

Adult Risk Factor Surveillance

International Success Stories and Lessons Learned

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Outline

- Background and context
 - Growing epidemic of chronic diseases
 - Responding to the problem
 - Global strategy
 - Political commitment in the Caribbean
- International approaches to Surveillance of Chronic Disease Risk Factors in Adults
 - Population based-surveys
 - WHO/Pan Am STEPS Methodology
 - Face to Face
 - Telephone Surveys
 - PASSI
 - VIGITEL
 - Based on the CDC Behavioural Risk Factor Surveillance System (BRFSS)
- Results from Risk Factor Surveillance
- Lessons learned - What works?
- Using the Information

Background and Context

Growing Epidemic of Chronic Diseases

- *60% of the world's annual deaths are due to non-communicable diseases (NCDs)*
- *25% of deaths from NCDs are premature and could be prevented*
- *Age-standardized death rates in developing countries are more than 50% higher than in high-income countries*
- *Reducing mortality by 2% a year would save 24 million lives mostly among people <70 years*
- *Prevention strategies focusing on reducing known modifiable risk factors is necessary for reducing the human and economic toll of chronic disease*

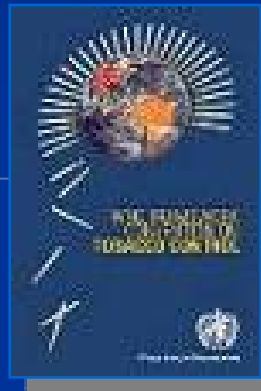
Responding to the Problem

Global Strategy on NCDs

2000

WHO Global Strategy for the Prevention and Control of Noncommunicable Diseases

2003



WHO Framework Convention on Tobacco Control

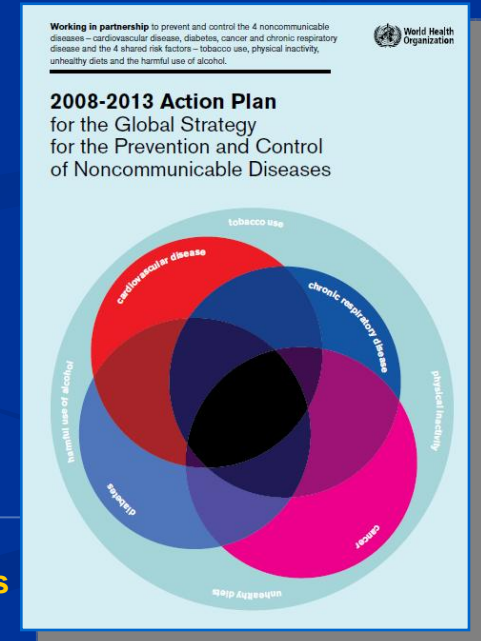
2004

Global Strategy on Diet, Physical Activity and Health



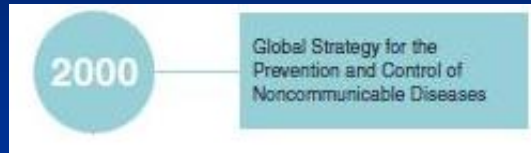
2008

Action Plan on the Global Strategy for the Prevention and Control of Noncommunicable Diseases



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Key Components of the NCD Global Strategy



**Global Strategy for
the Prevention and
Control of
Noncommunicable
Diseases**

**Surveillance to
quantify and track
noncommunicable
diseases and risk
factors**

**Primary prevention
to reduce the level
of exposure to risk
factors**

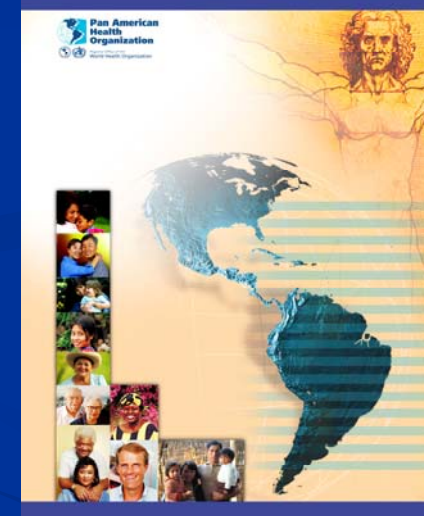
**Health care for
people with
noncommunicable
diseases**

Regional Strategy and Plan of Action on Integrated Approach to the Prevention and Control of Chronic Diseases (2006)

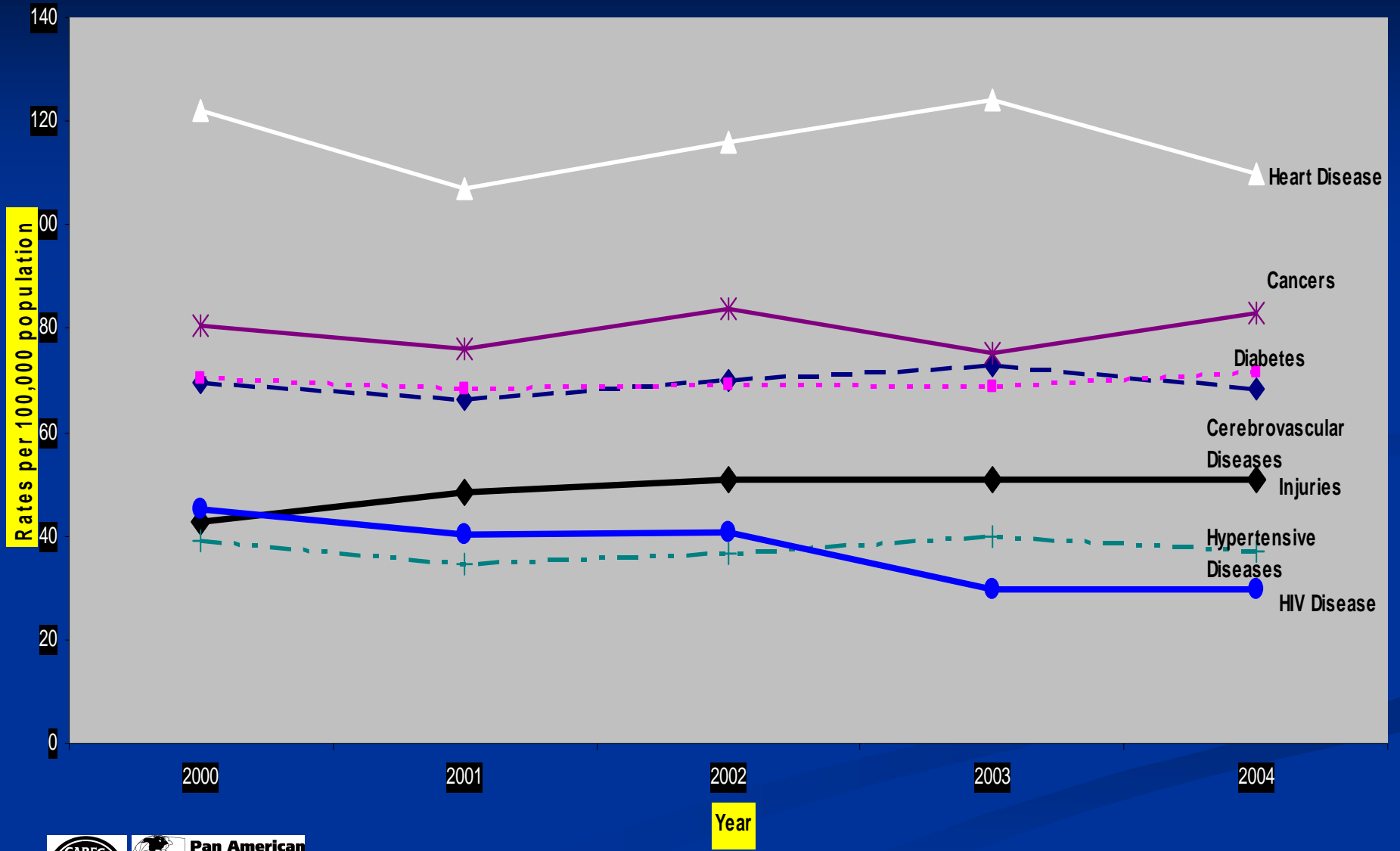
Goal: *To prevent and reduce the burden of chronic diseases and related risk factors in the Americas*

Integrated Approach

- Health Promotion
- Surveillance
- Integrated management of chronic disease and risk factors
- Public Policy and Advocacy



Crude Mortality Rates (per 100,000 population) for Select Diseases: (2000-2004)
CARICOM Member States



Leading Causes of Death in CARICOM Countries by Sex, 2004

MALES

1. Heart Disease
2. Cancers
3. Injuries and violence
4. Stroke
5. Diabetes
6. HIV/AIDS
7. Hypertension
8. Influenza/pneumonia

FEMALES

1. Heart Disease
2. Cancers
3. Diabetes
4. Stroke
5. Hypertension
6. HIV/AIDS
7. Influenza/pneumonia
8. Injuries and violence

Political Commitment for NCDs in the Caribbean

■ Declaration of Port of Spain, September 2007

- *“That we will establish, as a matter of urgency, the programmes necessary for research and surveillance of the risk factors for NCDs with the support of our Universities and the Caribbean Epidemiology Centre/Pan American Health Organization (CAREC/PAHO)”*

International Approaches to Surveillance of Chronic Disease Risk Factors in Adults

Methodologies

- Population-based Surveys
 - The STEPwise Approach to Chronic Disease Risk Factor Surveillance (STEPS)
 - Face-to-face interviews at household level
- Telephone Surveys
 - PASSI (Italy)
 - VIGITEL (Brazil)
 - Designed based on CDC Behavioural Risk Factor Surveillance System (US)

Population-based Surveys

- The STEPwise Approach to Chronic Disease Risk Factor Surveillance (STEPS)

Purpose of STEPS

- "The WHO STEPwise approach to chronic disease risk factor surveillance provides an **entry point** for low and middle income countries to get started on chronic disease surveillance activities. It is also designed to help countries **build and strengthen their capacity** to conduct surveillance."

Objectives of the STEPS Methodology

- Empower countries 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 country needs.
- Build country capacity in all aspects of national survey implementation; in particular, develop skills in sample design, data collection and data analysis.

STEPS Methodology

- Targets a nationally representative sample of adults aged 25 – 64.
- STEP 1 (questionnaire) and STEP 2 (physical measures) are conducted in the household by trained interviewers.
- STEP 3 (biochemical measures) can be done using capillary or venous blood
- Pocket PCs (PDAs*) are used for data collection: "eSTEPS"
- Repeat survey recommended every 3 - 5 years.

Risk Factors for Chronic Disease

		Causative risk factors			
		Tobacco use	Unhealthy diets	Physical inactivity	Harmful use of alcohol
Non-communicable diseases	Heart disease and stroke	✓	✓	✓	✓
	Diabetes	✓	✓	✓	✓
	Cancer	✓	✓	✓	✓
	Chronic lung disease	✓			



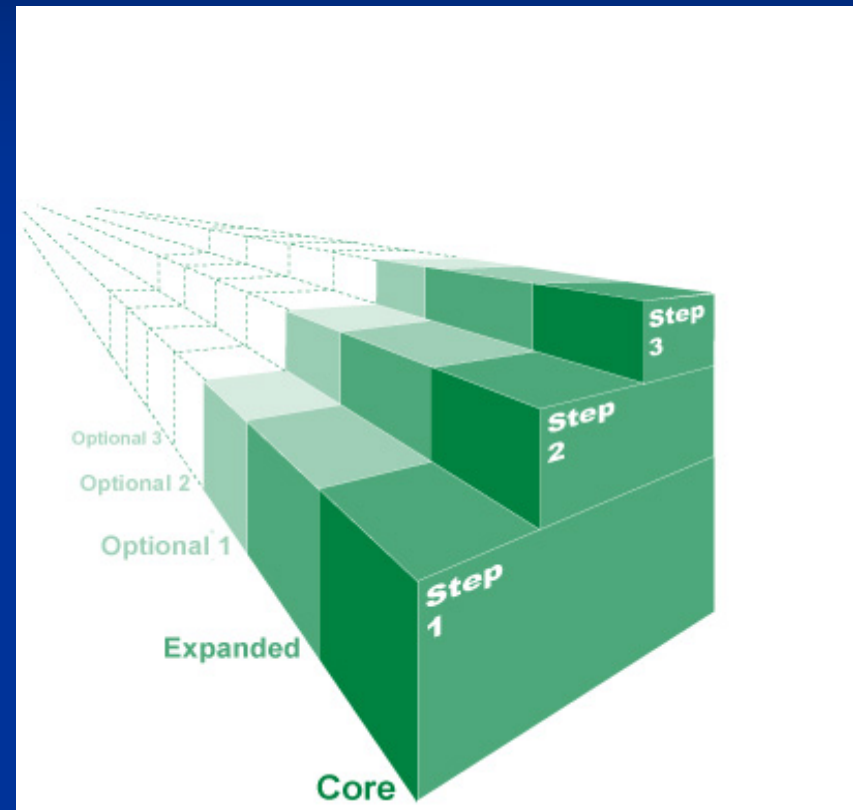
Questionnaire Overview

Different levels of risk factor assessment:

- STEP 1 – questionnaire
- STEP 2 – physical measurements
- STEP 3 – biochemical measurements (blood samples)

Three modules

- Core
- Expanded
- Optional



Questionnaire Overview contd...

■ 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

■ Optional Modules on Injury and Violence, Oral Health, Sexual Health

Pan American Version of the Questionnaire used in the Americas Region



eSTEPS Features/Benefits

- Improves quality of data collection with ...
 - automated random selection of participant (Kish Method)
 - pre-defined skips
 - automatic range checks
 - immediate error checking
- Fewer materials for data collectors to carry
- No data entry needed
- Multiple languages supported
 - English, French, Spanish, Arabic, Khmer, Georgian, Russian ...
- PDAs can be charged where power is unreliable by AA battery (cheap) or solar-power (expensive).
- SD (external memory) cards provide data security in the event of PDA malfunction.

Training: Survey Implementation

3 Days

- Target Audience: Survey Planning and Coordinating Committee
 - Scope of survey
 - Survey methodology
 - Questionnaire design
 - Sample design
 - Data collection
 - Logistics
 - Identification of resources required
- Begin Draft Survey Proposal



Training: Data Collection

5 Days

- Target Audience: Interviewers, Supervisors and Survey Coordinating Committee
 - STEPS methodology
 - PDA Basics
 - Locating and approaching households
 - Kish Method
 - Informed consent
 - Interviewing skills
- Taking physical measurements
- Taking biochemical measurements
- Conduct of Pilot Test



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Training: Data Analysis & Reporting

5 Days

- Data merging and cleaning
- Weighting of survey data
- Mapping data to generic STEPS Instrument (as needed)
- Epi Info Analysis training
 - Half-day hands-on introduction
 - Running provided analysis code for descriptive analysis
- Creation of STEPS Fact Sheet and Data Book (standardized reporting documents)
- Begin draft of report and discuss dissemination plan



Training: Data to Action

- Using STEPS survey results:
 - Propose development of new programmes / services or elaboration of existing ones to address key findings of survey
- DPAS (Global Strategy on Diet and Physical Activity for Health) documents provide guidelines
- Inter-Ministry collaboration

Support Materials

■ STEPS Manual

- survey implementation plan template
- suggested timelines
- training guides for data collection and data entry staff
- data collection forms (e.g. participant information sheets, interview tracking forms)

■ STEPS Instrument

■ Sampling Tools

- "STEPS Sampling Workbook"
- "STEPS sample size calculator"

Support Materials: eSTEPS Software

Create (edit)
Questionnaire on PC and
transfer to PDA

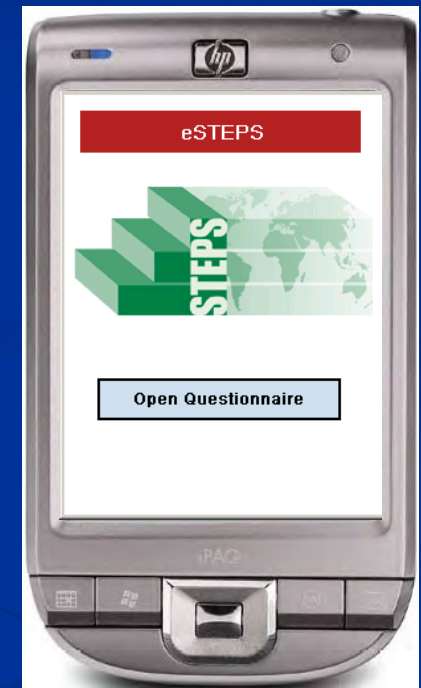
Data entry

Import data
from PDA to PC

eSTEPS
Questionnaire
Designer

eSTEPS Pocket PC
(PDA)

eSTEPS Manager



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Support Materials: eSTEPS Guides

■ Installation Guide

- Reviews PDA requirements
- Provides step-by-step installation instructions for:
 - all prerequisite software
 - the 3 eSTEPS components

■ User Manual

- Provides detailed instructions for:
 - how to use each eSTEPS component
 - how to manage the survey data and create the final dataset

- PAHO/WHO/CAREC provides assistance with the creation of the questionnaire for the PDA and provides ongoing support via phone and e-mail during data collection.



Support Materials, cont.

- Data Analysis & Reporting Tools
 - Epi Info and SPSS analysis programs
 - standardized fact sheet and data book
 - survey report template

Support Materials: Analysis Help

From generic
STEPS
Questionnaire

CORE: Tobacco Use		
Now I am going to ask you some questions about various health behaviours. This includes things like smoking, drinking alcohol, eating fruits and vegetables and physical activity. Let's start with tobacco.		
Question	Response	Code
22 Do you currently smoke any tobacco products , such as cigarettes, cigars or pipes? (USE SHOWCARD)	Yes 1	T1
	No 2 <i>If No, go to T6</i>	
23 Do you currently smoke tobacco products daily ?	Yes 1	T2
	No 2 <i>If No, go to T6</i>	

Fact Sheet
Analysis
Guide

Country (Site) STEPS Survey <year> Fact Sheet Analysis Guide		
Please use this as a guide when you are altering your instrument as it will provide you with a guideline for which questions are needed in order to calculate these basic indicators.		
To calculate the basic indicators that are presented on the Fact Sheet refer to the Data Analysis section of the user manual (Part 4, Section 3)		
Results for adults aged 25-64 years (incl. 95% CI) (adjust if necessary)	Questions required to calculate result (based on coding column)	Epi Info Program Name
Step 1 Tobacco Use		
Percentage who currently smoke tobacco	T1	TsmokestatusWT
Percentage who currently smoke tobacco daily	T1, T2	TsmokestatusWT



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Support Materials: Analysis Help, Cont.

CORE: Tobacco Use				
Now I am going to ask you some questions about various health behaviours. This includes things like smoking, drinking alcohol, eating fruits and vegetables and physical activity. Let's start with tobacco.				
Question		Response		Code
22	Do you currently smoke any tobacco products , such as cigarettes, cigars or pipes? <i>(USE SHOWCARD)</i>	Yes	1	T1
		No	2 <i># No, go to T6</i>	
23	Do you currently smoke tobacco products daily ?	Yes	1	T2
		No	2 <i># No, go to T6</i>	

Smoking Status Description: Smoking status of all respondents.

Instrument questions:

- Do you currently smoke any tobacco products, such as cigarettes, cigars, or pipes?
- Do you currently smoke tobacco products daily?

Smoking status							
Age Group (years)	n	Men					
		Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
25-34							
35-44							
45-54							
55-64							
25-64							

Analysis Information:

- Questions used: T1, T2
- Epi Info program name: Tsmokestatus (unweighted); TsmokestatusWT (weighted)

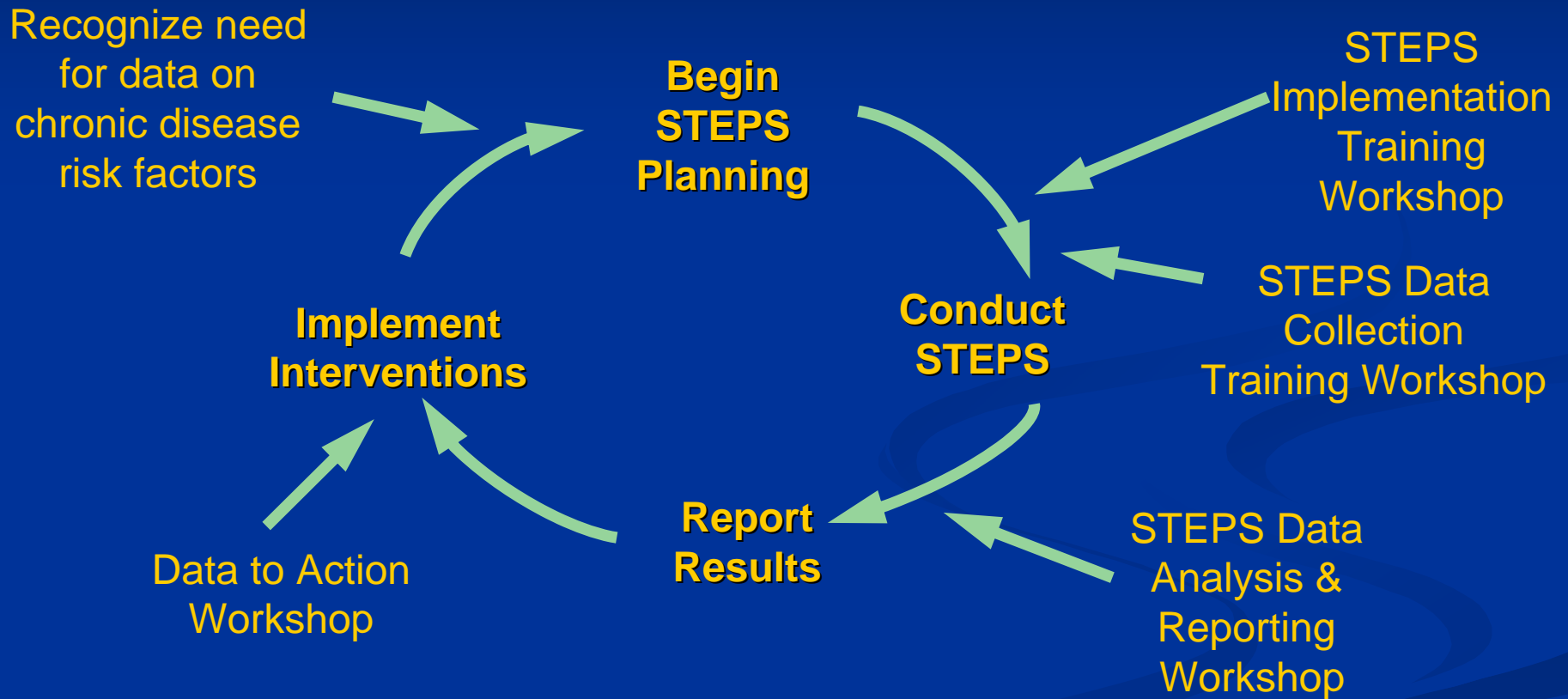
Data Book
Page



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STEPS Methodology

The Surveillance Loop



STEPS Activity Internationally

WHO Regions

	# planning	# in field / data entry or analysis work	# reporting completed	Total # active	# trained but inactive	# with 1 or more repeats
AFRO	10	18	15	43	(3)	7
AMRO	13	8	1	22	(3)	1
EMRO	2	7	9	18	(1)	7
EURO	1	1	0	2	(0)	0
SEARO	0	2	8	10	(0)	9
WPRO	3	11	11	25	(1)	7

Current Situation - Risk Factor Surveillance in Latin America and The Caribbean (2011)

SURVEY TYPE

- PAN AM STEPS SURVEY (NATIONAL): LA: Uruguay, Cuba, Costa Rica C: Aruba, Bahamas, Barbados, British Virgin Islands, Dominica, Grenada, St. Kitts

- PREP FOR PAN AM STEPS SURVEY (NATIONAL) : LA: Paraguay, Bolivia C: Anguilla, Guyana, Nevis, Suriname, Trinidad and Tobago, St. Lucia, St. Vincent and the Grenadines, ,Turks and Caicos islands

- BRFS ALLIGNED TO PAN AM STEPS: LA: Argentina, Brazil, Chile

- NATIONAL BRFS: LA: Colombia, Belize, Panama
 C: Curacao, Jamaica

- SUB-NATIONAL BRFS: LA: Guatemala; Honduras; Nicaragua; El Salvador.



CAREC Member Countries

CAREC provides epidemiological support to 21 Member Countries

- English and Dutch speaking Caribbean

- Bermuda to Suriname
- Varying population sizes
 - Montserrat, 4,681 – Jamaica, 2,600,723
- Countries have well developed primary health care systems, secondary care services and some tertiary care services mainly in larger countries

Population Grouping	Country	
<100,000	Anguilla	
	Antigua and Barbuda	
	Bermuda	
	British Virgin Islands	
	Cayman Islands	
	Dominica	
	Montserrat	
	St. Kitts and Nevis	
	Turks and Caicos Islands	
	>=100,000 to <=400,000	Aruba
Bahamas		
Barbados		
Belize		
Grenada		
Netherlands Antilles		
St. Lucia		
St. Vincent and the Grenadines		
>400,000		Guyana
		Jamaica
	Suriname	
	Trinidad and Tobago	





National Risk Factor Surveillance Telephone Interviewing

- Italian Behavioural Risk Factor Surveillance System
 - **PASSI** (Progress by Local Health Units Towards a Healthier Italy)
- Developed based on the Behavioural Risk Factor Surveillance System (BRFSS) in the US (CDC)
- System for the ongoing surveillance of risk factors and preventive measures for NCDs
 - Feasibility study conducted (2005-2006)
 - Protocol developed
 - Regional Coordinators identified and trained on all aspects of system
 - Training provided by Regional Coordinators to PASSI supervisors and interviewers at Local Health Unit (LHU) level



PASSI (2007)

System Description

- Random sample in each LHU extracted each month from enrollment lists of residents 18-69 years in the catchment area
- Letter sent to homes of selected individuals
 - Explains purpose
 - Informs that they will be contacted
 - GPs of selected persons also informed
- Questionnaires administered via telephone interviews by trained personnel
 - All data self reported
- Ongoing surveillance process
 - Interviews conducted every month
 - Flexible system allows items in questionnaire to be modified over time



National Risk Factor Surveillance Telephone Interviewing

- Brazilian Behavioural Risk Factor Surveillance System :
VIGITEL - BRAZIL
 - Developed based on the BRFSS in the US (CDC)
 - 2003 – Pilot by State University – São Paulo, Brazil
 - São Paulo + 4 state capitals
 - 2006 – Ministry of Health (MOH) of Brazil – all the state capitals and Federal District (27 cities)
 - Partnership signed with another MOH secretariat to carry out the telephone interviews

System Description

VIGITEL

- Purpose
 - Continuous monitoring of the frequency and distribution of risk and protective factors for NCD in all Brazilian state capitals and the Federal District
- Population under surveillance
 - Adults (≥ 18 years old) living in households with landline telephones in the Brazilian state capitals
- Telephone interviews survey
 - Random samples
 - 2,000 interviews/state capital = 54,000/year
 - Data collection: private telemarketing company
- Data analysis and reporting: the Health Surveillance Secretariat (SVS/MS) and the University of São Paulo

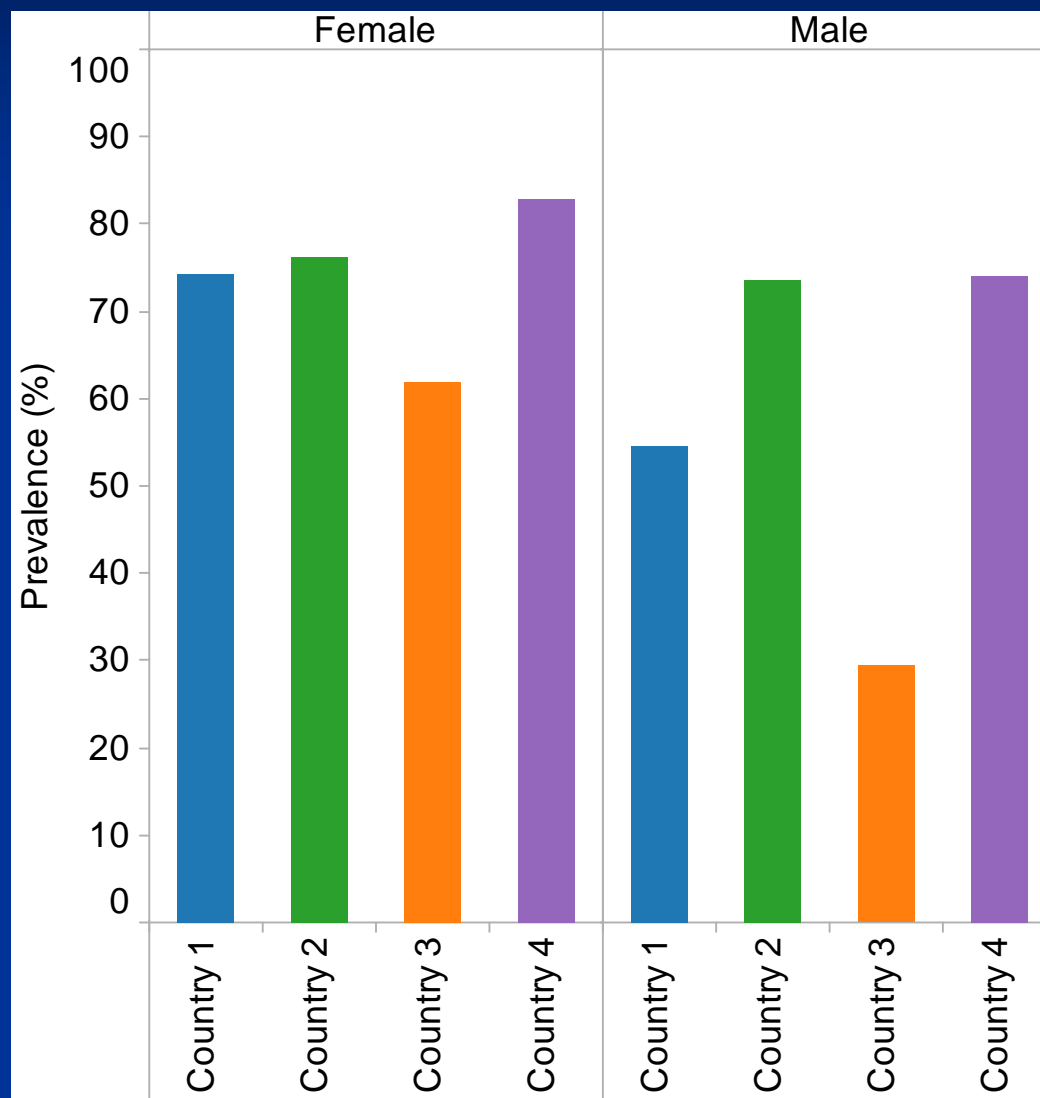
Risk Factor Surveillance

Some results from LAC



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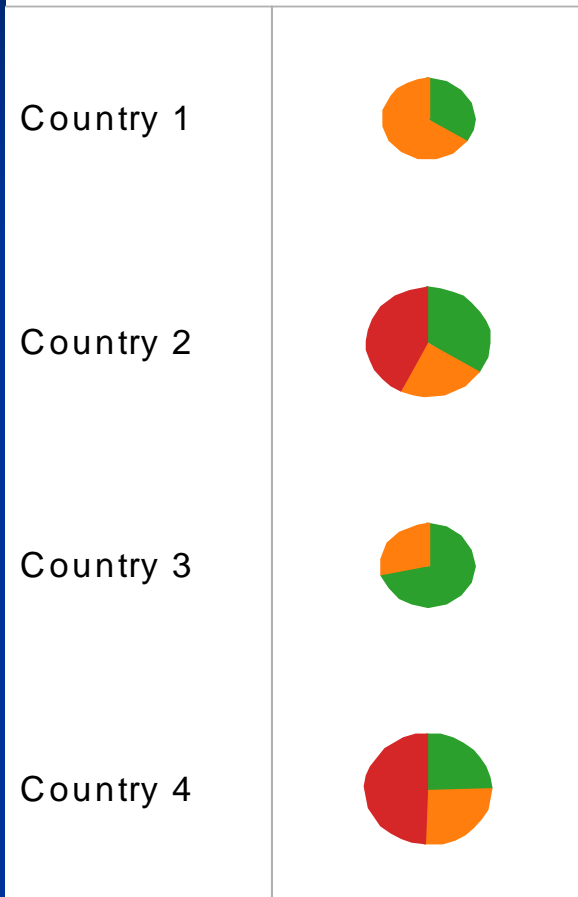
Prevalence of Overweight Persons (BMI ≥ 25 kg/m²) by Gender English-speaking Caribbean Countries



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Comparison of Physical Activity and Overweight English-speaking Caribbean Countries

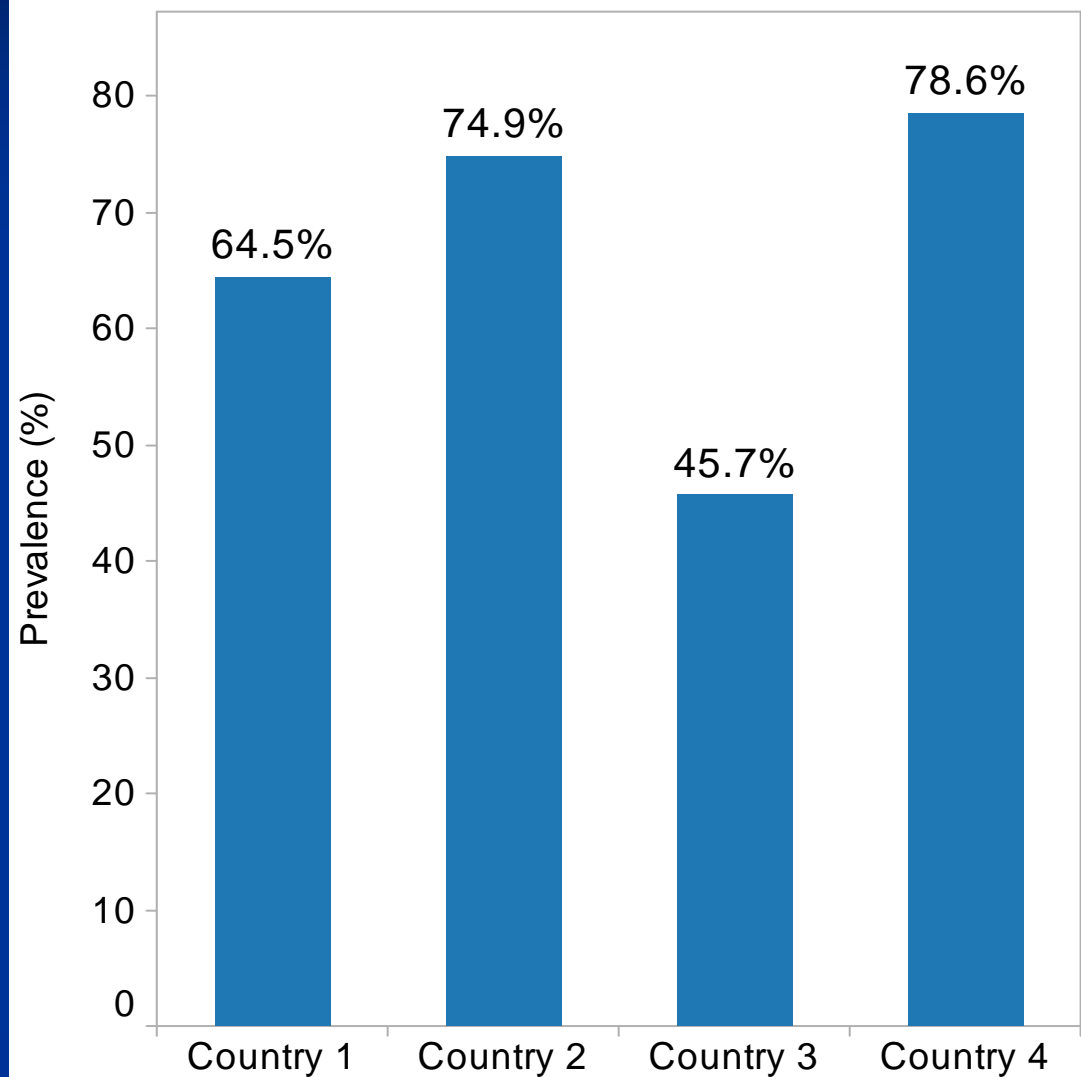
Physical Activity



Physical activity

- High levels of physical activity
- Low levels of physical activity
- No vigorous activity

Prevalence of Overweight Persons



Comparison of the Prevalence of Current Drinkers and of Binge Drinking

Prevalence of Current Drinkers

Country 1 Country 2 Country 3 Country 4



Gender

- Female
- Male

Prevalence of Binge Drinking

Country 1 Country 2 Country 3 Country 4



Gender

- Females (having = 4 drinks on any day in last week)
- Males (having = 5 drinks on any day in last week)

RF Studies - Argentina

ENCUESTA NACIONAL DE FACTORES DE RIESGO



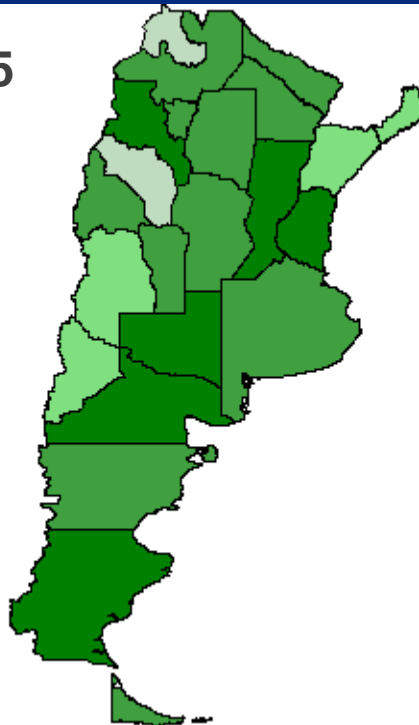
Indicators	2005	2009
BP Control in the last 2 years	78,7%	81,4%
Prevalence of elevated blood pressure	34,5%	34,8%
Cholesterol Control (once in a lifetime)	72,9%	76,6%
Elevated Cholesterol)	27,9%	29,1%
Glucose Control	69,3%	75,7%
Diabetes (overall population)	8,4%	9,6%
PAP in last 2 years (women)	51,6%	60,5%
Mammography (over 40 years of age)	42,5%	54,2%
Anxiety -depression (moderate or severe)	21,8%	19,2%



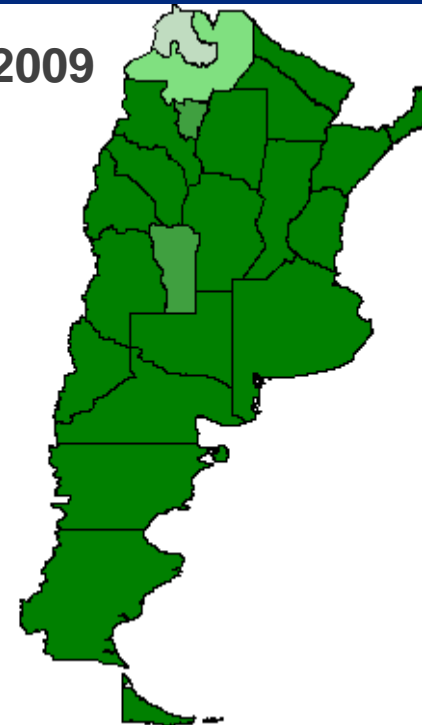
Comparing results 2005-2009

Physical Inactivity

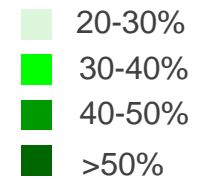
2005



2009

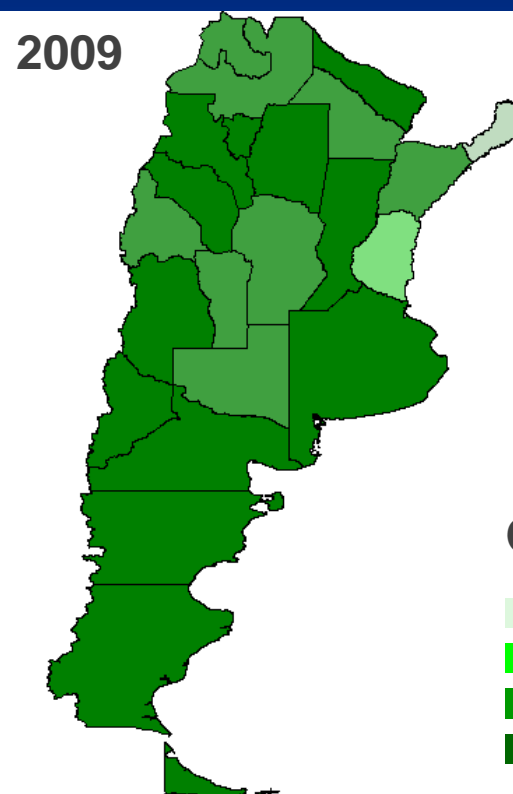
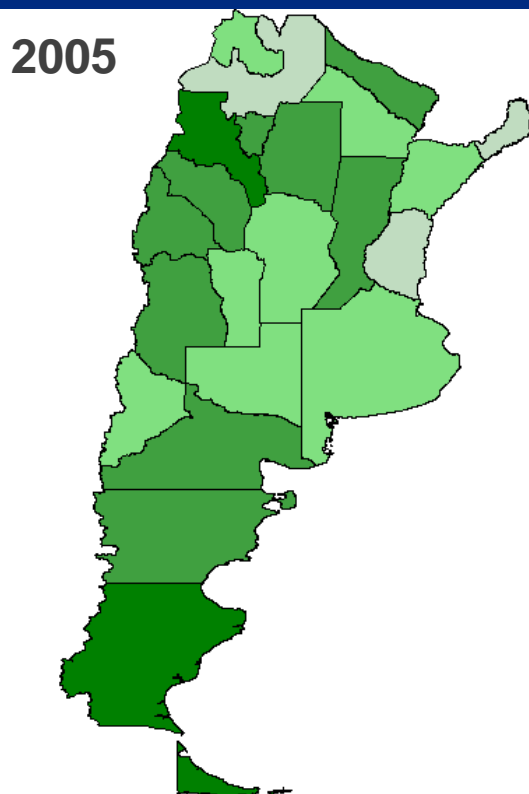


Low PA (%)



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Comparing results 2005-2009 Overweight & Obesity (BMI >25)

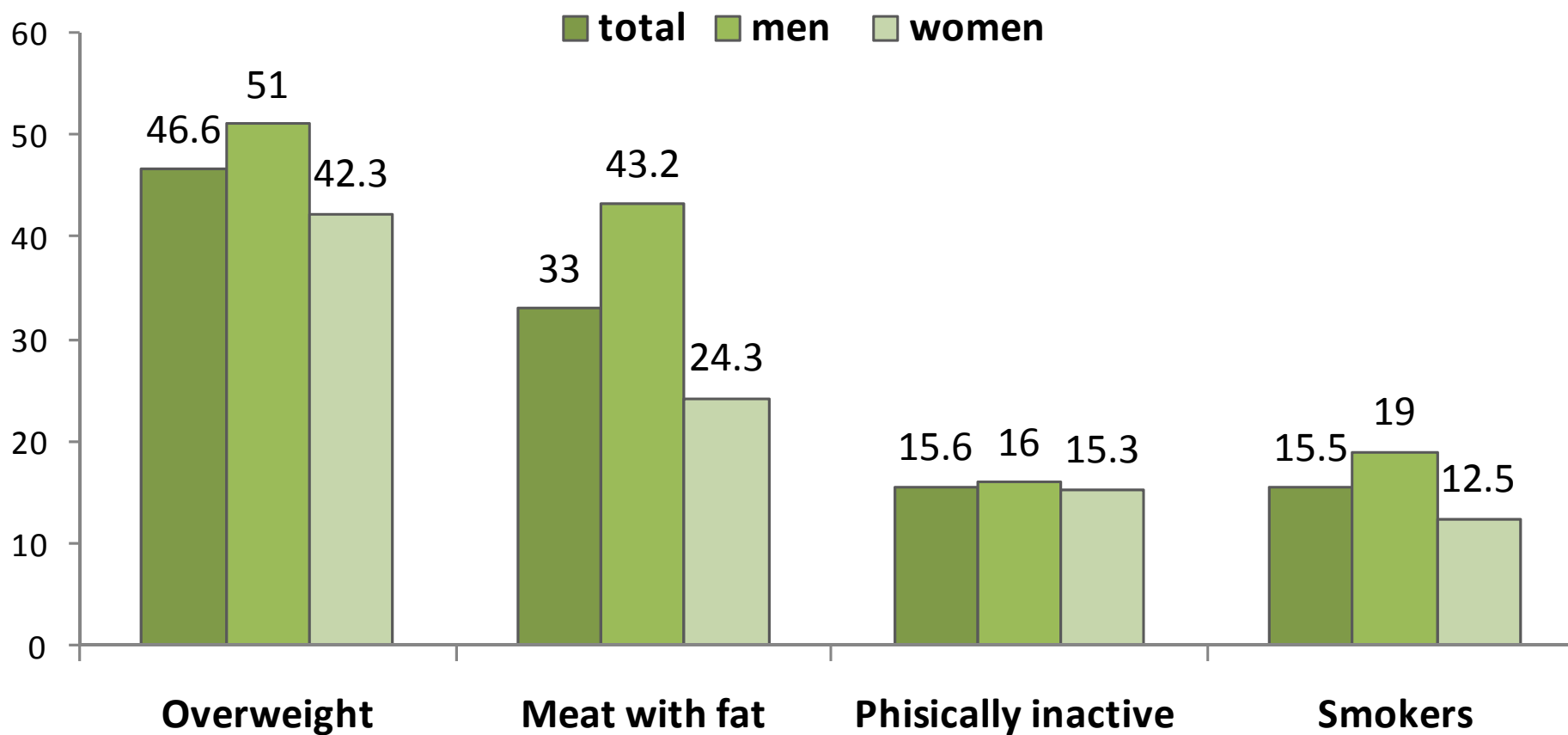


Obesidad (%)

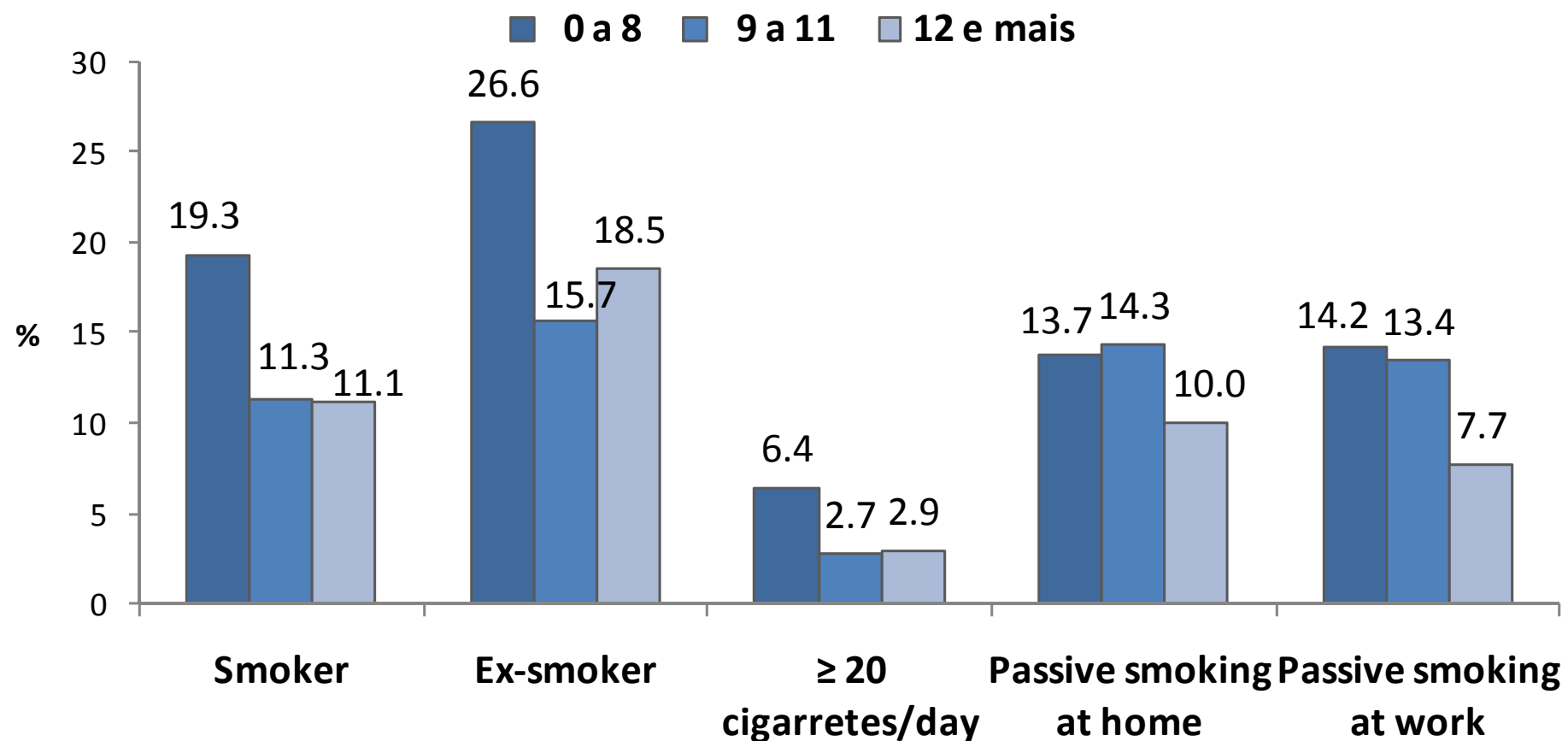
- 10-14%
- 14-16%
- 16-18%
- >18%



Risk factor distribution by sex, VIGITEL Brazil (2009)



Smoking indicators by schooling, VIGITEL Brazil (2009)



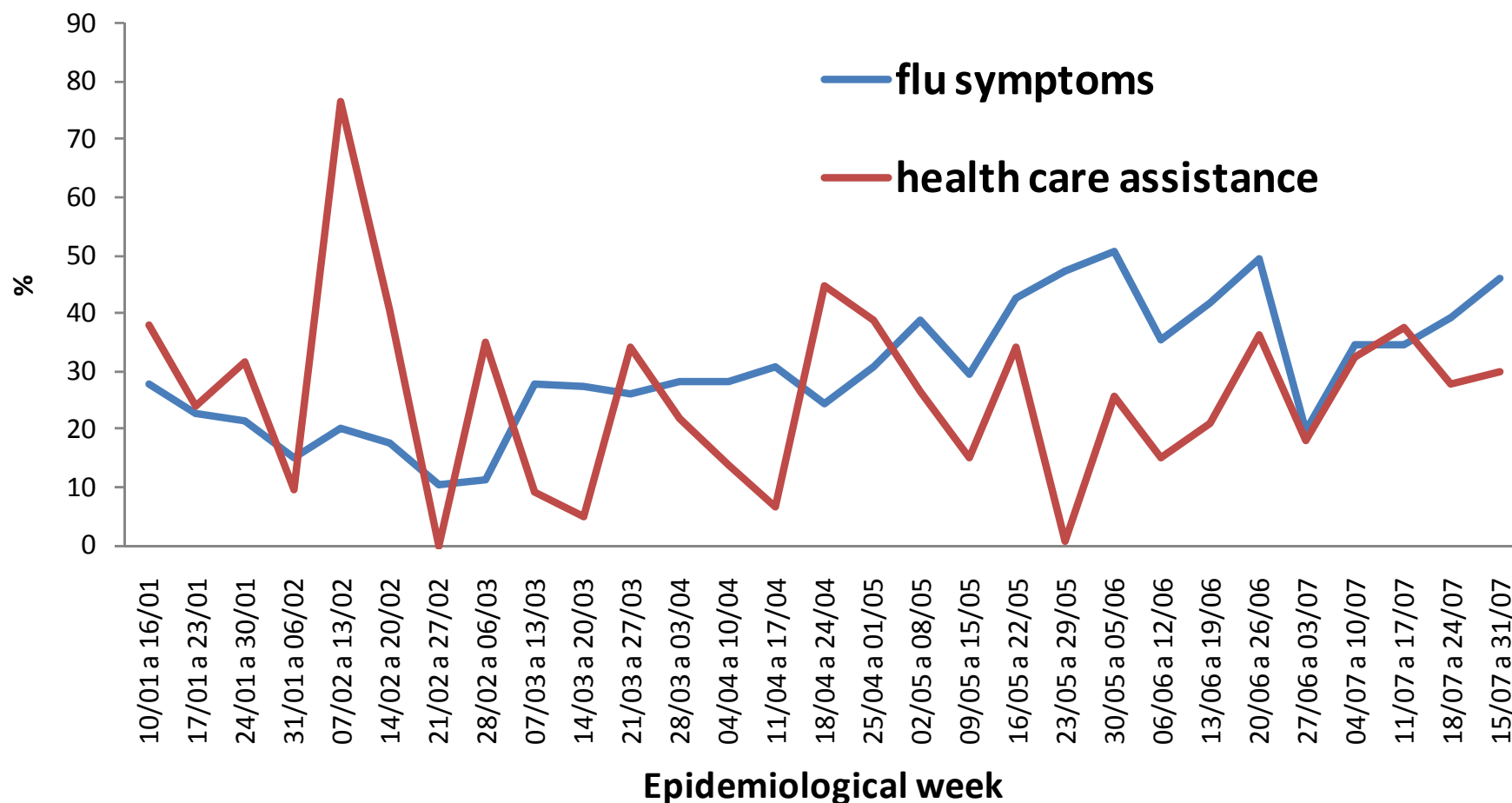
Obesity trends in Brazil (BMI ≥ 30 kg/m²)

2003
 Argentina: 26,1%
 Chile: 26,8%;

2007
 Ecuador : 26.3%



Report of flu symptoms and demands for services in adults from Southeast Brazil, Jan-Jul 2010



Lessons Learned

What Works?

- High level political commitment
- Establishment of partnerships with local organizations and institutions
- Involving all parties at planning phase
- Use of a standardized methodology
 - Facilitates comparisons
- Some flexibility
- Support and training for survey planning, implementation data entry, analysis and report writing
- Assured funding
 - Ensures sustainability
- Enhanced accountability
 - Annual Reporting
 - NCD Minimum Data Set
 - Declaration of Port of Spain on NCDs



Using the Information

- Identification of at risk population
- Forecasting of needs for health services
- Policy Formulation
- Programme development and implementation
- Programme evaluation
 - Identifying whether interventions are working
- Monitoring trends
- Making comparisons (gender,countries, counties)
- Research
 - Assessing population knowledge about specific health issues etc.



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Thank You for Listening

Questions??

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