Surveillance for NCDs: instruments and data sources

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Definition

Public health monitoring or surveillance activities comprise:

- the regular collection of health information in terms of health indicators,
- the routinely analysis of indicators over time, place and between population groups,
- sharing of available scientific knowledge and the regular dissemination of results.
Why is surveillance important?

- Sizes the problem
- Informs interventions
- Content of advocacy information
- Basis for evaluating impact of policy/practice
- Helps prioritise resources allocation
- Stimulates research
NCD surveillance Approaches

- Mortality and morbidity
- Risk factors
- National systems response
- Health outcomes monitoring
Understand the development of NCD to establish NCD surveillance

Development of non-communicable diseases

- Foetal life
  - SES
  - Nutrition
  - Diseases
  - Linear growth
  - Obesity
- Infancy and childhood
  - Maternal nutritional status & obesity
- Adolescence
  - Obesity
  - Lack of activity
  - Diet
  - Alcohol
  - Smoking
  - SE potential
- Adult Life
  - Established adult risk factors (behavioural/biological)

Range of individual risk

Accumulated risk

Age
Understand the development of NCD to establish NCD surveillance, cont.

- Metabolic risk factors
  - Raised BP
  - Overweight/obesity
  - Raised blood glucose
  - Raised lipids

- Behavioral risk factors
  - Tobacco use
  - Unhealthy diet
  - Physical inactivity
  - Harmful use of alcohol

- Underlying drivers
  - Globalization
  - Urbanization
  - Population ageing
  - Social determinants of health
Why it is important to establish NCD surveillance at country level?

- Countries have:
  - committed to Monitor NCD progress (2014)
  - committed to Set national target for GMF (2013)
  - Adopted SDG target (2015)
Reporting on indicators, cont.

2015 WHA68  2020 WHA73  2025 WHA78

2010 baseline
Reporting on indicators, cont.
Monitor NCD Progress

1. National NCD targets and indicators
2. Mortality data
3. Risk factor surveys
4. National integrated NCD strategy/action plan
5. Tobacco demand-reduction measures
   - taxation • smoke-free policies • health warnings • advertising bans
Monitor NCD Progress

Harmful use of alcohol reduction measures
- availability regulations
- advertising and promotion bans
- pricing policies

Unhealthy diet reduction measures
- salt/sodium policies
- saturated fatty acids and trans-fats policies
- marketing to children restrictions
- marketing of breast-milk substitutes restrictions

Public awareness on diet/physical activity

Guidelines for the management of major NCDs

Drug therapy/counselling for high-risk persons
By 2015:
Set national NCD targets for 2025 or 2030 and monitor results

By 2015:
Develop a national multisectoral action plan

By 2016:
Implement the "best buy" interventions to reduce NCD risk factors

By 2016:
Implement the "best buy" interventions to strengthen health systems to address NCDs
NCD Surveillance and the GMF

Global Monitoring Framework

Mortality & Morbidity
- Unconditional probability of dying between ages 30 and 70 years from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases
- Cancer incidence by type of cancer

Risk Factors
- Harmful use of alcohol (3)
- Low fruit and vegetable intake
- Physical inactivity (2)
- Salt intake
- Saturated fat intake
- Tobacco use (2)
- Raised blood glucose/diabetes
- Raised blood pressure
- Overweight and obesity (2)
- Raised total cholesterol

National Systems Response
- Cervical cancer screening
- Drug therapy and counseling
- Essential NCD medicines & technologies
- Hepatitis B vaccine
- Human Papilloma Virus vaccine
- Marketing to children
- Access to palliative care
- Policies to limit saturated fats and virtually eliminate trans fats

Total number of related indicators in brackets

25 Indicators
Nine voluntary global targets for the NCD prevention and control to be attained by 2025

- Premature mortality from NCDs 25% reduction
- Essential NCD medicines and technologies 80% coverage
- Drug therapy and counseling 50% coverage
- Diabetes/obesity 0% increase
- Salt/sodium intake 30% reduction
- Tobacco use 30% reduction
- Raised blood pressure 25% reduction
- Physical inactivity 10% reduction
- Harmful use of alcohol 10% reduction
NCD Surveillance and the SGD

Commitment of governments to develop national responses:

- **3.4**: By 2030, reduce by one third premature mortality from NCDs
- **3.5**: Strengthen responses to reduce the harmful use of alcohol
- **3.8**: Achieve universal health coverage
- **3.4.a**: Strengthen the implementation of the WHO Framework Convention on Tobacco Control
- **3.4.b**: Support research and development of vaccines and medicines for NCDs that primarily affect developing countries
- **3.4.b**: Provide access to affordable essential medicines and vaccines for NCDs
NCD Surveillance tools at WHO

- NCD global monitoring framework, indicators and targets
- NCD Country Capacity Survey (CCS)
- STEPS (adults)
- GSHS (adolescents)
- Service availability and readiness assessment (SARA)
- IDCCP Toolkit (Improving Data for Decision Making in Global Cervical Cancer Programmes Toolkit)*
- Civil registration and Vital statistic
To gather information about individual country capacity to respond to NCD prevention and control.

Assessment focused on current strengths and weaknesses related to: NCD infrastructure, policy response, surveillance and health systems response and partnerships and health promotion.

5th wave of surveillance conducted in 2015 – previous surveys in 2000, 2005, 2010 and 2013

Next wave planned for 2017.

Generally a high response rate from Member States.

Periodic monitoring of national progress would assist countries in identifying gaps in prevention and control efforts and assist with future planning.
NCD Country Capacity Survey

- Periodic assessment conducted by WHO with all countries to assess NCD infrastructure, policies and strategies, surveillance and health systems response.

- Periodic monitoring of national progress assists countries in identifying gaps in prevention and control efforts and assist with future planning, along with reporting on national commitments.

- NCD country capacity assessments have been conducted in 2000, 2005, 2010, 2013 and 2015 will shortly commence.

- Web-based data collection platform in major UN languages, completed by team of NCD officials at country level and validated by WHO and others.
**STEPS- adult risk factor surveillance**

**Objectives**

- Empower Member States to **gather information** on chronic disease risk factors **for use in planning** health programmes and interventions.

- Provide **standardized** questionnaire that allows for comparisons, but is flexible to meet Member States' needs.

- **Build capacity** in Member States in all aspects of national survey implementation; in particular, develop skills in sample design, data collection and data analysis.
A national survey of NCD risk factors and conditions, done every 3 - 5 years

Targets a nationally representative sample of adults aged 18 – 69

STEP 1 (questionnaire) and STEP 2 (physical measures) are conducted in the household by trained interviewers

STEP 3 (biochemical measures) is typically clinic or health centre-based

Electronic devices are used for data collection: "eSTEPS"

Data from STEPS surveys allows countries to monitor 7 of the 9 Global NCD targets
Different levels of risk factor assessment:

- STEP 1 – questionnaire
- STEP 2 – physical measurements
- STEP 3 – blood samples

Three modules per Step:

- Core
- Expanded
- Optional
Questionnaire Overview, cont.

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

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

- Optional Modules on Health Care, Injury and Violence, Mental Health (suicide) Oral Health, Sexual Health, and Tobacco policy
STEPS Questionnaire update 3.1

- Tobacco module harmonized with TQS to report same indicators
- Tobacco policy optional module added to harmonize with TQS policy indicators
- Alcohol module fully revised – now captures unrecorded alcohol; alcohol related problems and heavy episodic drinking
- Question on cervical cancer screening added
- Raised cholesterol history added
- CVD history added
- Lifestyle advice questions moved out of each history section and combined: now to be answered by all respondents
Questionnaire update 3.1 – new optional modules

- New module on salt
- New module on tobacco policy (TQS policy indicators)
- New module on suicide
- New module on health care costs
Global School Based Student Health Survey (GSHS) Overview & Objectives

- System for surveillance of behavioural risk factors and protective factors in school-aged children
- Help countries develop priorities, establish programmes, and advocate for resources
- Establish trends in the prevalence of health behaviors and protective factors by country
- Allow countries and international agencies to make comparisons across countries
GSHS: Methods

- Self-administered questionnaire and generic answer sheet
- Targets grades with students aged 13 – 17 years
- Completed by students during one classroom period
- Anonymous and confidential
- 10 Question Modules are available, from which countries can select a minimum of 6:
  - Alcohol, diet, drugs, hygiene, mental health, physical activity, protective factors, sexual behaviours, tobacco, violence & injury
Service Availability and Readiness Assessment (SARA)

- A health facility assessment tool designed to assess and monitor service availability and readiness of the health sector and generate evidence to support planning and managing a health system.

- Designed as a systematic survey to generate a set of tracer indicators of service availability and readiness, including:
  - availability of key human and infrastructure resources;
  - availability of basic equipment, basic amenities, essential medicines, and diagnostic capacities; and
  - readiness of health facilities to provide basic health-care interventions relating to family planning, child health services, basic and comprehensive emergency obstetric care, HIV, TB, malaria, and non-communicable diseases.
The IDCCP Toolkit is being developed to contribute to the available evidence-base for planning and implementing cervical cancer monitoring and evaluation, surveillance, and information systems at population level as well as facility level.

The IDCCP Toolkit include:
1. Population-based Surveys tool
2. Facility-based Surveys tool
3. Patient and Programme Monitoring tool
5. Data Systems Assessment tool
Civil registration and vital statistics (CRVS)

- Civil registration is the way by which countries keep a continuous and complete record of births, deaths and the marital status of their people.
- Civil registration systems are the most reliable source of statistics on births and deaths, and causes of death.
- WHO receives cause-of-death statistics regularly from about 100 Member States. However, globally, two-thirds (38 million) of 56 million annual deaths are still not registered and every year, almost half of the world’s children go unregistered.
NCD Data sources at WHO

- Global Health Observatory
- WHO Global Infobase
- Global Health Estimates (GHE)
- NCD Country Profiles 2011
- NCD Progress monitor 2015
- Global status report on NCD 2014
- Globocan 2012
Noncommunicable diseases (NCDs), such as heart disease, stroke, cancer, chronic respiratory diseases and diabetes, are the leading cause of mortality in the world. This invisible epidemic is an under-appreciated cause of poverty and hinders the economic development of many countries. The burden is growing - the number of people, families and communities affected is increasing. Common, modifiable risk factors underlie the major NCDs. They include tobacco, harmful use of alcohol, unhealthy diet, insufficient physical activity, overweight/obesity, raised blood pressure, raised blood sugar and raised cholesterol. The NCD threat can be overcome using existing knowledge. The solutions are highly cost-effective. Comprehensive and integrated action at country level, led by governments, is the means to achieve success.
NCD Country Profiles

New Zealand

2010 total population: 4,068,136
Income group: High

<table>
<thead>
<tr>
<th>NCD mortality</th>
<th>male</th>
<th>female</th>
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</thead>
<tbody>
<tr>
<td>Total NCD deaths</td>
<td>13.1</td>
<td>12.8</td>
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<tr>
<td>Deaths under age 60</td>
<td>14.1</td>
<td>11.1</td>
</tr>
<tr>
<td>Age-standardized death rate per 100,000</td>
<td>410.7</td>
<td>285.1</td>
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<tr>
<td>All NCDs</td>
<td>149.8</td>
<td>110.6</td>
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<tr>
<td>Cancers</td>
<td>31.1</td>
<td>20.5</td>
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<tr>
<td>Chronic respiratory diseases</td>
<td>17.2</td>
<td>16.2</td>
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<tr>
<th>Proportional mortality (% of total deaths, all ages)</th>
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<tbody>
<tr>
<td>NCDs</td>
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<tr>
<td>Other NCDs</td>
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<tr>
<td>Diseases</td>
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<tr>
<td>Neurological diseases</td>
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<tr>
<td>Others</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Behavioural risk factors</th>
<th>male</th>
<th>female</th>
<th>total</th>
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</thead>
<tbody>
<tr>
<td>Current daily tobacco smoking</td>
<td>21.4</td>
<td>20.1</td>
<td>20.7</td>
</tr>
<tr>
<td>Physical inactivity</td>
<td>45.9</td>
<td>50.2</td>
<td>46.1</td>
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<table>
<thead>
<tr>
<th>Metabolic risk factors</th>
<th>male</th>
<th>female</th>
<th>total</th>
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</thead>
<tbody>
<tr>
<td>Raised blood pressure</td>
<td>40.5</td>
<td>38.5</td>
<td>39.0</td>
</tr>
<tr>
<td>Raised blood glucose</td>
<td>62.2</td>
<td>62.6</td>
<td>62.4</td>
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<tr>
<td>Obesity</td>
<td>27.3</td>
<td>29.3</td>
<td>28.3</td>
</tr>
<tr>
<td>Raised cholesterol</td>
<td>37.5</td>
<td>37.9</td>
<td>37.7</td>
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<table>
<thead>
<tr>
<th>Metabolic risk factor trends</th>
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<tbody>
<tr>
<td>Mean systolic blood pressure</td>
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<tr>
<td>Mean diastolic blood pressure</td>
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<tr>
<td>Mean fasting blood glucose</td>
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<tr>
<td>Mean body mass index</td>
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<tr>
<td>Mean total cholesterol</td>
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<table>
<thead>
<tr>
<th>Country capacity to assess and respond to NCDs</th>
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<tbody>
<tr>
<td>Has a Unit / Branch / Dept in MoH with responsibility for NCDs</td>
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<tr>
<td>Has an integrated or disease-specific policy / programme / action plan which is currently operational for NCDs (categorised by type of NCD)</td>
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<tr>
<td>National health reporting system includes:</td>
</tr>
<tr>
<td>NCD surveillance and monitoring</td>
</tr>
<tr>
<td>NCD risk factors</td>
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<tr>
<td>Has a national, population-based cancer registry</td>
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<tr>
<td>Number of tobacco (m)POWR measures implemented at the highest level of achievement</td>
</tr>
</tbody>
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## Indonesia

Total population: 247 000 000
Income group: Lower middle
Percentage of deaths from NCDs: 71%
Total number of NCD deaths: 1 106 000
Probability of premature mortality from NCDs: 23%

<table>
<thead>
<tr>
<th>Category</th>
<th>Status</th>
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<tbody>
<tr>
<td>National NCD targets and indicators</td>
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<tr>
<td>Mortality data</td>
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<tr>
<td>Risk factor surveys</td>
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<tr>
<td>National integrated NCD policy/strategy/action plan</td>
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<tr>
<td>Tobacco demand-reduction measures</td>
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<tr>
<td>a. taxation</td>
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<td>b. smoke-free policies</td>
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<td>c. health warnings</td>
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<td>d. advertising bans</td>
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<tr>
<td>Harmful use of alcohol reduction measures</td>
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<tr>
<td>a. availability regulations</td>
<td></td>
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<td>b. advertising and promotion bans</td>
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<td>c. pricing policies</td>
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<tr>
<td>Unhealthy diet reduction measures</td>
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<tr>
<td>a. salt/sodium policies</td>
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<td>b. saturated fatty acids and trans-fats policies</td>
<td></td>
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<tr>
<td>c. marketing to children restrictions</td>
<td></td>
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<tr>
<td>d. marketing of breastmilk substitutes restrictions</td>
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<tr>
<td>Public awareness on diet and/or physical activity</td>
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<tr>
<td>Guidelines for the management of major NCDs</td>
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<tr>
<td>Drug therapy/counselling for high risk persons</td>
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〇 = not achieved  〇 = partially achieved  〇 = fully achieved  □ = documentation not available
DK = don't know

GLOBAL STATUS REPORT on noncommunicable diseases 2014

"Attaining the nine global noncommunicable diseases targets: a shared responsibility"

creating by law completely smoke-free environments in all indoor workplaces, indoor public places and public transport;

alerting people to the dangers of tobacco and tobacco smoke through effective health warnings and mass media campaigns; and

banning all forms of tobacco advertising, promotion and sponsorship.

The public health benefits of these measures are far more likely to be realized if they are implemented in an environment where they form part of a comprehensive approach, as envisaged by the WHO Framework Convention on Tobacco Control. Full implementation involves adopting other demand reduction measures such as helping tobacco users to quit and regulating tobacco products. Most smokers want to quit when...
Thank you