GSHS manual.
- Provide and scan answer sheets.
- Perform data cleaning and weighting.
- Provide ongoing capacity building.
- Provide/facilitate funding.
- Assist with preparation of site reports.
- Assist with data dissemination strategies.
- Provide ongoing capacity building.

### Capacity Building for Survey Implementation

- Conduct GSHS.
- Analytic & Reporting Workshop.
- Data Application and Planning Workshop.
- Implement School Health and Youth Health Programmes.

### Capacity Building for Analysis and Reporting

- Provide data analysis and reporting workshop.
- Provide initial reports and electronic data file.
- Provide fact sheet.
- Assist with preparation of site reports.
- Assist with data dissemination strategies.
- Provide ongoing capacity building.

### GSHS Participation

#### Completed Surveys

- AFR - 16 (1 with a repeat).
- AMR - 27 (3 with repeats).
- EMR - 16 (6 with repeats).
- EUR - 2.
- SEAR - 6.
- WPR - 14 (1 with repeat).
GSHS Status in WPRO

<table>
<thead>
<tr>
<th>Country</th>
<th>GSHS Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>X</td>
</tr>
<tr>
<td>China (9 cities)</td>
<td>X, X, X, X</td>
</tr>
<tr>
<td>Cook Islands</td>
<td>X, X</td>
</tr>
<tr>
<td>Fiji</td>
<td>X</td>
</tr>
<tr>
<td>Kiribati</td>
<td></td>
</tr>
<tr>
<td>Laos</td>
<td>X</td>
</tr>
<tr>
<td>Maldives</td>
<td>X, X</td>
</tr>
<tr>
<td>Micronesia</td>
<td></td>
</tr>
<tr>
<td>Nepal</td>
<td>X</td>
</tr>
<tr>
<td>Nauru</td>
<td></td>
</tr>
<tr>
<td>Tonga</td>
<td></td>
</tr>
<tr>
<td>Tuvalu</td>
<td>X, X</td>
</tr>
<tr>
<td>Vanuatu</td>
<td></td>
</tr>
<tr>
<td>Viet Nam</td>
<td>X</td>
</tr>
</tbody>
</table>

When do results become available?

- Comprehensive Country Data Report
  - Sent within two months of completion of field work.
- Fact Sheets
  - Posted within two months of completion of field work.
- Public Use Datasets
  - Posted at end of two-year country exclusive access

Go to: http://www.who.int/chp/gshs

Physical Activity/Obesity

- Physically inactive
- Overweight
- Obese

Tobacco

- Current Cigarette Use
- Smoked Before Age 14
- People Smoked in Their Presence

Injury/Violence

- In a Physical Fight
- Seriously Injured
- Bullied

Global School Health Policies and Practices Surveillance (Global SHPPS)
Global SHPPS Objectives

- Generate scientifically credible school-level data that describe characteristics of school health policies and practices
- Focus on
  - Healthy and safe school environment
  - Health services
  - Nutrition services
  - Health education
  - Physical education
- Document trends over time in school health policies and practices
- Allow for cross-country comparisons

Global SHPPS Methods

- Selection of schools with probability proportional to size
  - n ~ 250 to 300 schools per country
- Inclusion of GSHS sample
- Proportional distribution of primary and secondary schools

Questionnaire Content

- Healthy and safe school environment
- Health services
- Nutrition services
- Instruction on health-related topics
- Physical education and activity

Sampling

- Self-administered questionnaire
- Use of computer scannable answer sheets or questionnaire booklets
- Distributed by mail, email, or personal delivery
- Returned by mail, email, or personal delivery

Respondents

- Head teacher or principal
- Teacher of health education or physical education
- School nurse or other health care provider

Survey Administration
Other tools for risk factor surveillance

<table>
<thead>
<tr>
<th>Other tools (almost all single issue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Global youth tobacco survey (GYTS)</td>
</tr>
<tr>
<td>- Global adult tobacco survey (GATS)</td>
</tr>
<tr>
<td>- Tobacco questions for surveys (TQS)*</td>
</tr>
<tr>
<td>- National nutrition surveys</td>
</tr>
<tr>
<td>- Food frequency surveys</td>
</tr>
<tr>
<td>- Global Physical Activity Questionnaire (GPAQ)* and International Physical Activity Questionnaire (IPAQ)</td>
</tr>
</tbody>
</table>
Planning and preparing a STEPS Survey

Overview

1. Identification of personnel
2. Scope of the STEPS survey
3. Determine survey methodology
4. Determine target
5. Estimate budget
6. Implementation plan
7. Ethical approval
8. Questionnaire
9. Equipment
10. Planning of field work
11. Pilot testing
12. Planning of post-field work activities

(1) Identification of personnel

Personnel needed for a STEPS survey:
- STEPS Site Coordinator
- Coordinating Committee
- Data collection teams (supervisor, interviewer, clinic staff, administrative staff, driver)
- Data analysis team

Staff are usually "seconded" from other duties within MoH or other health institutions

Personnel: STEPS Site Coordinator

- Key player in STEPS planning and implementation
- Chairs the Coordinating committee
- Drafts and oversees progress of the implementation plan
- Supervises data collection & data management teams
- Develops partnerships & contributes to health promotions activities
- Prepare future STEPS surveys

Personnel: Coordinating Committee for Surveillance (CCS)

- Organised within the MoH
- Oversees practical & logistic issues of STEPS overall implementation
- Acts as an advocacy body
- Assists in translating data into policy and programmes
- Ensures the long term sustainability of STEPS surveillance

Personnel: Data Collection Team

- Supervisor
- Interviewer
- Clinic health professional
- Administrative staff
- Driver
Personnel: Data Collection Supervisor

- Responsible for survey logistics
- Obtains lists of the selected sample & maps of each area
- Informs local authorities
- Supervises interview process & records daily activities
- Sends weekly progress reports to Site Coordinator
- Ensures data quality
- Oversees setup and distribution of PDAs to interviewers

Personnel: Interviewers

- Approach the households, inform participants and obtain consent
- Interview participants in household settings (Step 1)
- Take physical measurements (Step 2)
  → In some settings, a mixture of staff of both sexes is required
  → Staff should cover various cultural & religious groups and the languages spoken in the country

Personnel: Clinic Health Professionals

- Check for appropriate participant consent
- Take blood samples from participants & record results
- Nurse practitioners or medical assistants

Personnel: Data Manager and Data Analysis Team

- Data manager oversees the data download and analysis process
- Receives completed records and Kish Method data from PDAs
- Compiles all completed records into final data set
- Ensures security of all survey data
- Sometimes also involved in sampling
- Data analysis team undertakes descriptive and any additional analyses if required

Personnel: Administrative Staff

- Organise logistics
- Print & distribute materials
- File survey material
- Organise publicity for survey

WHO Staff

- WHO Geneva
  - Provides global coordination for STEPS implementation
  - Supports and provides training & technical support to STEPS sites
  - Develops a global strategy in NCD Risk Factor Surveillance
- WHO Regional Office
  - Coordinates STEPS implementation in their region & trainings
  - Identifies countries ready to implement STEPS
  - Provides on-going technical support
- WHO Country Office Representative
  - Serves on the coordinating committee
  - Facilitates communication between STEPS sites & the RO
### Relationships Between Key Players

- Communication flows up and down the pyramid

- **WHO & Regional Office**
- **Ministry of Health & NYO Country Representative**
- **STEPS Coordinating Committee & Site Coordinator**
- **Data Collection, Data Management and Data Analysis Teams**

### (2) Scope of the STEPS survey

- National or subnational?
  - Recommendation: do national, if possible

### Scope of the STEPS survey, cont.

- Identify what information on risk factors is most needed in your country:
  - STEP 1 – demographics, tobacco, alcohol, diet, physical activity (core and expanded?)
  - STEP 2 – blood pressure, obesity/overweight (core and expanded?)
  - STEP 3 – blood glucose, blood lipids (core and expanded?)
  - **Recommendation: do at least core STEP 1 and 2**

### Scope of the STEPS survey, cont.

- Do STEP 3 if
  - Diabetes and raised cholesterol are on the national public health agenda, and
  - Resources are available (doing STEP 3 doubles the cost of a STEPS survey)
  - **Recommendation if resources are limited: do only STEP 1 and 2, but do a national survey**

### Scope of the STEPS survey, cont.

- Sites can add optional modules if they wish to describe the prevalence of other specific health problems
- Optional modules that are available:
  - Oral Health
  - Salt
  - Sexual Health
  - Tobacco policy
  - Violence and Injury

### (3) Determine survey methodology

- Determine age range
- Determine sample size
- Choose sampling design (most countries do cluster sampling)
- Identify sampling frame
## (4) Determine timelines

<table>
<thead>
<tr>
<th>General timeframes:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Planning and scoping</strong></td>
</tr>
<tr>
<td><strong>Recruitment and training of staff</strong></td>
</tr>
<tr>
<td><strong>Data collection</strong></td>
</tr>
<tr>
<td><strong>Data download, analysis and reporting</strong></td>
</tr>
</tbody>
</table>

## (5) Estimate budget

Estimation of costs of your STEPS survey should include:

- Staff costs
- Travel costs
- Costs of trainings and meetings
- Costs for paperwork (printing of documents, report, etc.)
- Costs of equipment for STEP 2 and 3

→ rough estimate of a national STEPS survey: 100,000 – 150,000 USD (medium size LMIC, doing STEP 1-3)

## (6) Implementation plan

The purpose of the implementation plan is to:

- Set out the scope of surveillance and desired goals
- Identify required resources
- Set out an action plan
- Develop a communication strategy
- Provide a well planned budget as a basis for funding

## (6) Implementation plan, cont.

A template is available in the STEPS manual.

Topics of the implementation plan should include:

- Current situation
- Objectives and methods of the STEPS survey
- Scope
- Resources
- Action Plan
- Communication strategy
- Reporting and disseminating results
- Budget

## (7) Ethical approval

- Every STEPS proposal should undergo technical & ethical review & approval to ensure that the survey:
  - is conducted in a technically and ethically sound manner
  - recognises & protects the rights of participants

- The implementation plan should be submitted to a national ethics review committee.

- Informed consent needs to be obtained from every survey participant
**(8) Questionnaire**

- The generic STEPS questionnaire is the basis of every country questionnaire.
- For every section, countries need to decide if they do core only, or core and expanded questionnaires.
- Optional modules?
- Some questions need slight adaptation (for example: income categories).
- Examples to be added to some questions (for example: different types of physical activities).
- Show-cards for Step 1

**(9) Equipment**

- Equipment should be ordered well in advance.
- Equipment that's needed:
  - Step 1: PDAs (can be borrowed from WHO).
  - Step 2: Blood pressure monitors, height/weight measuring devices, tape measures.
  - Step 3: Device to measure blood glucose and lipids.
- A document on equipment recommendations is available.

---

**Equipment: PDAs**

Personal Digital Assistant (PDA):

Can be borrowed from WHO.

**Equipment: BP monitors**

- Boso Medicus Uno with universal cuffs
- OMRON M6 with S, M, L, XL cuffs

---

**Equipment: Height and weight**

- Growth management scales with laser for height (displays height, weight, BMI).
- SECA scale and stadiometer.

**Equipment: tape measures**

- Myotape
- Figure finder
Planning the field work: Training of data collectors

- Data collectors should receive training just before going into the field.

Planning the field work: Logistics

- Data collectors are organized in teams:
  - Each team has one Supervisor
  - Example: 6 teams with 1 Supervisor, 4 data collectors, 2 clinic health professionals (STEP 3), 1 driver

- Before going into the field, teams should be assigned to clusters, and data collectors should be assigned to households.

- Some countries will need to do household listings when they are in the field.

Planning the field work: Logistics STEP 3

- Logistics and location of STEP 3 need to be well thought through (STEP 3 requires overnight fasting)

- Separate PDAs for STEP 3 might be needed.

Planning the field work: Preparing equipment and supplies

- Each data collector will need an equipment bag with the necessary equipment.

- Each clinic health professionals will need STEP 3 equipment.

- Paperwork needed for field work: STEPS templates are available.

- IDs should be assigned to:
  - Equipment
  - Cluster
  - Household
  - Participant (!)
(11) Pilot testing

- Pilot test of the entire data collection should be conducted before going into the field

- Test group:
  - Convenience sample (each data collector to do several interviews)
  - Men & women
  - Age range used in STEPS survey
  - People from different socio-economic groups (and if applicable from different ethnic groups)

Pilot testing, cont.

- Involves the following aspects of the survey:
  - Preparing all materials for data collection
  - Approaching selected households
  - Applying Kish method to select person within a household
  - Seeking and obtaining informed consent
  - Collecting data using PDAs
  - Making appointments for STEP 3

Pilot testing, cont.

- Pilot test should be conducted after:
  - Translation of STEPS materials is finalised
  - Recruitment and training of data collection staff are done

- Ensures interviewers consistency and tests their skills prior to the survey

- Allow sufficient time for adjustments to be made prior to starting data collection

(12) Planning of post-field work activities

- Planning of data download, management and analysis

- Planning of data reporting (→ STEPS reporting tools) and dissemination of results

- Planning of interventions

Summary

- First steps when planning a STEPS survey include:
  - Identification of personnel
  - Determining scope of the survey and methodology, including sampling
  - Determining timelines
  - Estimating budget
  - Development of an implementation plan and the questionnaire
  - Purchase of equipment

- Closer to the field work
  - Organisation of field work logistics
  - Planning of data collectors training and pilot
  - Planning of post-field work activities
Cancer Registration

Hai-Rim Shin
Noncommunicable Disease and Health Promotion
WHO Western Pacific Region

Outline

- Cancer information: example
- What is cancer registration
- Planning of a cancer registry
- Data source and quality
- Cancer Control and cancer registry

Age-standardized cancer incidence rates

Source: GLOBOCAN 2008

Data used for Estimation for GLOBOCAN 2008

Cancer Registry: Registration

Cancer Registry

The office or institution which is responsible for the collection, storage, analysis and interpretation of data on persons with cancer.

Cancer registration

The process of continuing systematic collection of data on the occurrence, characteristics, and outcome of reportable neoplasms with the purpose of helping to assess (prevent) and control the impact of malignant disease in the community.
Types of Cancer Registry

1. Population based cancer registry (PBCR)
2. Hospital cancer registry
3. Pathology registry

Population based Cancer Registry

- All cases in a DEFINED population are registered
- True (unbiased) profile of cancer in the community
  - Incidence, stage distribution, survival, etc.
- Calculation of incidence rates (because population at risk is quantified)
- The main interest is for epidemiology and public health

Hospital based Cancer Registry

- Records all cases of cancer treated in a given hospital
- The population from which the cases come is not defined
- The main interest is clinical care hospital administration

Pathology Tumor Registry

- Collects information from one or more laboratories on histological diagnosed cancers
- The population from which the tumour tissue has come is not defined
- The information
  - has high diagnostic quality
  - but is difficult to generalize

Planning a population-based cancer registry

- Advisory committee
- Population denominators
- Legal aspect and confidentiality
- Size of population and number of cases
- Physical location of the registry
- Finance
- Personnel
  - Numbers; Qualifications; Training
- Equipment and office space

Problems of cancer registration in developing countries

- Lack of basic health services
  - Facilities for diagnosis and treatment of cancer cases may be particularly scanty
- Lack of stability of the population
- Identity of individuals
- Lack of trained personnel
- Lack of follow-up
- Non-availability of census data
- Lack of data-processing facilities
- Confidentiality
Establishing a cancer registry

- Sophisticated system can not be maintained. Much can be achieved with simple cancer registration
- Quality of information, the coverage, and the adequacy of the reference population are essential in cancer registration
- The area covered: major treatment facilities
- The registry committee
- Personnel
- Funding

Evaluation of data quality in the cancer registry

- Completeness
- Comparability
- Validity or accuracy
- Timeliness

Comparability

- The system used for classification and coding of neoplasms; ICD-O-3
- The definition of incidence, i.e., what is defined as a case, and what is the definition of the incidence date;
- The distinction between a primary cancer (new case) and an extension, recurrence or metastasis of an existing one (multiple primary);
- The recoding of cancers detected in asymptomatic individuals

Validity (accuracy)

1. Re-abstracting and recoding
2. Histological verification
   - the index of validity: the percentage of cases morphologically verified
3. Death Certificate Only (DCO)
4. Missing information
5. Internal consistency: IARC/IACR CHECK program

Cancer Data Sources

- 1. Med Records Dept
- 2. Outpatient clinic
- 3. Pathology lab
- 4. Hematology lab
- 5. Radiology Oncology
- 6. Diagnostic Rad
- 7. Health Insurance
- 8. Screening
- 9. Death certificates
- 10. Autopsy
- 11. Others

Office for “Death Certificates” in terms of storage (record keeping)?
Timeliness

• Rapid reporting of information on cancer cases is another priority
• There are no international guidelines for timeliness at present, but
  - North American agencies have set out specific standards for the relevant registries
  - SEER: with 22 month of the end of the diagnosis year

Software for registration

• Cancer registries need a tool to input, store, check and analyze their data.
• Cancer registration data that are collected and coded in a standard way make possible the production of comparable cancer incidence among various countries.
The National Cancer Control Program: a systemic and comprehensive approach

- Early Detection
- Treatment
- Cancer Control Program
- Prevention
- Palliative Care

The cancer registry: an essential part of cancer control program.

Thank you very much for your attention.
Improving Population Mortality Data collection

Health Information, Evidence and Research
WHO Regional Office for the Western Pacific
Jun Gao

Main sources of mortality data

- **Routine:**
  - **Vital Registration Systems** (VRS) including cause of death information
  - **Sample Registration Systems** (SRS) with/without cause of death information
  - **Demographic Surveillance Systems** (DSS) with/without cause of death information

- **Ad hoc:**
  - Health Surveys, with or without cause of death information

Capturing cause of death (CoD) information in mortality statistics

- **Why?**
  - CoD critical to guide policy debates and treatment/prevention programs

- **What?**
  - Detailed cause CERTIFIED and CODED according to ICD rules (ICD-10th Revision)

- **When?**
  - Needs to be annual, timely (<2 year delay)

- **How?**
  - Medical certification of cause of death by doctor (routine VR) BEST PRACTICE
  - ‘Verbal Autopsy’ (VA), preferably with MD review (Surveys, SRS, DSS)
  - VA/VA with automated methods as supplement for routine VR

Use of vital statistics in the health sector

- Data on prevalence and distribution of mortality by cause;
- Identification of health inequalities;
- Establishment of priorities, monitoring of trends and evaluation of the impact and effectiveness of health programmes;
- Assessment of health system performance;
- Tracking national strategies such as health-sector reform, poverty reduction and development efforts;

Benefits to communities and governments

- used to derive fundamental demographic and epidemiological measures – population levels and trends, fertility, mortality – used in planning across multiple sectors, such as education, labour and health.
- underpin government activities (e.g. identity and citizenship, population registers) and commercial enterprises (e.g. life insurance and marketing of products).
Use of vital statistics in the health sector

- Measuring baseline levels and monitoring progress towards goals, such as the Millennium Development Goals (MDGs); NDC, etc.
- Understanding emerging health challenges, e.g. noncommunicable diseases, injuries, HIV/AIDS;
- Planning, monitoring and evaluation in decentralized health systems, by providing data on health conditions at local levels.

Main challenges with vital statistics data

- Incomplete registration of deaths (less so for births)
- Poor certification of the cause of death
- Poor availability/timeliness of data
- Poor use of data
- Poor understanding of the true value of reliable birth, death and CoD data

Improving completeness

- Completed Data collection system:
  - Remote, low service access areas;
- Do not only count the Cause of death data from hospitals
- Apply verbal autopsy to collect cause of death data for person dead at home
- Routinely conducted quality of data assessment including estimate of missing report

Why not just use cause of death data from hospitals?

- Not all deaths in hospitals are registered
- Biased cause of death pattern in hospitals compared to community (e.g. over-representation of severe/acute care patients)
- Unreliable clinical procedures to certify causes of death leading to inaccurate cause of death data
- Hospital interest different to public health interest

Mortality Certificate, timeliness and use

- Using international Standard death certification and coding roles
- Using international verbal autopsy tools
- Analysing data flow and reporting process to improve timeliness reporting and feedback
- Develop national data analysis capacity at control level to produce information products using mortality data
- Using mortality data to track health intervention and health system development progress

Strategies to strengthen VRS – 6 point plan

- Assess current status & functioning of VRS using WHO/HIS Hub guidelines
- Develop multi-stakeholder prioritized, strategic "road map" to develop VRS over 3-5 year time horizon
- Get right legislation in place
- Coordinate sectoral responsibilities for VRS and civil registration
- Establish/"repair" infrastructure for vital statistics data collection, consolidation and dissemination (including capacity, incentives, etc)
- Train physicians to correctly certify causes of death using ICD rules
Demographic Surveillance Sites

- **Demographic surveillance** is the process of defining risk and corresponding dynamics in rates of birth, deaths, and migration in a population over time (WHO definition).
- Data collected for a pre-defined set (not necessarily representative) of households to monitor vital rates.
- Births, deaths, migration, and health indicators collected through household survey.
- Large sample size: Average of 60,000 household visits per year.

Sample Registration System: India

- 26 million births and 8 million deaths occur annually in India.
- Only 50% of births and 48% of deaths are registered.
- In India, two types of death registration occur, through the Sample Registration System (SRS) and the Civil Registration System (CRS).
- SRS was initiated in 1964-65 on a pilot basis and full scale from 1969-70 to generate reliable and continuous data as an alternative to the CRS.
- Madhiah: Certification of causes of death (MU23) was started to get accurate death registration data. The MCCD system records only 15% of the total registered deaths and 41% of the total urban deaths.
- SRS now includes Verbal Autopsy (VA) to get causes of death.

Sample Registration System: China

- The Vital Registration system covers about 8% (110 million) of the national population.
- The Disease Surveillance Point system covers about 1% of the population. The 145 sample sites in the DSP system remain constant over time, and are representative of the national population.
- In contrast, the sites represented in the VR system data are not representative because they are focused almost entirely in the eastern, more developed region of China.

What should I do to strengthen the VR system

- Establish demographic Surveillance Systems (DSS) or, better still, Sample Registration Systems (SRS).
- Function very well in China, India, Tanzania (?).
- Integrate hospital statistics into urban VRS.
- Use Verbal Autopsy with automated methods in rural areas to get causes of death.
- Builds data collection and vital statistics capacity and raises awareness of advantages of VRS, pending complete VRS.

Existed Tools on Improving Mortality Registration

- Civil Registration and Vital Statistics resource kit.
- Rapid CRVS Assessment.
  - [http://www.who.int/hsh/ovs](http://www.who.int/hsh/ovs)
- Comprehensive CRVS assessment.
  - [http://www.who.int/hsh/ovs](http://www.who.int/hsh/ovs)
- ICD 10 on-line training Tool.
  - [http://apps.who.int/ibcrisolutions/topics/icd/old/10mlntnl.pdf](http://apps.who.int/ibcrisolutions/topics/icd/old/10mlntnl.pdf)
- WHO Verbal Autopsy.

Discussion Points

- How to improve the mortality registration in your country through.
  - Improving completeness.
  - Quality of certification.
  - Improving availability and timeliness.
  - Improving use of data.
  - Improving reliability of data.
Mortality Registration and Statistics

December 5, 2012
Korea
Joon H. Hong
WHO-FIC Education and Implementation Committee
International Federation of Health Information Management Associations

Contents

- International Statistical Classification of Diseases and Related Health Problems (ICD)
- International form of medical certificate for cause of death
- Use of mortality data
- WHO-Family of International Classification (WHO-FIC)
- International certificate for ICD-10 mortality coder/trainer
- Death registration system in Korea

Mortality (cause of death) statistics

- The oldest and most internationally-comprehensive health statistics
- The International Classification of Diseases (ICD) has been the international mortality classification standard since late in the 19th century
- The use of ICD is essential for comparable cause of death statistics at the national and international levels and across time

International Statistical Classification of Diseases and Related Health Problems (ICD)

- Published by the WHO since 1948 and maintained by the WHO Family of International Classifications Network (WHO-FIC)
- Clinical coding is the translation of diseases, health related problems from text to alphanumeric codes for storage, retrieval, analysis and statistics.
- Use of ICD-10 for coding morbidity or mortality data ensures data which is comparable
  - Between individual hospitals
  - Between provinces, states
  - Regionally, internationally
  - At different points in time

Volume 1, the Tabular List

- An alphanumeric listing of diseases, disease groups and health related problems.
- Contains inclusion and exclusion notes and some coding rules
Volume 2, the Instruction Manual

- Contains an introduction to the classification and instructions regarding how to use the classification to code death certificates, hospital medical records and other forms of health information.

Volume 3, the Alphabetical Index

- An alphabetical list of the diseases and conditions which have codes in the Tabular List.
- More entries in the Index than there are in the Tabular List because some diseases have more than one name and some diseases are grouped under one code.

How to use Vol 1 and Vol 3?

Example:

Anna has ruptured her spleen during a skiing accident.

1. Refer to Vol 3 to find a code representing her problem. When we open Volume 3, the code listed for a ruptured spleen is S36.0.

2. Confirm the choice in the Tabular List.

Select the proper 5th digit code $S36.00$ or $S36.01$.
Basic structure of ICD-10

- Main Classification
  22 chapters
  (Chapter IX: Diseases of the digestive system(K00-K93)
  blocks of categories
  (Malignant neoplasm of digestive organs C15-C26)
  three character categories or codes
  (C16 Malignant neoplasm of stomach)
  four character codes
  (C16.0 Malignant neoplasm of stomach, cardia)
  five character codes
  (SO2200 Fracture of vault of skull, closed)
- Supplementary classification
  Morphology(M8000/0-M9582/0)

Medical Certificate of Cause of Death

- WHO recommends that cause of death for mortality statistics is reported on the medical certificate of cause of death (MCCD), following the template in volume 2 of ICD-10.
- The certifier enters the cause/s on the MCCD in a defined sequence according to their timing in relation to death.

Cause of Death (COD)

"all those diseases, morbid conditions or injuries which either resulted in or contributed to death and the circumstances of the accident or violence which produced any such injuries"

- Defined at the 20th WHA in 1967 -

Underlying Cause of Death (UCOD)

- Definition of UCOD by WHO
  - The disease or injury which initiated the train of morbid events leading directly to death, or
  - The circumstances of the accident or violence which produced the fatal injury
- Agreement by the Sixth Decennial International Revision Conference
  - The cause of death for primary tabulation should be designated the UCOD

What do the UCOD statistics tell us?

- Numbers and rates of death by underlying cause provide information on the health status of population
- Measure the proportion of overall and premature mortality that is attributable to each cause, and so identify priorities for health services and public health interventions
- Detect health indicators like lost years of life, avoidable deaths and mortality rates
What do the UCOD statistics tell us?

- Estimate the efficacy of public health interventions, such as vaccination and screening programs by analysis of trends in cause-specific mortality rates
- Help identify higher-risk groups in the population for a specific group of diseases
- Propose the recommendations for safety and prevention programs for the risk

What do underlying cause data not tell us?

- The prevalence of a disease in the population because international UCOD data focus on the cause that started the sequence of events leading to death
- The other causes on the certificate are important for the selection of the underlying cause but are not seen in this monocausal tabulation and analysis
- Multiple causes of death reported on the certificate are considered and analyzed according to the specific scientific or epidemiologic question.

Rules for selection of the originating antecedent cause

- General Principle
- Selection Rules
  • Rule 1
  • Rule 2
  • Rule 3
- The modification rules
  • Rule A. Senility and other ill-defined conditions
  • Rule B. Trivial conditions
  • Rule C. Linkage
  • Rule D. Specificity
  • Rule E. Early and late stages of disease
  • Rule F. Sequela

Other notes, rules, references

- Operational related cases
- Malignancy related cases
- Linked diagnoses
- Accepted sequence and rejected sequence
- Tables by US NCHS recommended by WHO
  - Causal relationship table
  - Modification table

Why so many rules, notes, and references are required?

- Accuracy in diagnosing causes of death still varies from one country to another.
- Incorrect or systematic biases in diagnosis
- Incorrect or incomplete death certificates
- Misinterpretation of ICD rules for selection of the underlying cause
- Variations in the use of coding categories for unknown, trivial, and ill-defined causes

WHO-Family of International Classification (WHO-FIC) Network
WHO-Family of International Classification

- An international network of 14 expert centers in
  - Health classifications
  - Coding
  - Terminology development
- Principal role
  - To promote the implementation and use of the Family of International Classifications in health information systems

Mortality Reference Group (MRG)

- Aim: Improving international comparability of mortality data by establishing standardized application and interpretation of the mortality coding rules and guidelines in ICD-10

Education and Implementation Committee (EIC)

- With International Federation of Health Information Management Associations (IFHIMA) to promote high quality health data
  - Defined core curricula for mortality and morbidity education
  - International certificate for ICD-10 mortality and morbidity coder/trainer project since 2004
  - Developed e-Learning tool for ICD-10 and posted it on the WHO web site
  http://apps.who.int/classifications/apps/icd/ICD10Training/

International Certificate for ICD-10 mortality coder/trainer

Purpose
- To produce accurate, timely, and internationally comparable mortality data by enhancing the coding skill
- To increase the users' reliability on the coded data by standardized education and production of high quality data
- To improve the coders' status, especially in the developing countries, and the recognition of the importance of coders' role

Number of the successful candidates of mortality coding exam (2007-2009)

<table>
<thead>
<tr>
<th>Country</th>
<th>Coder</th>
<th>Coder/Trainer</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Korea</td>
<td>39</td>
<td>18</td>
<td>57</td>
</tr>
<tr>
<td>US</td>
<td>15</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>UK</td>
<td>4</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Canada</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>60</strong></td>
<td><strong>19</strong></td>
<td><strong>79</strong></td>
</tr>
</tbody>
</table>

Two more countries conducted the mortality coding exam. One of them, not for certificate but for experience and evaluation of the coders' skill.
Death Registration System in Korea

History of adopting ICD in Korea
• 1938, International List of Cause of Death, 4th revision
• 1945, International List of Cause of Death, 5th revision
• 1952, Korean Classification of Cause of Death, Injury and diseases (KCD) based on ICD 6th revision
• 1972, KCD, 1st revision based on ICD-8
• 1979 KCD, 2nd revision based on ICD-9
• 1995, KCD-3, based on ICD-10
• 2011, KCD-6 based on ICD-10, 2008 version

Death Registration System in Korea

Process from the report of death to the report to WHO

1. Submit Death Report to the office of Dong, Eup, Myun
2. Transmit the aggregated data to the Vital Statistics Division, Statistics Korea
3. Input the information on the death certificate into the web input system, population movement system
4. Mortality codes review the COD, select the UCOD, assign the ICD-10 code
5. Modified version of ICD-10, 2008 version
6. Produce the annual statistics
7. Report to WHO

Korean Form of Death Report (upper portion)

Korean Form of Death Report (lower portion)

The Death Report in Korea

• Who: Family, or other housemates of the dead, or the person who manages the death place
• When: Within one month after identifying the death
• Where: City or borough office, office of Dong, Eup, Myun, of
  - the family head's legal domicile
  - the reporter's residential district
  - the deathplace, cemetery, or crematorium
  - the place of resident registration of the death
The Death Report in Korea (cont’d)

• Documents to be submitted
  - Death report
  - Death certificate or postmortem exam certificate issued by a
    • Medical doctor or
    • Oriental medical doctor or
    • Dentist
  - Death Report certifying the death by the head of Dong office or by more than 2 very close neighbors when the death certificate (or postmortem exam certificate) cannot be issued by a medical person.
Problems identified

• Discrepancies of UCOD on death certificate, medical record, and death statistics
• Incorrect death certificate (postmortem exam certificate) even issued by medical persons due to
  - Lack of education and indifference of the certifiers
  - Statistically significant difference in the error rate of UCOD on the death certificate between two physician groups: one with training and the other without training on the issuing death certificate (Kim et al., The Journal of Korean Society of Emergency Medicine, 2000)

Efforts of mortality coders for quality data

• Request the copy of the death certificate for the problem cases, review them for clarification and the sequence of the COD
• Consult the death certifier when necessary
• Refer to the data of the related government agencies if necessary
  - The degree of consistency of UCOD on the medical record and the death certificate increased 23.2% in this process (Won, et al., The Journal of Korean Society of Emergency Medicine, 2007)
• Ask to the family or reporter by telephone when necessary
• Mandatory to apply and pass the International Certificate for mortality coding exam by WHO-FIC-IFHIMA

Problems identified cont’d

• Low quality of death certificate by non-medical persons
  - The percentage of death certificate by non-medical persons varies by district and need to restrict this strictly to be minimized
    - The highest rate: 9.7%
    - The lowest rate: 0.4%
    - The average rate: 2.5%
• Legibility of handwriting on death certificate

Training programs for ICD-10 coding in Korea

• One of the required subjects to complete in a college or an university to apply the national certificate exam for Medical Record Professional
• It is included in the curriculum of 2 or 3 year program and 4 year bachelor program of HIM
• The lecture hours for coding vary by program
  - Lecture for 1 to 3 semesters(50 to 120 hrs.)
  - Coding exercise for 1 semester
  - Field placement for 2 to 3 weeks
• Training programs by Korean Medical Record Association for the practicing coders

Requirements for quality death statistics

• Legislation of all the necessary laws
• Invest in the systematic strengthening of the national registration and vital statistical systems.
• Accurate documentation of death certificate
  - Education in medical school and training programs in health care organizations
  - Distribute the booklet to the certifiers to refer when they write the death certificate
  - Minimize the death certificate by non-medical person
• Accurate documentation of medical record
• Well trained coders
  - High level coding skill for ICD-10
  - Familiar with UCOD selection and coding rules and instructions in ICD-10 Vol 2
  - Clinical knowledge

WHO says

• Two thirds of deaths are not counted
• Only one in five countries produces high-quality data on causes of death.
• The two most populous countries of the world, China and India, use the sample registration approaches to generate representative mortality statistics instead of the full functioning registration.
• The urgent need for investment in improving death registration in many countries and the time for improvement is now.
• There are signs that both the international community and countries are increasingly committed to improving civil registration and vital statistics systems, including death registration with a reliable cause.
State of WHOFIC
Classifications, Terminologies and Standards

October, 2012

Number of deaths reported to WHO with ICD codes
1950 - 2007

Number of deaths reported to WHO - by region
1950 - 2007

Reported deaths v/s estimated deaths, 2007

Messages from WHO-FIC

"You can't manage what you can't measure!"

"There is heavy reliance on the statistics that are derived from the coded health data..."
Overview

- Indicators and targets for national systems response
- NCD country capacity assessment
- Service availability and readiness assessment (SARA)
- Global School health policies and practices survey (Global SHPPS)

Framework for M&E of health systems strengthening

Country Profile of Capacity and Response to Chronic Noncommunicable Diseases
NCD Country Capacity assessment objectives

- To undertake an assessment of national level capacity to respond to NCDs in all WHO Member States.
- Specific areas of assessment in the NCD Country Capacity Assessment Survey tool include:
  - Public Health Infrastructure for NCD
  - Status of NCD relevant policies, strategies, action plans and programmes
  - Health Information Systems, surveillance and surveys
  - Health systems capacity for NCD early detection, treatment and care
  - Health Promotion, partnerships and collaboration

Background and history

- Three previous waves of surveillance conducted - 200/2001, 2005/2006 and 2010
- Main tool for reporting on progress in global status of NCD prevention and control
- Proposal for 2013 is heavily based on 2010 version with several changes to reflect important indicators from UNHLM Political Declaration, and deletion of items not widely used or well understood
- Excel-based questionnaire that included auto-generated country profile

2013 Questionnaire Overview

I. Public health infrastructure, partnerships and multisectoral collaboration for NCD
II. Status of NCD relevant policies, strategies and action plans
III. Health information systems, surveillance and surveys for NCD
IV. Capacity for NCD early detection, treatment and care within the health care system

Methodology

- Uses an electronic EXCEL questionnaire tool, which is completed by a team of people at the country level to ensure a comprehensive response is compiled for each country
- Tool designed to also print the completed responses, so Member States also have the option to send both an electronic version of their completed response, plus print a paper-based version which can be signed and certified correct for verification at the country level
- Tool produces a short PROFILE summary highlighting key aspects of NCD policy and programming
- Sent to countries by WHO Regional Office – Countries have 8 weeks to complete. Monitoring and follow up managed by WHO RO

Response Rate

- Response rate has been rising since survey began.
- Response rate in 2010 was very high (95%) with 100% attained in most regions.
- Most MS submitted a response by deadline but majority needed additional weeks or even months before providing "final" response.

Data Management and Analysis

- Extraction of data from questionnaire was automated with Excel macro and performed at HQ.
- HQ created regional and global databases
- Global data management and reporting managed by WHO HQ
- Regional reports managed by RO
- Global analyses performed in Stata at HQ
Data Dissemination and Utilization

- Data extensively used to report global status of NCD prevention and control, particularly in preparations for UN HLM
- Global Status Report 2010
- NCD Country Profiles 2011
- Regional and Global CCS Report
- Limited trend analysis possible due to questionnaire changes, but changes in 2013 will be kept to a minimum

Service Availability and Readiness Assessment (SARA)

A methodology for measuring health systems strengthening

Framework for M&E of health systems strengthening

Why Measuring health services availability and readiness:

- More demand for accountability and to demonstrate results at country and global level
- Information needed to track how health systems respond to increased inputs and improved outputs and impact on health outcomes
- Need for strong country monitoring system of facilities and their readiness to deliver services (that includes public and private sectors):
  - Key to achieving MDGs — e.g., interventions to reduce child mortality, maternal mortality
  - Scaling up response against major diseases (including NCDs), disease outbreaks, and other events
  - Planning and managing health system (HR, essential services, drug supply, equipment)
  - Guiding country and partner investments ("evidence-based" policy)
- Implies need for core indicators of service availability and readiness and appropriate sustainable measurement strategies to generate required data over time

Ensuring access to quality health services is one of the main functions of the health system

MEASUREMENT of Availability:

- Physical access — Availability
- Economic access — affordability
- Cultural access — e.g., gender and ethnic issues between patient and provider

MEASUREMENT of Readiness:

- Readiness index
- General and service specific indicators

Quality components

- Readiness
  - Capacity of health facilities to provide health services
  - Execution of the service:
    - Does the provider carry out the right actions?
    - Does this result in the right actions by the patient?
  - Measurement: exit interview, patient provider observation, mystery client, follow up studies of patients
- Need for tracer condition to monitor quality

MEASUREMENT of Readiness:

- Readiness index
- General and service specific indicators
  - Trained staff and equipment
  - Availability of equipment
  - Medicines and supplies
  - Diagnostics
  - Infectious disease

ACCESS

- Physical access
- Economic access
- Cultural access

MEASUREMENT of Availability:

- Statistics
  - Distribution within country
  - Density per 10,000 population
- Indicators
  - Facilities, beds
  - Health workforce
  - Outpatient utilization
  - Inpatient discharge rates
Measuring health systems strengthening:
Service Availability and Readiness

- Global core set of indicators and measurement methods to detect change and monitor progress in HSS
- Measurement tool: Service Availability and Readiness to address critical data gaps in service availability and readiness
  - Availability: Physical presence of services
  - Readiness: Capacity to deliver services
- Builds on experiences of SAM, SFA working with USAID and partners to scale up SAH in countries

Index of tracer items for scores

- Needs adequate number of tracer items that capture different aspects of service delivery
- Provides objective information whether or not a facility meets a required condition
- Can be summarized using summary or composite indicators or 'indices'
  - As mean or median or conditional score (all items for a minimum standard are met)
  - As a score of all items or of domains (item groups)

How to score = Rate/benchmark*100%

- Facility density: usually there is a country target, such as at least one facility per 5,000 population, or 2 per 10,000.
- Inpatient beds: the global average is 27 per 10,000; lower and upper middle-income countries have 18 and 25 hospital beds per 10,000 respectively. As an arbitrary benchmark 40 per 10,000 is selected.
- Maternity beds: under the assumption that there should be sufficient beds for all pregnant women with an occupancy rate of 50% (to account for the uneven spread of demand over time) and a mean duration of stay of 4.5 days, the target should be 2.43/365 * 1000 = 25 per 1,000 pregnant women.
- Health workers: the WHO has published a figure of 23 per 10,000 population
- Outpatient service utilization: In the OECD countries, the average number of physician consultations per person per year is about 6. The proposed benchmark is 5 visits per person per year.
- Inpatient service utilization: In the OECD countries, which have an ageing population, there are about 23 discharges per 100 population per year. 80 discharges per 100 people per year is proposed as a benchmark.

Main domains assessed

To generate reliable information on

1) Service Availability
   - Facility density, health worker density, service utilization
2) Service readiness
   - Basic amenities, equipment, supplies, diagnostics, essential medicines, and commodities
3) Specific service readiness areas:
   - Family planning, antenatal care
   - Obstetric care
   - Neonatal care and child health (curative, immunization)
   - HIV, malaria, TB, other

2. General service readiness

   1. Basic amenities: % facilities with 7 items (plastic water source, room with privacy, adequate sanitation facilities, communication equipment, access to computer with internet, emergency transportation)
   2. Basic equipment: % facilities with 7 items (blood pressure, sphygmomanometer, adult scale, infant scale, child scale, thermometers, and light source)
   3. Standard precautions: % facilities with 13 items (sterilization equipment, safe disposal of sharps and infectious wastes, sharps box, waste receptacles, disposable syringes, disinfectant, hand-washing soap and water or alcohol-based hand rub, latex gloves, masks, gowns, eye protection, and guidelines)
   4. Laboratory capacity: % facilities with 12 items (hemoglobin, blood glucose, malaria diagnostic capacity, urinalysis, prenatal urine dipstick, glucose, HIV diagnostic capacity, OBS collection, TB microscopy, LMP RDT, general microscopy, urine pregnancy test, ELISA and oocytes)
   5. Essential medicines: % of 14 essential medicines available
3. Service specific readiness

- Family planning
- Maternal & newborn care
- Child health
- HIV/AIDS (VCT, PMTCT, ART)
- Malaria
- Tuberculosis
- Non-communicable diseases

"Readiness" to deliver services =
Trained staff + Guidelines + Equipment/supplies + Diagnostics + Medicines/commodities

Service availability and readiness for health sector reviews: Methodology

- Availability: requires a national master list of health facilities
  - Provides data on the availability of services
  - Needs to be updated by districts
  - Repeat census of facilities every 5 years
- Readiness: sample of facilities by type, including public and private facilities
  - Sample size 150+ facilities for national domain (stratified by facility type, managing authority)
  - Consider combining with quality assessment of routine data
- Execution
  - Conduct about 4-6 months before health sector review date
  - National team
  - Use of electronic data collection and automated table production

Process and budgeting

- Country adaptation of instrument and training of data collectors/supervisors
- Equipment
  - Data collection device (e.g., PDAs, netbooks, laptops)
  - GPS units
  - Software - data collection (e.g., CSPro) and data analysis (e.g., Stata, SPSS, R)
- Field survey
  - 2 person teams + driver (transport & per diem)
  - On average 2 facilities per day
  - Supervision
- Data processing, analysis and report writing
- Analytical /dissemination workshop (as part of the analytical reviews)
### Global SHPPS Objectives

- Generate scientifically credible school-level data that describe characteristics of school health policies and practices
- Focus on
  - Healthy and safe school environment
  - Health services
  - Nutrition services
  - Health education
  - Physical education
- Document trends over time in school health policies and practices
- Allow for cross-country comparisons

### Global SHPPS Methods

### Questionnaire Content

- Healthy and safe school environment
- Health services
- Nutrition services
- Instruction on health-related topics
- Physical education and activity

### Sampling

- Selection of schools with probability proportional to size
- n ~ 250 to 300 schools per country
- Inclusion of GSHS sample
- Proportional distribution of primary and secondary schools

### Respondents

- Head teacher or principal
- Teacher of health education or physical education
- School nurse or other health care provider

### Survey Administration

- Self-administered questionnaire
- Use of computer scannable answer sheets or questionnaire booklets
- Distributed by mail, email, or personal delivery
- Returned by mail, email, or personal delivery
INTERCOUNTRY WORKSHOP FOR NCD SURVEILLANCE AND MONITORING
National Cancer Centre, Republic of Korea
3 - 7 December 2012

DATA TO ACTION

PARTICIPANT'S WORKBOOK
Contents

INTRODUCTION........................................................................................................... 1

DAY 1 SITUATIONAL ANALYSIS................................................................................ 4
  Activity 1.1 Timelines............................................................................................ 4

DAY 2 RISK FACTOR SURVEYS ............................................................................. 5
  Activity 2.1 Risk Factor Surveillance in Adults...................................................... 5
  Activity 2.2 Risk Factor Surveillance in Children/Youth ........................................ 6

DAY 3 MORTALITY REGISTRATION AND DISEASE REGISTRIES....................... 7
  Activity 3.1 Strengthening Mortality Registration .................................................. 7
  Activity 3.2 Strengthening Cancer Registries.......................................................... 8

DAY 4 HEALTH SYSTEM RESPONSE ..................................................................... 9
  Activity 4.1 Measuring Health System Response to NCD....................................... 9

DAY 5 DATA TO ACTION ......................................................................................... 10
  5.1 Data Presentation and Dissemination................................................................. 10
  5.2 Prioritization..................................................................................................... 11
  5.3 Identifying a Component of the Priority ........................................................... 13
  5.4 Problem-solution Tree ...................................................................................... 15
  5.5 Action Plan........................................................................................................ 17

ANNEX

Report of the Formal Meeting of Member States to conclude the work on the comprehensive global monitoring framework, including indicators and a set of voluntary global targets for the prevention and control of noncommunicable diseases (A/NCD/2 21 November 2012)
Noncommunicable disease (NCD) prevention and control is a regional and global priority. The 62nd Regional Committee Resolution on Expanding and Intensifying Noncommunicable Disease Prevention and Control (WPR/RC62.R2) calls on WHO to provide technical support in the area of NCD surveillance and monitoring and to assist countries in setting national targets and indicators by the end of 2012, in line with the voluntary global targets and indicators. The formal meeting of Member States in November 2012 concluded the work on the comprehensive global monitoring framework, including indicators and a set of voluntary global targets for the prevention and control of NCD (Annex). Table 1 presents the set of voluntary global targets.

Table 1. A set of voluntary global targets for the prevention and control of noncommunicable diseases

<table>
<thead>
<tr>
<th>Component: Mortality and morbidity</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premature mortality from NCD</td>
<td></td>
</tr>
<tr>
<td>Target: A 25% relative reduction in overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases.</td>
<td>Unconditional probability of dying between ages 30 and 70 from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component: Risk factors</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral risk factors:</td>
<td></td>
</tr>
<tr>
<td>Harmful use of alcohol¹</td>
<td></td>
</tr>
<tr>
<td>Target: At least 10% relative reduction in the harmful use of alcohol,² as appropriate, within the national context.</td>
<td>• Total (recorded and unrecorded) alcohol per capita (15+ years old) consumption within a calendar year in litres of pure alcohol, as appropriate, within the national context.</td>
</tr>
<tr>
<td></td>
<td>• Age-standardized prevalence of heavy episodic drinking among adolescents and adults, as appropriate, within the national context.</td>
</tr>
<tr>
<td></td>
<td>• Alcohol-related morbidity and mortality among adolescents and adults, as appropriate, within the national context.</td>
</tr>
<tr>
<td>Physical inactivity</td>
<td>• Prevalence of insufficiently physically active adolescents defined as less than 60 minutes of moderate to vigorous intensity activity daily</td>
</tr>
<tr>
<td>Target: A 10% relative reduction in prevalence of insufficient physical activity.</td>
<td>• Age-standardized prevalence of insufficiently physically active persons aged 18+ years (defined as less than 150 minutes of moderate-intensity activity per week, or equivalent).</td>
</tr>
</tbody>
</table>

¹ Countries will select indicator(s) of harmful use as appropriate to national context and in line with WHO's global strategy to reduce the harmful use of alcohol and that may include prevalence of heavy episodic drinking, total alcohol per capita consumption, and alcohol-related morbidity and mortality among others.

² In WHO's global strategy to reduce the harmful use of alcohol the concept of the harmful use of alcohol encompasses the drinking that causes detrimental health and social consequences for the drinker, the people around the drinker and society at large, as well as the patterns of drinking that are associated with increased risk of adverse health outcomes.
<table>
<thead>
<tr>
<th>Component: Risk factors</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Behavioral risk factors:</strong></td>
<td></td>
</tr>
<tr>
<td>Salt/sodium intake</td>
<td>Age-standardized mean population intake of salt (sodium chloride) per day in grams in persons aged 18+ years.</td>
</tr>
<tr>
<td><strong>Tobacco Use</strong></td>
<td>• Prevalence of current tobacco use among adolescents</td>
</tr>
<tr>
<td>Target: A 30% relative reduction in prevalence of current tobacco use in persons aged 15+ years</td>
<td>• Age-standardized prevalence of current tobacco use among persons aged 18+ years</td>
</tr>
<tr>
<td><strong>Biological risk factors:</strong></td>
<td></td>
</tr>
<tr>
<td>Blood pressure</td>
<td>Age-standardized prevalence of raised blood pressure among persons aged 18+ years (defined as systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg).</td>
</tr>
<tr>
<td>Target: A 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure according to national circumstances.</td>
<td></td>
</tr>
<tr>
<td><strong>Diabetes and obesity</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
<td>• Age-standardized prevalence of raised blood glucose/diabetes among persons aged 18+ years (defined as fasting plasma glucose value ≥7.0 mmol/L (126 mg/dl) or on medication for raised blood glucose.</td>
</tr>
<tr>
<td>Target: Halt the rise in diabetes and obesity</td>
<td>• Prevalence of overweight and obesity in adolescents (defined according to the WHO growth reference for school-aged children and adolescents, overweight – one standard deviation body mass index for age and sex and obese – two standard deviations body mass index for age and sex).</td>
</tr>
<tr>
<td></td>
<td>• Age-standardized prevalence of overweight and obesity in persons aged 18+ years (defined as body mass index ≥25 kg/m² for overweight and body mass index ≥30 kg/m² for obesity).</td>
</tr>
</tbody>
</table>

<sup>1</sup> WHO's recommendation is less than 5 grams of salt or 2 grams of sodium per person per day.

<sup>2</sup> Countries will select indicator(s) appropriate to national context.
### Component: National systems response

<table>
<thead>
<tr>
<th>Drug therapy to prevent heart attacks and strokes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target:</strong> At least 50% of eligible people receive drug therapy and counselling (including glycemic control) to prevent heart attacks and strokes.</td>
</tr>
<tr>
<td><strong>Indicators</strong></td>
</tr>
<tr>
<td>Proportion of eligible persons (defined as aged 40 years and over with a 10-year cardiovascular risk ( \geq 30% ), including those with existing cardiovascular disease) receiving drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Essential NCD medicines and basic technologies to treat major NCD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target:</strong> An 80% availability of affordable basic technologies and essential medicines, including generics, required to treat major NCD in both public and private facilities.</td>
</tr>
<tr>
<td><strong>Indicators</strong></td>
</tr>
<tr>
<td>Availability and affordability of quality, safe and efficacious essential noncommunicable disease medicines, including generics, and basic technologies in both public and private facilities.</td>
</tr>
</tbody>
</table>

### Participant's workbook

The Participant's Workbook for the Intercountry Workshop for NCD surveillance and monitoring was developed to assist NCD programme managers, national health statistics officers and representatives from the academy to systematically assess and analyse country capacity for NCD surveillance and monitoring, to help identify the steps to strengthen national NCD surveillance and monitoring, and assist in setting national targets and indicators for NCD prevention and control.

### Outline of activities

<table>
<thead>
<tr>
<th>Day</th>
<th>Theme</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Situational analysis</td>
<td>1.1 Timelines</td>
</tr>
<tr>
<td>2</td>
<td>Risk factor surveys</td>
<td>2.1 Risk factor surveillance in adults&lt;br&gt;2.2 Risk factor surveillance in children/youth</td>
</tr>
<tr>
<td>3</td>
<td>Mortality registration and disease registries</td>
<td>3.1 Strengthening mortality registration&lt;br&gt;3.2 Strengthening cancer registries</td>
</tr>
<tr>
<td>4</td>
<td>Health system response</td>
<td>4.1 Measuring health system response to NCD</td>
</tr>
<tr>
<td>5</td>
<td>Data to action and next steps</td>
<td>Data to action&lt;br&gt;5.1 Data presentation and dissemination&lt;br&gt;5.2 Prioritization&lt;br&gt;5.3 Identifying a component of the priority&lt;br&gt;5.4 Problem-solution tree&lt;br&gt;5.5 Action plan</td>
</tr>
</tbody>
</table>
ACTIVITY 1.1 TIMELINES

OBJECTIVE To provide a snapshot of NCD surveillance and monitoring in countries

INSTRUCTION 1. Reflect on your work in NCD surveillance and monitoring. What was the highest point or best achievement? What was the lowest point?
2. Mark all the activities along the timeline. Indicate the highest and lowest points.
3. What factors facilitated the highest point? What factors contributed to the lowest point? Write these down on metacards and paste on the timeline.
ANNEX 2

VOLUNTARY GLOBAL TARGETS FOR THE PREVENTION AND CONTROL OF NONCOMMUNICABLE DISEASES

Table 2 provides nine voluntary global targets for consideration by Member States. Achievement of these targets by 2025 would represent major progress in the prevention and control of noncommunicable diseases.

Table 2. A set of voluntary global targets for the prevention and control of noncommunicable diseases

<table>
<thead>
<tr>
<th>Component: Mortality and morbidity</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premature mortality from noncommunicable disease</td>
<td></td>
</tr>
<tr>
<td>Target: A 25% relative reduction in overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases.</td>
<td>Unconditional probability of dying between ages 30 and 70 from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component: Risk factors</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Behavioural risk factors:</strong></td>
<td></td>
</tr>
<tr>
<td>Harmful use of alcohol¹</td>
<td></td>
</tr>
<tr>
<td>Target: At least a 10% relative reduction in the harmful use of alcohol,² as appropriate, within the national context.</td>
<td>Total (recorded and unrecorded) alcohol per capita (15+ years old) consumption within a calendar year in litres of pure alcohol, as appropriate, within the national context.</td>
</tr>
<tr>
<td></td>
<td>Age-standardized prevalence of heavy episodic drinking among adolescents and adults, as appropriate, within the national context.</td>
</tr>
<tr>
<td></td>
<td>Alcohol-related morbidity and mortality among adolescents and adults, as appropriate, within the national context.</td>
</tr>
</tbody>
</table>

| Physical inactivity |  |
|---------------------|  |
| Target: A 10% relative reduction in prevalence of insufficient physical activity. | Prevalence of insufficiently physically active adolescents defined as less than 60 minutes of moderate to vigorous intensity activity daily. |
| | Age-standardized prevalence of insufficiently physically active persons aged 18+ years (defined as less than 150 minutes of moderate-intensity activity per week, or equivalent). |

| Salt/sodium intake |  |
|--------------------|  |
| Target: A 30% relative reduction in mean population intake of salt/sodium intake.³ | Age-standardized mean population intake of salt (sodium chloride) per day in grams in persons aged 18+ years. |

¹ Countries will select indicator(s) of harmful use as appropriate to national context and in line with WHO's global strategy to reduce the harmful use of alcohol and that may include prevalence of heavy episodic drinking, total alcohol per capita consumption, and alcohol-related morbidity and mortality among others.

² In WHO's global strategy to reduce the harmful use of alcohol the concept of the harmful use of alcohol encompasses the drinking that causes detrimental health and social consequences for the drinker, the people around the drinker and society at large, as well as the patterns of drinking that are associated with increased risk of adverse health outcomes.

³ WHO's recommendation is less than 5 grams of salt or 2 grams of sodium per person per day.
### Tobacco

**Target:** A 30% relative reduction in prevalence of current tobacco use in persons aged 15+ years.  
- Prevalence of current tobacco use among adolescents.  
- Age-standardized prevalence of current tobacco use among persons aged 18+ years.

### Biological risk factors:

#### Blood pressure

**Target:** A 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure according to national circumstances.  
- Age-standardized prevalence of raised blood pressure among persons aged 18+ years (defined as systolic blood pressure \( \geq 140 \text{ mmHg} \) and/or diastolic blood pressure \( \geq 90 \text{ mmHg} \)).

#### Diabetes and obesity

**Target:** Halt the rise in diabetes and obesity.  
- Age-standardized prevalence of raised blood glucose/diabetes among persons aged 18+ years (defined as fasting plasma glucose value \( \geq 7.0 \text{ mmol/L} \) (126 mg/dl) or on medication for raised blood glucose.  
- Prevalence of overweight and obesity in adolescents (defined according to the WHO growth reference for school-aged children and adolescents, overweight – one standard deviation body mass index for age and sex and obese – two standard deviations body mass index for age and sex).  
- Age-standardized prevalence of overweight and obesity in persons aged 18+ years (defined as body mass index \( \geq 25 \text{ kg/m}^2 \) for overweight and body mass index \( \geq 30 \text{ kg/m}^2 \) for obesity).

### Component: National systems response

#### Drug therapy to prevent heart attacks and strokes

**Target:** At least 50% of eligible people receive drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes.  
- Proportion of eligible persons (defined as aged 40 years and over with a 10-year cardiovascular risk \( \geq 30\% \), including those with existing cardiovascular disease) receiving drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes.

#### Essential noncommunicable disease medicines and basic technologies to treat major noncommunicable diseases

**Target:** An 80% availability of the affordable basic technologies and essential medicines, including generics, required to treat major noncommunicable diseases in both public and private facilities.  
- Availability and affordability of quality, safe and efficacious essential noncommunicable disease medicines, including generics, and basic technologies in both public and private facilities.

---

1 Countries will select indicator(s) appropriate to national context.
## ACTIVITY 2.1  RISK FACTOR SURVEILLANCE IN ADULTS

**OBJECTIVE**
To review the current status of population-based risk factor surveys in adults and identify options for development/strengthening adult NCD surveillance system.

**INSTRUCTION**
Please refer to the NCD global targets and indicators (risk factors) and complete the table.

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation</th>
<th>Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the risk factor surveys for adults in the country?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What staffing, governance and management structures are in place?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is the technical capacity (staff and software) to conduct such surveys?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How has data from risk factor surveys in adults been used in your country and by whom? (e.g., MOH NCD coordinator advocated to finance dept for funds June 2012)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When is your suggested plan to conduct the next adult risk factor survey in your country?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**ACTIVITY 2.2**  
**RISK FACTOR SURVEILLANCE IN CHILDREN/YOUTH**

**OBJECTIVE**  
To review the current status of population-based risk factor surveys in children/youth and identify options for development/strengthening children/youth NCD surveillance system.

**INSTRUCTION**  
Please refer to the NCD global targets and indicators (risk factors) and complete the table.

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation</th>
<th>Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the risk factor surveys for children/youth in the country?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What staffing, governance and management structures are in place?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is the technical capacity (staff and software) to conduct such surveys?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How has data from risk factor surveys in youth/children been used in your country and by whom?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When is your suggested plan to conduct the next risk factor survey in your country?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## DAY 3
### MORTALITY REGISTRATION AND DISEASE REGISTRIES

#### ACTIVITY 3.1
**STRENGTHENING MORTALITY REGISTRATION**

#### OBJECTIVE
To review the current status of mortality registration and identify options for development/strengthening.

#### INSTRUCTION
Please refer to the NCD global targets and indicators (mortality) and complete the table.

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation</th>
<th>Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your country have a system for registering mortality by cause of death on a regular basis?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Please describe the process of death registration and who is involved in the process.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is the technical capacity (staff and software) on mortality registration?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How has data from mortality been used in your country and by whom?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**ACTIVITY 3.2**  
**STRENGTHENING CANCER REGISTRIES**

**OBJECTIVE**  
To review the current status of cancer registration and identify options for development/strengthening.

**INSTRUCTION**  
Please refer to the NCD global targets and indicators (morbidity-cancer incidence) and complete the table.

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation</th>
<th>Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your country have a system for cancer registration?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is it population-based or hospital-based?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Please describe the process of cancer registration and who is involved in the process.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How has data from cancer registration been used in your country and by whom?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many specialized centres/hospitals for cancer are there in the country?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is the technical capacity (manpower such as pathologists, etc.) and how are they distributed in the country (per region/state/province)?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**ACTIVITY 4.1  MEASURING HEALTH SYSTEM RESPONSE TO NCD**

**OBJECTIVE**
To review the health system response to NCD and identify options for development/strengthening

**INSTRUCTION**
Please refer to the NCD global targets and indicators (national system response) and complete the table.

<table>
<thead>
<tr>
<th>Guide Questions</th>
<th>Current situation</th>
<th>Key Challenges</th>
<th>What can be done to address these challenges?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there any central agency responsible for collating data on health system response to the NCD epidemic?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What data is being collected through health information systems on NCD?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does it include data from the private sector (hospitals, insurance, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are any of the indicators in the proposed WHO global monitoring framework included in the data collection?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DATA TO ACTION

5.1 DATA PRESENTATION AND DISSEMINATION

SCOPES
As a researcher or programme manager you are familiar with the data and tables, acronyms, statistical terms etc. This may not be the case with policy makers, who are busy and have to get the important issues quickly.

A 142-page report with 86 tables and 16 charts if given to a policy maker will be of not much benefit. You should be able to develop a 2-3 page summary with key findings in a simple language with good use of the data presentation tools.

OBJECTIVE
To assess the process of reporting surveys, use of data presentation tools, developing policy advocacy materials, and dissemination of results.

Activity 5.1

Consider the most recent survey on NCD or related areas in your country. Discuss as a country group and complete the table.

<table>
<thead>
<tr>
<th>Guide questions</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>How long did it take to develop the report (when was the survey done and when was the report published?)</td>
<td></td>
</tr>
<tr>
<td>How are the results disseminated? Who are the target audience?</td>
<td></td>
</tr>
<tr>
<td>Is the report available on the internet?</td>
<td></td>
</tr>
<tr>
<td>Are the data publicly available for further analysis/research?</td>
<td></td>
</tr>
<tr>
<td>Are the results of this survey developed as a policy advocacy material?</td>
<td></td>
</tr>
<tr>
<td>Are there any journal articles based on the survey data/results?</td>
<td></td>
</tr>
</tbody>
</table>
### 5.2 PRIORITY IDENTIFICATION

**SCOPE**

There are many interventions for NCD prevention and control. Countries have to prioritize the most feasible intervention in terms of the impact, political interest and resources available. It is better to do one intervention with good coverage and impact rather than doing many scattered and sporadic activities.

**OBJECTIVE**

To identify priority interventions for NCD prevention and control in the country setting

**INSTRUCTION**

WHO 'best buys' are listed in the first column of the table. Assess these interventions in relation to the disease/risk factor burden, political interest for action and resources (human, financial and institutional). Write your scores on the three areas from 1 to 5, where 1 is the lowest and 5 the highest score. Add your score on the last column (Priority score) and highlight or encircle the intervention with the highest score. If there are two interventions with the same priority score, you can further discuss that in your country group and select only one (considering other locally relevant criteria). The NCD intervention with the highest priority score will be chosen for the next steps.

Below is an example. Replacement of trans-fats with polyunsaturated fats was highlighted as the priority NCD intervention.

<table>
<thead>
<tr>
<th>NCD interventions</th>
<th>Criteria</th>
<th>Priority score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Burden of the problem (B)</td>
<td>Political interest for action (P)</td>
</tr>
<tr>
<td>BEST BUY 1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>BEST BUY 2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>BEST BUY 3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Replacement of trans-fats with polyunsaturated fats</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

**PRIORITY INTERVENTION:**

Replacement of trans-fats with polyunsaturated fats
### Activity 5.2

The following table has the WHO 'best buys' as proposed interventions. Discuss this with your country team members, assign scores and identify a priority intervention.

<table>
<thead>
<tr>
<th>Risk factor / NCD</th>
<th>Specific intervention</th>
<th>Criteria</th>
<th>Resources</th>
<th>Priority score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco use</td>
<td>Excise tax increases</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Smoke-free indoor workplaces and public places</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Health information and warnings about tobacco</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bans on advertising and promotion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harmful use of alcohol</td>
<td>Excise tax increases on alcoholic beverages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Comprehensive restrictions and bans on alcohol marketing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Restrictions on the availability of retailed alcohol</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unhealthy diet and physical inactivity</td>
<td>Salt reduction through mass media campaigns and reduced salt content in processed foods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Replacement of trans-fats with polyunsaturated fats</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Public awareness programme about diet and physical activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cancer</td>
<td>Prevention of liver cancer through hepatitis B immunization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prevention of cervical cancer through screening (visual inspection with acetic acid [VIA]) and treatment of pre-cancerous lesions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CVD and diabetes</td>
<td>Multi-drug therapy (including glycaemic control for diabetes mellitus) for individuals who have had a heart attack or stroke, and to persons at high risk (&gt; 30%) of a cardiovascular event within 10 years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Providing aspirin to people having an acute heart attack</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PRIORITY INTERVENTION:**
There are several aspects of NCD interventions that should be considered. Policy development, monitoring, political support, as well as availability of resources are only some of the examples of these aspects.

To assess the different components of the NCD intervention and identify which has the highest need for improvement.

The radar chart is a chart and/or plot that consist of a sequence of equiangular spokes, called radii, with each spoke representing one of the variables. The data length of a spoke is proportional to the magnitude of the variable for the data point relative to the maximum magnitude of the variable across all data points. A line is drawn connecting the data values for each spoke. This gives the plot a star-like appearance and the origin of one of the popular names for this plot.

Each "leg" of the radar represents a component of the NCD intervention. The legs are scored from 1 to 5, 5 being the best situation and 1 the least situation. First using blue colour, indicate the current situation in the five components. Then using the red pen, indicate the level which you would like to achieve in the next two years. Connect the blue dots with blue line and red dots with red line. The biggest gap is in policy development followed by consumer awareness. You can choose the component with the biggest gap or a component which is critical.

In this example, policy development was the chosen component of the priority intervention (replacement of trans-fats with polyunsaturated fats).

**COMPONENT CHOSEN:**  
Policy development
Activity 5.3

Using the priority intervention, develop the radar chart for the relevant components. Discuss this with your country team members what the relevant components of your priority intervention. At the end of this activity, you should be able to choose a component for further action.

COMPONENT CHosen:
5.4 PROBLEM-SOLUTION TREE

**SCOPE**
The problem solution tree helps to identify barriers and actions to counter them. Using the approach, you can analyze the program in detail.

**OBJECTIVE**
To identify issues surrounding the core problem of the component chosen and come up with solutions on the identified issues.

**INSTRUCTION**
To use the problem-solution tree, identify the core problem of the component. Write this in the box provided. Identify the direct and indirect causes of the core problem. This can be achieved by asking the question “why?” several times until all possible causes/roots of the problem are exhausted. Draw arrows to show the relationships of the causes among one another and their pathways toward the problem. Once all possible causes are considered, identify possible solutions to address these causes.

Below is a simplified example. Four causes of lack of policy on trans fats were identified, with arrows showing their relationships and pathways. Possible solutions were written inside the thought bubbles above or beside the causes.
Activity 5.4

Develop a problem-solution tree stating the core problem, its causes, and possible solutions. Note that the more detailed the analysis is, the greater is the probability of identifying effective solutions.
5.5 ACTION PLAN

SCOPE
The effective solutions identified through the problem solution tree has to be prioritized taking into account the importance and feasibility. The solution which receives the highest score can be developed as an action plan.

OBJECTIVE
To identify the priority solution and formulate an action plan.

INSTRUCTION
List down the solutions that you identified in Activity 5.4 on the blank table provided (Table 5a). Discuss with your country team members how important (I) and how feasible (F) the solutions are. For each solution, put a score of 1 to 5 on (I) and (F), with 1 being the lowest and 5 being the highest. Multiply the scores for (I) and (F). The solution with the highest score product (I x F) will be chosen for constructing an Action Plan. Table 5.8 shows the template of an Action Plan for the chosen solution.

Below is an example. The solution which has the highest score is developed as an action plan (conduct trainings on policy development).

<table>
<thead>
<tr>
<th>Solution</th>
<th>Important (I)</th>
<th>Feasible (F)</th>
<th>I x F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create monitoring mechanism for transfat contents</td>
<td>5</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Conduct small-scale local studies on transfat</td>
<td>4</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Conduct activities to create/increase awareness on health risks of transfat</td>
<td>4</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Conduct trainings on policy development</td>
<td>5</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Review of studies on transfat from similar settings</td>
<td>4</td>
<td>2</td>
<td>8</td>
</tr>
</tbody>
</table>
Activity 5.5

Follow the instructions on the previous page and use the blank tables below.

**Table 5.A**

<table>
<thead>
<tr>
<th>Solution</th>
<th>Important (I)</th>
<th>Feasible (F)</th>
<th>I x F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Action Plan for

**Table 5.B**

<table>
<thead>
<tr>
<th>Description</th>
<th>Health</th>
<th>Other Sectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who is responsible?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actions needed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resources available/needed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitoring?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time frame?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Report of the Formal Meeting of Member States to conclude the work on the comprehensive global monitoring framework, including indicators, and a set of voluntary global targets for the prevention and control of noncommunicable diseases

1. The Formal Meeting of Member States to conclude the work on the comprehensive global monitoring framework, including indicators, and a set of voluntary global targets for the prevention and control of noncommunicable diseases, met from 5 to 7 November 2012 in Geneva and was chaired by Dr Bjørn Inge Larsen (Norway). The session was attended by representatives of 119 Member States, one regional economic integration organization, one intergovernmental organization and 17 nongovernmental organizations.

2. The revised WHO discussion paper (version dated 25 July 2012) on a comprehensive global monitoring framework, including indicators, and a set of voluntary global targets for the prevention and control of noncommunicable diseases, as well as a report summarizing the results of the discussions in each of the regional committees, were considered by Member States.

3. The attached global monitoring framework, including indicators (Annex 1) and a set of voluntary global targets for the prevention and control of noncommunicable diseases (Annex 2), were agreed by consensus. Monitoring of indicators should be done by key dimensions of equity including gender, age, and socioeconomic status, and key social determinants such as income level, education and relevant country-specific stratifiers, as appropriate.

4. The formal meeting requests the Director-General to submit this report and attached global monitoring framework, including indicators, and a set of voluntary global targets for the prevention and control of noncommunicable diseases, through the Executive Board at its 132nd session, to the Sixty-sixth World Health Assembly for its consideration and adoption.

---

1 Document A/NCD/INF./1.
2 Document A/NCD/INF./2.
5. The global monitoring framework, including indicators, and a set of voluntary global targets for the prevention and control of noncommunicable diseases will be integrated into work under way to develop a draft WHO global action plan for the prevention and control of noncommunicable diseases covering the period 2013–2020 for submission to the Sixty-sixth World Health Assembly, through the Executive Board.

6. The formal meeting strongly recommends that the Executive Board consider this report and its attachments, with a view to adopting the framework and the set of voluntary global targets, and to recommending their adoption to the World Health Assembly without re-opening discussion on them.
ANNEX 1

COMPREHENSIVE GLOBAL MONITORING FRAMEWORK FOR NONCOMMUNICABLE DISEASES, INCLUDING A SET OF INDICATORS

1. Table 1 presents a set of 25 indicators. The indicators, covering the three components of the global monitoring framework, are listed under each component.

Table 1. Indicators to monitor trends and assess progress made in the implementation of strategies and plans on noncommunicable diseases

<table>
<thead>
<tr>
<th>Component: Mortality and morbidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Unconditional probability of dying between ages 30 and 70 years from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases.</td>
</tr>
<tr>
<td>• Cancer incidence, by type of cancer, per 100,000 population.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component: Risk factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioural risk factors:</td>
</tr>
<tr>
<td>• Harmful use of alcohol: $^1$ Total (recorded and unrecorded) alcohol per capita (15+ years old) consumption within a calendar year in litres of pure alcohol, as appropriate, within the national context.</td>
</tr>
<tr>
<td>• Harmful use of alcohol: Age-standardized prevalence of heavy episodic drinking among adolescents and adults, as appropriate, within the national context.</td>
</tr>
<tr>
<td>• Harmful use of alcohol: Alcohol-related morbidity and mortality among adolescents and adults, as appropriate, within the national context.</td>
</tr>
<tr>
<td>• Age-standardized prevalence of persons (aged 18+ years) consuming less than five total servings (400 grams) of fruit and vegetables per day.</td>
</tr>
<tr>
<td>• Prevalence of insufficiently physically active adolescents (defined as less than 60 minutes of moderate to vigorous intensity activity daily).</td>
</tr>
<tr>
<td>• Age-standardized prevalence of insufficiently physically active persons aged 18+ years (defined as less than 150 minutes of moderate-intensity activity per week, or equivalent).</td>
</tr>
<tr>
<td>• Age-standardized mean population intake of salt (sodium chloride) per day in grams in persons aged 18+ years. $^2$</td>
</tr>
<tr>
<td>• Age-standardized mean proportion of total energy intake from saturated fatty acids in persons aged 18+ years. $^2$</td>
</tr>
<tr>
<td>• Prevalence of current tobacco use among adolescents.</td>
</tr>
<tr>
<td>• Age-standardized prevalence of current tobacco use among persons aged 18+ years.</td>
</tr>
</tbody>
</table>

$^1$ Countries will select indicator(s) of harmful use of alcohol, as appropriate to national context and in line with WHO's global strategy to reduce the harmful use of alcohol, which may include prevalence of heavy episodic drinking, total alcohol per capita consumption, and alcohol-related morbidity and mortality among others.

$^2$ Individual fatty acids within the broad classification of saturated fatty acids have unique biological properties and health effects that can have relevance in developing dietary recommendations.
Biological risk factors:

- Age-standardized prevalence of raised blood glucose/diabetes among persons aged 18+ years (defined as fasting plasma glucose value ≥7.0 mmol/L (126 mg/dl) or on medication for raised blood glucose).

- Age-standardized prevalence of raised blood pressure among persons aged 18+ years (defined as systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg); and mean systolic blood pressure.

- Prevalence of overweight and obesity in adolescents (defined according to the WHO growth reference for school-aged children and adolescents, overweight – one standard deviation body mass index for age and sex, and obese – two standard deviations body mass index for age and sex).

- Age-standardized prevalence of overweight and obesity in persons aged 18+ years (defined as body mass index ≥25 kg/m² for overweight and body mass index ≥30 kg/m² for obesity).

- Age-standardized prevalence of raised total cholesterol among persons aged 18+ years (defined as total cholesterol ≥5.0 mmol/L or 190 mg/dl); and mean total cholesterol.

Component: National systems response

- Proportion of women between the ages of 30–49 screened for cervical cancer at least once, or more often, and for lower or higher age groups according to national programmes or policies.

- Proportion of eligible persons (defined as aged 40 years and over with a 10-year cardiovascular risk ≥30%, including those with existing cardiovascular disease) receiving drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes.

- Availability and affordability of quality, safe and efficacious essential noncommunicable disease medicines, including generics, and basic technologies in both public and private facilities.

- Vaccination coverage against hepatitis B virus monitored by number of third doses of Hep-B vaccine (HepB3) administered to infants.

- Availability, as appropriate, if cost-effective and affordable, of vaccines against human papillomavirus, according to national programmes and policies.

- Policies to reduce the impact on children of marketing of foods and non-alcoholic beverages high in saturated fats, trans-fatty acids, free sugars, or salt.

- Access to palliative care assessed by morphine-equivalent consumption of strong opioid analgesics (excluding methadone) per death from cancer.

- Adoption of national policies that limit saturated fatty acids and virtually eliminate partially hydrogenated vegetable oils in the food supply, as appropriate, within the national context and national programmes.

2. The comprehensive global monitoring framework, including the set of 25 indicators, will provide internationally comparable assessments of the status of noncommunicable disease trends over time, and help to benchmark the situation in individual countries against others in the same region, or in the same development category.

3. In addition to the indicators outlined in this global monitoring framework, countries and regions may include other indicators to monitor progress of national and regional strategies for the prevention and control of noncommunicable diseases, taking into account country- and region-specific situations.