

Part 1: Introduction and Roles

Overview

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Section 1: Introduction

Overview

Introduction This section is an introduction to the WHO STEPS Surveillance Manual.

Purpose The purpose of the manual is to provide guidelines and supporting material for sites embarking on STEPS chronic disease risk factor surveillance, so they are able to:

- Plan and prepare the survey scope, sample and environment
 - Train staff
 - Conduct the survey
 - Capture and analyse the data collected
 - Report and disseminate the results
-

Intended audience The manual is intended for all parties responsible for implementing STEPS chronic disease risk factor surveillance in their site. The various parties include a wide range of people from public health officials in the Ministry of Health and/or any health institutions, to field staff as well as laboratory technicians, nurses and statisticians. Interested parties will read the part and sections relevant to their role in STEPS.

Guide to using the manual The manual has been written in modular parts and is structured to follow the sequence of events required to implement a STEPS survey. It is divided into seven parts. Each part of the manual is further divided into sections. Each part and section is introduced with a table of contents to help readers find specific topics. The manual includes guidelines and instructional material that can be extracted and used for:

- Training
- Data collection
- Data entry
- Data analysis

Page numbers have three components. The first number refers to the part, the second to the section and the third to the page number in that section. For example: 3-6-5 indicates Part 3, Section 6, Page 5.

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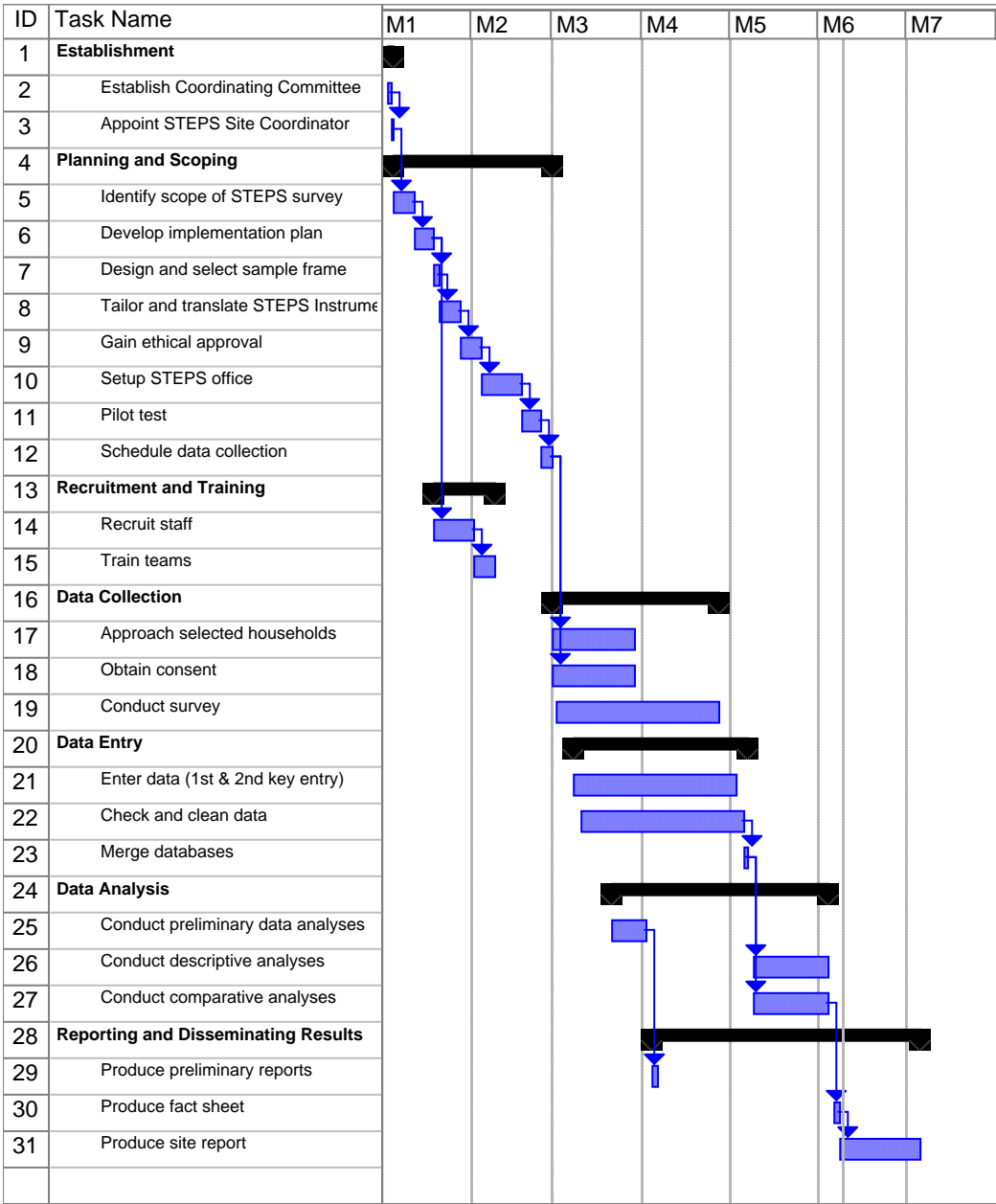
Planning and Implementation Overview

Introduction

For STEPS Surveillance to be effective, the whole process needs to be properly planned and organised before being implemented. Guidelines are provided below to help you plan your STEPS surveillance.

Key stages, tasks and timeframes

The optimal recommended total timeframe to conduct a STEPS survey of chronic disease risk factors is approximately six to eight months. This timeframe is based on seasonal considerations and countries ability to 'second' staff to the STEPS project for longer periods. It is by no means a hard and fast rule, but an indicative guideline.



Rationale for Surveillance of Chronic Disease Risk Factors

Introduction	<p>Chronic, noncommunicable diseases are responsible for 60% of all deaths globally.</p> <p>In developing countries, the burden of disease caused by chronic diseases is increasing rapidly and will have significant social, economic, and health consequences.</p>
Main chronic diseases	<p>The main chronic diseases attributable to the most common risk factors are:</p> <ul style="list-style-type: none">• Heart disease• Stroke• Cancer• Chronic respiratory diseases• Diabetes
Terminology	<p>The term "noncommunicable diseases" is used to make the distinction between these conditions and infectious or "communicable diseases".</p> <p>For STEPS surveillance, the term 'chronic diseases' is used because it emphasises the following important shared features:</p> <ul style="list-style-type: none">• The epidemics take decades to become fully established - they have their origin at young ages.• They require a long term systematic approach to treatment.• Given their long duration, there are multiple opportunities for prevention.• Health services must integrate the response to these diseases with the response to infectious diseases.
The evidence	<p>Evidence of the increasing burden of chronic disease in low and middle income countries is now very clear.</p> <ul style="list-style-type: none">• In 2002, the major chronic, noncommunicable diseases accounted for 60% of all deaths and 47% of the global burden of disease.• By 2020 these figures are expected to rise to 73% and 60%, respectively.• 80% of chronic disease deaths are already occurring in low and middle income countries.

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Rationale for Surveillance of Chronic Disease Risk Factors, Continued

Prevention The key to controlling the global epidemics of chronic diseases is primary prevention based on comprehensive population-wide programmes.

The aim is to avert these epidemics wherever possible and to control them as quickly as possible where they are already present.

Basis of prevention The basis of chronic diseases prevention is the identification of the major common risk factors and their prevention and control. The risk factors of today are the diseases of tomorrow.

Objectives of surveillance The objectives of surveillance of chronic disease risk factors and selected chronic diseases are therefore to:

- collect consistent data across and within countries,
- develop standardised tools to enable comparisons over time and across countries/sites,
- prevent chronic disease epidemics before they occur,
- help health services plan and determine public health priorities,
- predict future caseloads of chronic diseases, and
- monitor and evaluate population-wide interventions.

Selected Risk Factors

Introduction

Common, preventable risk factors underlie most chronic diseases. These chronic disease risk factors are a leading cause of the death and disability burden in all countries, regardless of their economic development status. The leading risk factor globally is raised blood pressure, followed by tobacco use, raised total cholesterol, and low fruit and vegetable consumption. The major risk factors together account for around 80% of deaths from heart disease and stroke.

Risk factor definition

A "risk factor" refers to any:

- attribute,
- characteristic, or
- exposure of an individual,

which increases the likelihood of developing a chronic noncommunicable disease.

Major behavioural risk factors

The major (modifiable) behavioural risk factors identified in the World Health Report 2002 are:

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

Major biological risk factors

The major biological risk factors identified in the World Health Report 2002 are:

- Overweight and obesity
- Raised blood pressure
- Raised blood glucose
- Abnormal blood lipids and its subset 'raised total cholesterol'

These eight major behavioural and biological risk factors are therefore included in STEPS chronic disease risk factor surveillance.

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Selected Risk Factors, Continued

Rationale for inclusion of core risk factors

The rationale for including these eight core risk factors in STEPS surveillance activities is that:

- they have the greatest impact on chronic disease mortality and morbidity,
 - modification is possible through effective prevention,
 - measurement of risk factors has been proven to be valid, and
 - measurements can be obtained using appropriate ethical standards.
-

WHO STEPS Overview

Introduction

The WHO STEPwise approach to surveillance (STEPS) is the WHO recommended surveillance tool for:

- chronic disease risk factors and
- chronic disease-specific morbidity and mortality.

It provides an entry point for low and middle income countries to get started on chronic diseases surveillance activities. It is also designed to help countries build and strengthen their capacity to conduct surveillance.

Basis of STEPS

STEPS is a sequential process. It starts with gathering key information on risks factors with a questionnaire, then moves to simple physical measurements and then to more complex collection of blood samples for biochemical analysis.

STEPS emphasises that small amounts of good quality data are more valuable than large amounts of poor data. It is based on the following two key premises:

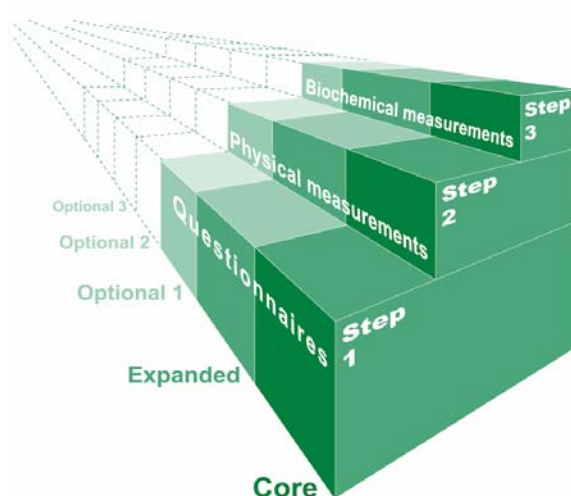
- collection of standardised data, and
 - flexibility for use in a variety of country situations and settings.
-

Population focus

STEPS uses a representative sample of the study population. This allows for results to be generalised to the population.

STEPS diagram

The following diagram illustrates the general concept of the STEPwise approach



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WHO STEPS Overview, Continued

STEPS Instrument The STEPS tool used to collect data and measure chronic disease risk factors is called the **STEPS Instrument**.

The STEPS Instrument covers three different levels or 'Steps' of risk factor assessment: Step 1, Step 2 and Step 3 as follows:

Step	Description	Purpose	Recommendation
1	Gathering demographic and behavioural information by questionnaire in a household setting.	To obtain core data on: <ul style="list-style-type: none"> • Socio-demographic information • Tobacco and alcohol use • Nutritional status • Physical activity 	All countries/sites should undertake the core items of Step 1.
2	Collecting physical measurements with simple tests in a household setting.	To build on the core data in Step 1 and determine the proportion of adults that: <ul style="list-style-type: none"> • are overweight and obese, and • have raised blood pressure. 	Most countries/sites should undertake Step 2.
3	Taking blood samples for biochemical measurement in a clinic.	To measure prevalence of diabetes or raised blood glucose and abnormal blood lipids.	Only recommended for well resourced settings.

Core, expanded and optional items Within each Step, there are three levels of data collection. These depend on what can realistically be accomplished (financially, logistically and in terms of human and clinical resources) in each country setting.

The core, expanded and optional levels of detail gathered for each Step are briefly described below:

Step	Core	Expanded	Optional
1	<ul style="list-style-type: none"> • Basic demographic information including: <ul style="list-style-type: none"> – age – sex – years at school • Tobacco use • Alcohol consumption • Types of physical activity • Sedentary behaviour • Fruit & vegetable consumption 	<ul style="list-style-type: none"> • Expanded demographic information including: <ul style="list-style-type: none"> – ethnicity – highest level of education – employment – household income • History of tobacco use • Smokeless tobacco use • Binge drinking • Oil and fat consumption • History of raised blood pressure • History of diabetes 	<ul style="list-style-type: none"> • Injury and violence • Mental health • Oral health

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WHO STEPS Overview, Continued

Core, expanded and optional items (continued)

Step	Core	Expanded	Optional
2	<ul style="list-style-type: none"> • Height and weight • Waist circumference • Blood pressure 	<ul style="list-style-type: none"> • Hip circumference • Heart rate 	<ul style="list-style-type: none"> • Skin fold thickness • Physical activity measure • Fitness assessment
3	<ul style="list-style-type: none"> • Fasting blood glucose • Total cholesterol 	<ul style="list-style-type: none"> • HDL-cholesterol & triglycerides 	<ul style="list-style-type: none"> • Oral glucose tolerance test • Urine tests • Salivary cotinine, etc.

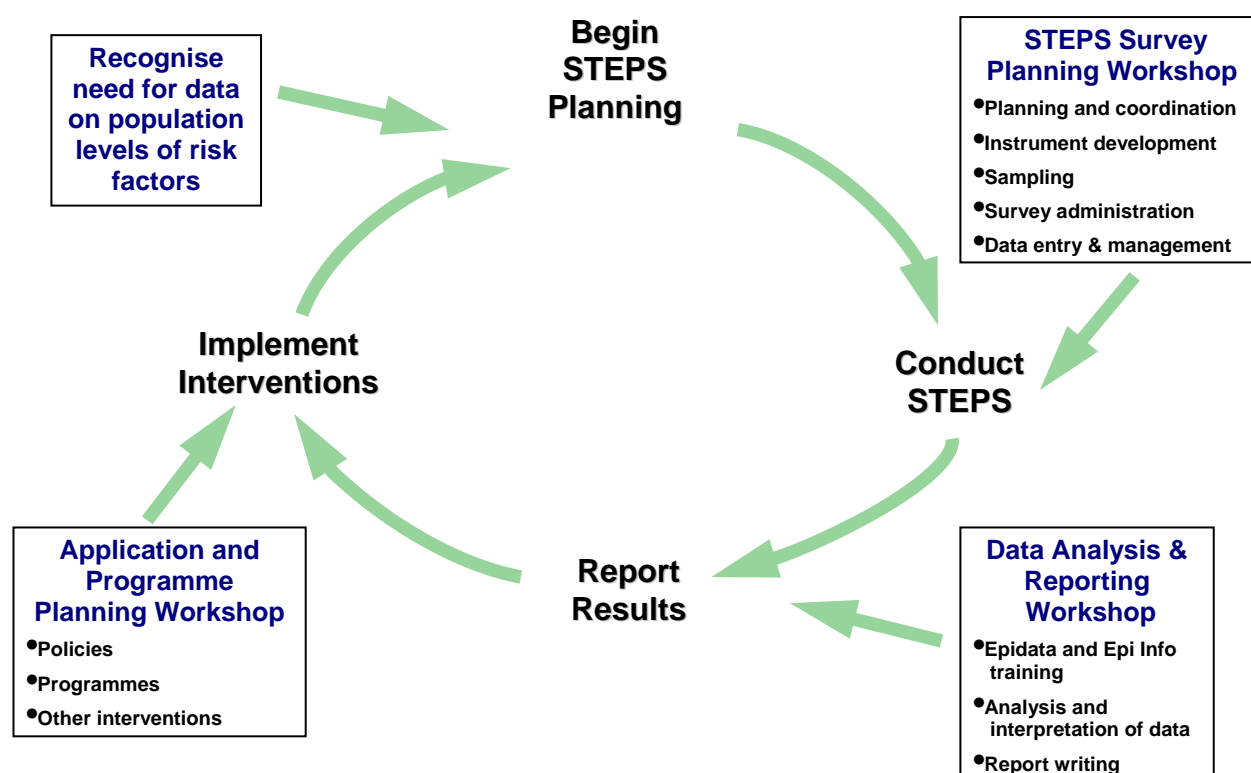
WHO Recommendations

For countries that are just getting started with chronic disease surveillance, Step 1 as well as Step 2 core and expanded questions and measurements are recommended.

From surveys to surveillance

While surveys can be a one off exercise, surveillance involves commitment to data collection on an ongoing, repeated basis. Repeat surveys are essential to identify trends in the prevalence of risk factors.

The following diagram illustrates the surveillance process.



Section 2: Roles and Responsibilities

Overview

Introduction There are a number of entities involved in STEPS surveillance at different levels including:

- country (national or subnational),
- regional, and
- global.

They all have key roles which are described below.

Purpose The purpose of this section is to:

- provide an overview of the relationships between all those involved in a STEPS surveillance study, and
 - provide a description of each of the core roles involved.
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In this section This section contains information outlining the responsibilities for the following:

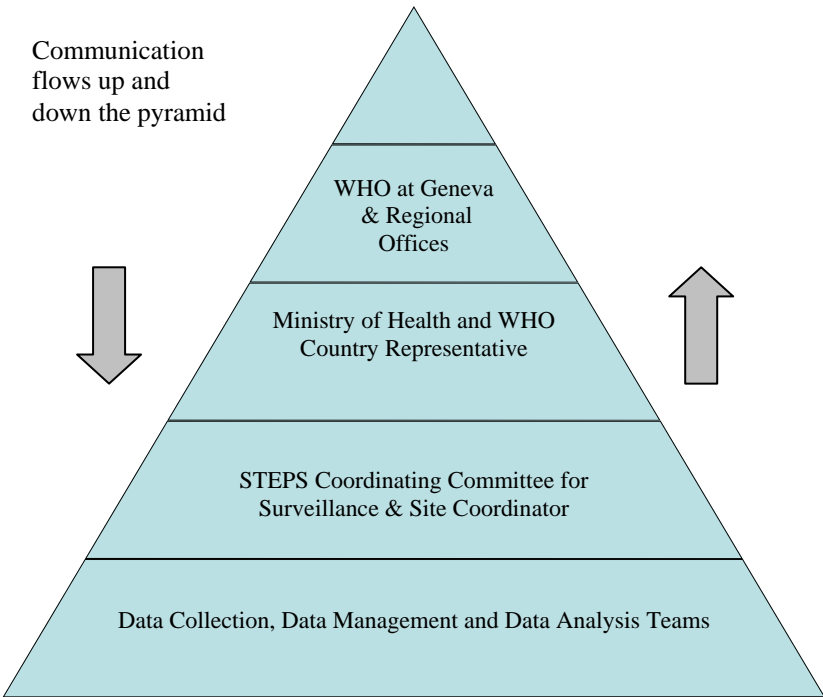
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Relationships Between Survey Team and WHO

Introduction The survey team are all those involved in the data collection, management and analysis processes.

The WHO Geneva Steps team and the WHO Regional Office provide guidance and support for STEPS surveillance.

Roles and Relationships The diagram below shows the lines of communication between all the players in a WHO STEPS Surveillance.



STEPS Site Coordinator

Introduction

The STEPS site coordinator is the key person responsible for planning and implementing STEPS.

The STEPS site coordinator should be familiar with the entire manual to understand the whole STEPS process.

Skills and attributes

The STEPS site coordinator will need to have the following general skills and attributes:

- Good written and oral communication skills
 - Ability to recruit efficient and motivated staff
 - Current knowledge of the Ministry of Health, public health institutions and the personnel involved in STEPS
 - Well organised and efficient planner
 - Able to mobilise multiple teams over a short period to complete data collection
 - Able to chair meetings of the Coordinating Committee
 - Good understanding of the philosophy and objectives of the STEPS risk factor surveillance process
-

Level of authority

The STEPS site coordinator should have sufficient authority to:

- lead the whole process of STEPS implementation,
 - negotiate and obtain resources for survey implementation,
 - oversee progress of the national/subnational STEPS implementation plan,
 - develop partnerships, and
 - contribute to the disease prevention and health promotion activities that will arise from the data gathered by STEPS.
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STEPS Site Coordinator, Continued

Core roles

The core roles of the STEPS site coordinator may include all or some of the following:

Role	Description
1	Liaising with local authorities, Coordinating Committee, WHO country representatives and other stakeholders.
2	Developing a STEPS implementation plan
3	Planning a STEPS survey
4	Coordinating the set up of a STEPS surveillance site
5	Recruiting and training field staff
6	Supervising the data collection and data entry processes
7	Reporting back results
8	Overseeing archiving of files at completion of the project
9	Planning and preparing for future surveys

Note: Information on archiving is available in Part 6 Section 4.

Coordinating Committee

Introduction The coordinating committee for surveillance (CCS) will most likely be organised within the Ministry or Department of Health.

In countries where STEPS is nationally representative, a national committee will be established. In others, where STEPS is subnationally representative, a subnational committee will be set up.

Objectives The main objective of the CCS is to oversee the practical and logistic issues relating to the overall implementation of the STEPwise approach to chronic disease risk factor surveillance (STEPS)

Core roles of the committee The core roles of the CCS are to:

- Support the STEPS site coordinator
- Act as an advocacy body for chronic disease surveillance within the country
- Develop national level partnerships with MOH and other stakeholders to enhance the capacity for ongoing chronic disease risk factors surveillance
- Identify and secure local funding and / or "in kind" support
- Oversee the overall implementation of the STEPwise approach to chronic disease risk factor surveillance (STEPS)
- Assist in translating the data into policy and programmes
- Ensure the long term sustainability of STEPS surveillance

Core roles of the chairperson The CCS chairperson is responsible for chairing meetings of the CCS and for overseeing the practical and logistic issues relating to the overall implementation of the STEPwise approach to chronic disease risk factor surveillance.

This role is usually filled by the STEPS site coordinator.

Expertise of members Members of the coordinating committee should be selected for their expertise in the following areas:

- Public health
 - Epidemiology
 - Survey and statistics
 - Clinical expertise in chronic diseases
 - Experience as an advocate for preventing chronic diseases
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Data Collection Team

Introduction

The data collection team undertakes a core function in STEPS surveillance and includes all those who have been recruited to collect the survey data.

Hiring good interviewers and other field personnel is crucial to successful data collection. The quality of data collection and the survey results depends on the consistency and quality of these workers. Training the staff is therefore a major undertaking.

Data collection supervisor roles

The data collection supervisor may be the same person as the STEPS site coordinator.

The core roles of a data collection supervisor are listed in the table below. Specific tasks are identified in Part 2 Section 3, Part 3 and Part 4 Section 1.

Role	Description
1	Training field staff.
2	Obtaining and managing household lists and maps for each area or other lists to be used as the sampling frame.
3	Informing local authorities about the survey.
4	Obtaining necessary venues, supplies and equipment.
5	Supervising the interview process and recording daily activities.
6	Ensuring data quality.
7	Managing human resource performance and issues.
8	Sending progress reports to STEPS site coordinator or regional focal point.
9	Providing completed instruments to data entry supervisor at the end of each day.

Skills and attributes

The data collection supervisor should have the following skills and attributes:

- Ability to work with teams and motivate people
 - Be well organised and efficient in planning STEPS activities
 - Able to mobilise multiple teams over a short period to complete data collection
 - Experienced in health population based surveys
 - Good understanding of the philosophy and objectives of the global STEPS risk factor surveillance process
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Data Collection Team, Continued

Interviewer roles

The interviewers are all those who have been trained to conduct the survey in the household setting using Step 1 and take physical measurements for Step 2 of the STEPS Instrument.

The core roles of an interviewer include:

Role	Description
1	Select starting household in each survey site, according to sampling frame.
2	Fill out the Interview tracking form.
3	List the members of households to be interviewed.
4	Select participants for Step 3 (if applicable).
5	Obtain participant consent and enrol participants.
6	Conduct interviews and record results for Step 1.
7	Make primary check of completed Step 1 questions .
8	Take measurements and record results for Step 2.
9	Make appointments for Step 3 (if applicable).
10	Collect all necessary forms from members of each household.
11	Check all forms before handing to supervisor.
12	Report any difficulties to supervisor.

Skills and attributes

Interviewers should have the following general skills and attributes:

- Good oral and written communication skills
- Friendly manner and patience
- Good attention to detail

Clinic health professional's roles

Clinic health professionals are those people recruited to take biochemical measurements in a clinic setting for Step 3 of the STEPS Instrument.

This role does not need health professionals with full medical training. These professionals could be nurse practitioners or medical assistants.

The core roles of a survey clinic health professional include:

Role	Description
1	Checking for appropriate participant consent.
2	Taking blood samples from participants and recording results for Step 3.
3	Labelling samples and recording Participant Identification Numbers (PIDs).

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Data Collection Team, Continued

Laboratory technicians

Laboratory technicians are the people responsible for analysing the tests taken in the clinic setting for Step 3.

The core role of a laboratory technician include:

Role	Description
1	Testing samples for lipids and glucose.
2	Recording results and passing records on for data entry.
3	Identifying out of range results for clinical attention.
4	Ordering supplies.

Note: In rare cases, Step 3 is done at the household level and therefore results cannot be determined on site. The technicians will need to freeze and dispatch samples to a laboratory and follow up on results.

Administrative staff

Administrative staff are required to:

- Organise supplies and venues
 - Print and distribute materials
 - Organise any publicity for the survey
 - Send out letters of invitation
 - File survey material in the STEPS coordination office
-

Data Management Team

Introduction The data management team includes all those who have been recruited to enter, check, clean, correct and analyse the data gathered by the survey team.

Supervisor The data management supervisor acts as the team leader of the data management team, planning and organising staff and workloads to ensure work proceeds smoothly.

The data management supervisor role may sometimes be filled by the STEPS site coordinator or the STEPS data analyst.

The core roles of a data management supervisor are listed in the table below. Specific tasks are identified in Part 2 Sections 2 & 4, Part 3 and Part 4 Section 2.

Role	Description
1	Training data entry staff
2	Obtaining necessary hardware and software
3	Planning, preparing and setting up the computing environment
4	Supervising the data entry and validation processes
5	Managing human resource performance and data management team issues
6	Seeking and providing advice on software support
7	Create master data set
8	Report problems or interview errors to the data collection team supervisor

Skills and attributes Supervisors should have the following skills and attributes:

- Ability to lead a team
 - Systematic work practices
 - Computer skills and operational experience
 - Experience in survey statistics
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Data Management Team, Continued

Data entry staff The data entry staff are all those who have been recruited to enter, check and validate the data gathered by the survey team.

The core roles of data entry staff are listed in the table below. Specific tasks are identified in Part 4 Section 2.

Role	Description
1	Logging receipt of completed instruments.
2	Filing and organising paper copies of instruments.
3	Entering survey data.
4	Identifying errors and resolving problems with supervisor.

Skills and attributes

Data entry staff should have the following skills and attributes:

- Accurate keyboard (typing) skills
 - Computing experience or willingness to learn
 - Methodological and tidy work habits
 - Clear handwriting
 - Ability to follow instructions consistently but raise concerns when appropriate
 - Interact efficiently with others to achieve accurate results
-

Statistical Adviser

Introduction The statistical adviser plays a key role in the sampling and data management process. The statistical adviser may be part of the coordinating committee or the analysis team. If a statistical adviser within a site cannot be identified, the WHO Geneva STEPS team or the WHO Regional Office focal point will be able to advise and assist with this role.

Objectives The statistical adviser provides an integral role in the sampling and weighting of the survey data. The objective of the adviser is to ensure that a proper sample is selected and that the sample can be weighted to make the results nationally representative.

Expertise of statistical adviser The statistical adviser should have:

- An advanced degree in statistics
- A special interest in survey statistics
- Experience with sampling and weighting data
- An interest in population health statistics
- Ability to discuss concerns and convey advice clearly to the data analysis team

Core roles of statistical adviser The statistical adviser, under the guidance of the coordinating committee will be responsible for:

- Collecting the sample frame
- Drawing the survey sample
- Reviewing available tracking material and adapting to site specific sample
- Applying weights to survey data
- Providing statistical advice during the analysis and reporting process

Note: The tracking material is the Interview tracking form, available in Part 6 Section 2. The statistical adviser or the supervisor will advise the data collection team on the importance of properly tracking the sample and the impact it has on making the data representative of the target population.

Data Analysis Team

Introduction The data analysis team should work closely with the site coordinator, the data management team and the statistical adviser to produce results for inclusion in various STEPS site reports.

Data analyst Data analysts are staff who have been assigned to undertake the descriptive and statistical analysis of data gathered using the STEPS Instrument.

Core roles The core roles of the data analyst are listed in the table below. Specific tasks are identified in Part 4 Section 3.

Role	Description
1	Supervising and/or conducting variable checks on entered data.
2	Importing dataset, creating database, and data guardianship*.
3	Generating derived variables.
4	Undertaking exploratory data analysis.
5	Undertaking descriptive analyses (e.g. means and proportions).
6	Undertaking additional analyses if needed under the guidance of the statistical adviser.
7	Calculating weights for estimation, under guidance of statistical adviser.
8	Producing tables and graphs for reports.
9	Assisting in report preparation.

* It is common that the data analyst becomes the de-facto data guardian of the survey data and files.

Attributes and qualifications It is desirable that the data analyst has some qualifications and experience in data analysis and statistics.

People asked to perform this role should:

- Have at least a science or computing background
 - Be competent working on a computer
 - Be able to understand outputs of means, proportions and confidence intervals
-

WHO Offices

Introduction There are various roles and responsibilities assigned to the WHO offices in Geneva as well as to the WHO offices in the regions and countries. Each entity has a core function which is described below.

WHO Geneva STEPS team The WHO Geneva STEPS team works closely with the WHO Regional Offices and provides global coordination for STEPS implementation across the Regions.

The WHO Geneva STEPS team is also responsible for supporting training and providing technical support to the STEPS surveillance sites.

The core roles of the WHO Geneva STEPS team include:

Role	Description
1	Providing training, tools, blood pressure monitoring devices, software, guidance and advice for all aspects of STEPS planning, implementation, analysis, and dissemination of data.
2	Communicating with the STEPS Regional focal point and with the STEPS site coordinator.
3	Developing a global strategy in chronic diseases risk factors surveillance.

WHO Regional Office WHO Regional Offices are responsible for coordinating the implementation of STEPS in their respective region. The Regional Offices provide ongoing technical support to STEPS sites.

The core roles of the WHO Regional Office include:

Role	Description
1	Selecting a STEPS Regional focal point .
2	Identifying countries that are ready to implement STEPS.
3	Providing overall guidance on planning and coordination of STEPS in their region.
4	Funding and delivering STEPS training workshops to those sites.
5	Coordinating technical support to sites.
6	Coordinating government and agency activities at the regional and international levels.
7	Developing a regional strategy in chronic diseases prevention and control activities by promoting use of STEPS data.

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WHO Offices, Continued

STEPS regional focal Point The STEPS regional focal point is responsible for:

- Developing a strategic plan of action that addresses the immediate needs for chronic disease risk factors surveillance
- Liaising between WHO Geneva STEPS team and STEPS sites
- Suggesting improvements or developments to STEPS materials
- Providing technical support to sites

WHO country representative The WHO country representative is the local facilitator, and is responsible for:

- Facilitating resource mobilisation for chronic disease surveillance
- Serving on the STEPS coordination committee
- Facilitating communications between the STEPS site and the WHO regional office

Note: The WHO country representative does not usually have a technical role.

Additional regional support This consists in providing additional technical and statistical support to build capacity at the regional and country level. The primary link is through the WHO Geneva STEPS team or Regional Office focal point.
