MINIMUM, OPTIMUM AND OPTIONAL DATA SET FOR Chronic Non-Communicable Diseases, Violence and Injuries

PAN AMERICAN HEALTH ORGANIZATION
Pan American Sanitary Bureau, Regional Office of the
WORLD HEALTH ORGANIZATION

Technical specifications

This draft of ***Technical specifications*** is prepared by the Pan American Health Organization (PAHO) Inter-programmatic Chronic Non communicable Disease surveillance working group (1) in the period of March 2007 till June 2008. The work has been based on World Health Organization (WHO) chronic disease and risk factor (RF) surveillance principles and PAHO's Core Health Data initiative. The starting point was the list of chronic non communicable disease indicators prepared by the Caribbean Epidemiology Center (CAREC) in 2004 but that had not been tested or applied. The working group has consulted the following materials during its work: List of CDC indicators for chronic disease surveillance (2)**,** Canadian Primary Health Care Indicators (3), Brazil's (4) and Mexico's (5) national lists of indicators.

List includes suggestions received from epidemiologists from Montserrat, Dominica, and Barbados, as well as from Chile, Argentina, Paraguay, Uruguay and Brazil within PAHO's non communicable disease unit (NC) effort for sub regional harmonization in the English-speaking Caribbean and MERCOSUR countries, during spring of 2008.

Summary

With a global momentum to scale up the response to the leading national and Regional public health burden in morbidity, premature mortality and disability generated by chronic non communicable diseases (CNCD) and their risk factors (RF), it became increasingly important to countries and to the Region to be able to report accurate, timely and comparable data to different national and international entities in order to secure development or expansion of health programs, strengthen the health care system, and use the information for strengthening the whole government approach for sectoral decisions and partnership building.

The existing data set has been developed through collaborative work of experts from PAHO Washington DC (WDC) programs and PAHO country offices, WHO-HQ, and CAREC. The proposed data set represents a selection of standard data that are most likely to be a part of data collection in national and international reporting and are included in the PAHO/WHO mandates related to CNCDs and RFs. It is a work in progress, and modifications will be made periodically to assure that user needs are met.

The purpose of this work was to, for the first time, offer to public health officials the opportunity to uniformly define, collect and report chronic disease data on an annual basis as part of the chronic disease surveillance process. Selection of data by experts was led by international Resolutions dedicated to CNCDs and RFs, importance to public health, and availability of national level data.

The list of data is proposing a step-wise approach through core, optimum and optional data sets. Among 44 core, 19 optimum and 12 optional data, 10 are related to cardiovascular diseases, 7 to cancer, 9 to diabetes, 2 to asthma and COPD, 3 to violence and injuries, 7 to tobacco, 6 to alcohol, 9 to fruit and vegetable consumption, 3 to physical inactivity, 3 to overweight and obesity and 6 on preventive service provision. The remaining data cover overarching sociodemographic data and conditions such as poverty, health insurance, production, import and export of selected goods.

The offered data set combines multiple data sources in one functional annual reporting system as a foundation for chronic non communicable disease surveillance. Besides national data sources, this data set uses several international studies as a source, as their methodology have been accepted and used by countries as part of national efforts for international comparability. The data set is a contribution to remedy the fragmentation of traditional country surveillance systems where each program follows its own data and indicators and does not combine data sources nor look at context and other sector information.

The proposed data set should facilitate further analysis on a national, sub regional and Regional level and generation of more complex indicators for chronic non communicable diseases.

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SECTION I: MORTALITY FROM NCDs

Ischemic Heart Disease

Name	Age-standardized mortality rate per 100,000 population for deaths <70 years due to Ischemic Heart Disease (ICD10 I20-I25)
Definition	Deaths <70 years due to Ischemic health disease, expressed per 100,000 population standardized to a standard population. This is necessary to control for differing age distributions from country to country. The WHO World Standard Population, which reflects the average age structure of the world's population expected over the next generation (from 2000 to 2025), will be used.
Case definition	Age-standardized mortality rates per 100,000 for deaths <70 years due to Ischemic Heart Disease, using the WHO World Standard Population.
Calculation method	The sum of the weighted age-specific mortality rates per 100,000 populations (by 5 year age groupings) for deaths <70 years due to Ischemic Heart Disease using the WHO world Standard Population.
Parameters	• Measurement Unit: per 100,000 • Type: rate • Categories: female, male; age <70 years
Data sources	obtained from corresponding mortality registries and population distributions

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Ischemic Heart Disease, continued

Significance and rational

Ischemic heart disease (IHD) is one of the largest components of cause specific mortality in the region and predictions say that in the next 2 decades there will be a near tripling of deaths of Ischemic heart diseases in the region of Americas. The crude mortality rate provides useful information about tendencies over time and it is valuable information if observed in connection with public health interventions in the observed population allowing comparison of tendencies.

Characteristics of indicator and data sources

Age-standardized mortality rates can be used to compare the mortality rates of countries without being affected by the difference in age distributions from country to country. Without using this standardization, it would be unclear if differing mortality rates were due to differences in age distribution or as a result of other factors.

The use of a **standard population** is needed and for this purpose, the WHO World Standard Population will be used.

Another indicator that can be computed and provides information on premature mortality for a specific cause is Potential Years of Life Lost PYLL. Regarding data sources, there are countries where death certificates are not obligatory so sub registration of deaths occurs; or certificates are not filled in appropriately by health professionals. This brings the possibility of different types of errors.

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Ischemic Heart Disease, continued

Name	Potential Years of Life Lost (**PYLL**) due to ischemic heart disease (ICD10 I20-I25)
Definition	**PYLL** is a measure of premature mortality. The PYLL due to ischemic heart diseases measures the total number of years persons would have lived additionally, had they not died prematurely from ischemic heart disease. Premature death refers to deaths occurring before the country-specific estimated life expectancy. Rate is expressed per 100,000.
Case definition	premature death due to ischemic heart diseases
Calculation method	{[(Estimated life expectancy – mean age at death for premature deaths) * number of premature deaths] / (population under estimated life expectancy)}*100,000
Parameters	• Numerator: (Estimated life expectancy – mean age at death for premature deaths) * number of premature deaths • Denominator: Population under life expectancy • Measurement unit: per 100,000 • Type: rate • Categories: female, male; age under country-specific estimated life expectancy • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries.

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Ischemic Heart Disease, continued

Significance and rational	PYLL due to ischemic heart disease can be used by public health community and researchers to evaluate the impact of health promotion programs, life style changes and modification of cardiovascular risk factors on increasing the life expectancy of the population
Limitations of indicator and data sources	One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL. All future years of life are weighed equally. Another important limitation is that PYLL does not account for the amount of disability or suffering involved with certain health conditions. That is measured using Disability Adjusted Life Years (DALYS).

Cerebrovascular Disease

Name	Age-standardized mortality rate per 100,000 population for deaths <70 years due to cerebrovascular disease (stroke) (ICD10 I60 –I69)
Definition	Deaths <70 years due to ischemic health disease expressed per 100,000 population standardized to a standard population. This is necessary to control for differing age distributions from country to country. The WHO World Standard Population, which reflects the average age structure of the world's population expected over the next generation (from 2000 to 2025), will be used.
Case definition	Age-standardized mortality rates per 100,000 for deaths <70 years due to cerebrovascular disease (stroke), using the WHO World Standard Population.
Calculation method	The sum of the weighted age-specific mortality rates per 100,000 population (by 5 year age groupings) for deaths <70 years due to cerebrovascular disease (stroke) using the WHO World Standard Population.
Parameters	• Measurement unit: per 100,000 • Type: rate • Categories: female, male; age <70 years • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and population distributions.
Significance and rational	Cerebrovascular disease (stroke) is one of the largest components of cause specific mortality in the region and predictions say that in the next 2 decades there will be a near tripling of deaths of cerebrovascular disease (stroke) in the region of Americas.

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Cerebrovascular Disease, continued

Characteristics of indicator and data sources

Age-standardized mortality rates can be used to compare the mortality rates of countries without being affected by the difference in age distributions from country to country. Without using this standardization, it would be unclear if differing mortality rates were due to differences in age distribution or as a result of other factors.

The use of a **standard population** is needed and for this purpose, the WHO World Standard Population will be used.

Another indicator that can be computed and provides information on premature mortality for a specific cause is Potential Years of Life Lost PYLL. Regarding data sources, there are countries where death certificates are not obligatory so sub registration of deaths occurs; or certificates are not filled in by health professionals. This brings the possibility of different types of errors.

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Cerebrovascular Disease, continued

Name	Potential Years of Life Lost (**PYLL**) Rate due to cerebrovascular disease (stroke) (ICD10 I60-I69)
Definition	**PYLL** is a measure of premature mortality. The PYLL due to cerebrovascular disease (stroke) measures the total number of years persons would have lived additionally, had they not died prematurely from cerebrovascular disease (stroke). Premature death refers to deaths occurring before the country-specific estimated life expectancy. Rate is expressed per 100,000
Case definition	premature death due to cerebrovascular disease (stroke)
Calculation method	{[(Estimated life expectancy – mean age at death for premature deaths) * number of premature deaths] / (population under estimated life expectancy)}*100,000
Parameters	• Numerator: (Estimated life expectancy – Mean age at death for premature deaths) *Number of premature deaths • Denominator: Population under estimated life expectancy • Measurement unit: per 100,000 • Type: rate • Categories**:** female, male; age under country-specific estimated life expectancy • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries

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Cerebrovascular Disease, continued

Significance and rational	PYLL due to cerebrovascular diseases can be used by public health community and researchers to evaluate the impact of health promotion programs, life style changes and modification of cardiovascular risk factors on increasing the life expectancy of the population.
Limitations of indicator and data sources	One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL. All future years of life are weighed equally. Another important limitation is that PYLL does not account for the amount of disability or suffering involved with certain health conditions. That is measured using Disability Adjusted Life Years (DALYS).

Malignant Neoplasm

Name	Age-standardized mortality rate per 100,000 population for deaths <70 years due to malignant neoplasm (total) (ICD10 C00-C97)
Definition	Deaths <70 years due to malignant neoplasm (total) expressed per 100,000 population standardized to a standard population. This is necessary to control for differing age distributions from country to country. The WHO World Standard Population, which reflects the average age structure of the world's population expected over the next generation (from 2000 to 2025), will be used.
Case definition	Age-standardized mortality rates per 100,000 for deaths <70 years due to malignant neoplasm (total), using the WHO World Standard Population.
Calculation method	The sum of the weighted age-specific mortality rates per 100,000 population (by 5 year age groupings) for deaths <70 years due to malignant neoplasm (total) using the WHO World Standard Population.
Parameters	• Measurement unit: per 100,000 • Type: rate • Categories**:** female, male; age <70 years • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and population distributions.

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Malignant Neoplasm, continued

Significance and rational

It is estimated that approximately one in two males and one in three females will have a diagnosis of cancer during their lifetime and currently there are between 25.5-240.4/100,000 mortalities due to neoplasm. In Latin America and the Caribbean. Significant morbidity and mortality from cancer of the lung, colon and rectum, female breast, cervix, oral cavity and pharynx, and multiple other cancers can be reduced through known interventions.

Characteristics of indicator and data sources

Cancer is not a single disease, but rather numerous diseases with different causes, risks, and potential interventions and interpretation of increases or decreases in cancer mortality can only be made by examination of the specific crude mortality rates of every type of cancer.

Age-standardized mortality rates can be used to compare the mortality rates of countries without being affected by the difference in age distributions from country to country. Without using this standardization, it would be unclear if differing mortality rates were due to differences in age distribution or as a result of other factors.

The use of a **standard population** is needed and for this purpose, the WHO World Standard Population will be used. Another indicator that can be computed and provides information on premature mortality for a specific cause is Potential Years of Life Lost PYLL.

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Malignant Neoplasm, continued

Name	Potential Years of Life Lost (**PYLL**) Rate due to malignant neoplasm (total) (ICD10- C00-C97)
Definition	**PYLL** is a measure of premature mortality. The PYLL due to malignant neoplasm (total) (ICD10 C00-C97) measures the total number of years persons would have lived additionally, had they not died prematurely from malignant neoplasm. Premature death refers to deaths occurring before the country-specific estimated life expectancy. Rate is expressed per 100,000
Case definition	premature death due to malignant neoplasm (total)
Calculation method	{[(Estimated life expectancy – mean age at death for premature deaths) * number of premature deaths] / (population under estimated life expectancy)}*100,000
Parameters	• Numerator: (Estimated life expectancy – Mean age at death for premature deaths) *Number of premature deaths • Denominator: Population under estimated life expectancy • Measurement unit: per 100,000 • Type: rate • Categories**:** female, male; age under country-specific estimated life expectancy • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries
Significance and rational	PYLL due to malignant diseases can be used by public health community and researchers to evaluate the impact of health promotion programs, life style changes and modification of risk factors on increasing the life expectancy of the population

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Limitations of indicator and data sources

One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL. All future years of life are weighed equally.

Another important limitation is that PYLL does not account for the amount of disability or suffering involved with certain health conditions. That is measured using Disability Adjusted Life Years (DALYS).

Cervical Cancer

Name	Age-standardized mortality rate per 100,000 population for deaths <70 years due to cervical cancer (ICD 10 C53)
Definition	Deaths <70 years due to cervical cancer expressed per 100,000 population standardized to a standard population. This is necessary to control for differing age distributions from country to country. The WHO World Standard Population, which reflects the average age structure of the world's population expected over the next generation (from 2000 to 2025), will be used.
Case definition	Age-standardized mortality rates per 100,000 for deaths <70 years due to cervical cancer, using the WHO World Standard Population.
Calculation method	The sum of the weighted age-specific mortality rates per 100,000 population (by 5 year age groupings) for deaths <70 years due to cervical cancer using the WHO World Standard Population.
Parameters	• Measurement unit: per 100,000 • Type: rate • Categories**:** female; age <70 years • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and population distributions.

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Cervical Cancer, continued

Significance and rational	Cervical cancer is one of the cancers with higher incidence, prevalence and mortality in the region of the Americas. It is estimated that in Latin America and the Caribbean the incidence rate of cervical cancer is between 28.6-32.6/100,000 and the mortality rate is between 12.9-16/100,000 and approximately 40-60% of cervical cancer deaths could be prevented by increasing screening of targeted population. Other factors that increase the risk of cervical cancer are: Cigarette smoking; infection with the high risk human papilloma virus; and certain sexual practices, including having multiple partners, early age at first intercourse and history of sexually transmitted disease so education and preventive health programs to change behavior and modify these risk factors can also be developed.
Limitations of indicator and data sources	Besides previously mentioned limitations due to reporting and vital statistics and crude and standardized mortality rate, specifically regarding cervical cancer the prevalence of Hysterectomy should be taken into account when declining death rates for Cervical Cancer are reported. A limitation of the use of data from cancer registries is that they can have different coverage (hospital, sub national population ones and national population ones) and that can be reflected in the number of cases reported, so a under reporting can occur.

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Cervical Cancer, continued

Name	Potential Years of Life Lost (**PYLL**) Rate due to cervical cancer (ICD10 C53)
Definition	**PYLL** is a measure of premature mortality. The PYLL due to cervical cancer measures the total number of years persons would have lived additionally, had they not died prematurely from cervical cancer. Premature death refers to deaths occurring before the country-specific estimated life expectancy. Rate is expressed per 100,000
Case definition	premature death due to cervical cancer
Calculation method	{[(Female Estimated life expectancy – mean age at death for premature female deaths) * number of premature female deaths] / (Female population under estimated life expectancy)}*100,000
Parameters	• Numerator: (Female estimated life expectancy – Mean age at death for premature female deaths) * Number of premature female deaths • Denominator: Population under estimated life expectancy • Measurement unit: per 100,000 • Type: rate • Categories**:** female; age under country-specific estimated life expectancy • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries.
Significance and rational	PYLL due to cervical cancer can be used by public health community and researchers to evaluate the impact of health promotion programs, life style changes and modification of risk factors for increasing the life expectancy of the population.

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Cervical Cancer, continued

Limitations of indicator and data sources

One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL. All future years of life are weighed equally.

Another important limitation is that PYLL does not account for the amount of disability or suffering involved with certain health conditions. That is measured using Disability Adjusted Life Years (DALYS).

Lung cancer (including trachea, bronchus and lung)

Name	Age-standardized mortality rate per 100,000 population for deaths <70 years due to lung cancer including trachea, bronchus and lung. (ICD10 C33, C34)
Definition	Deaths <70 years due to lung cancer including trachea, bronchus and lung expressed per 100,000 population standardized to a standard population. This is necessary to control for differing age distributions from country to country. The WHO World Standard Population, which reflects the average age structure of the world's population expected over the next generation (from 2000 to 2025), will be used.
Case definition	Age-standardized mortality rates per 100,000 for deaths <70 years due to lung cancer including trachea, bronchus and lung, using the WHO World Standard Population.
Calculation method	The sum of the weighted age-specific mortality rates per 100,000 population (by 5 year age groupings) for deaths <70 years due to lung cancer including trachea, bronchus and lung using the WHO World Standard Population.
Parameters	• Measurement unit: per 100,000 • Type: rate • Categories**:** female, male; age <70 years • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and population distributions.

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Lung cancer including trachea, bronchus and lung, continued

Significance and rational

Approximately 80%–90% of lung cancer mortality is attributable to cigarette smoking. Lung cancer mortality is also associated with environmental tobacco smoke and certain workplace exposures. The 5-year relative survival rate is <15%, among one of the lowest of common cancers. Therefore mortality rates can be particularly useful to detect trends and to serve for developing targeted programs and policies that limit tobacco smoke and exposure can help to decrease mortality rates due to lung cancer.

Because lung cancer has a long latency period, years might pass before changes in smoking behavior or patterns of clinical practice affect lung cancer mortality among the general population.

Characteristics of indicator and data sources

Age-standardized mortality rates can be used to compare the mortality rates of countries without being affected by the difference in age distributions from country to country. Without using this standardization, it would be unclear if differing mortality rates were due to differences in age distribution or as a result of other factors. The use of a **standard population** is needed and for this purpose, the WHO World Standard Population will be used.

A limitation of the use of data from cancer registries is that they can have different coverage (hospital, sub national population ones and national population ones) and that can be reflected in the number of cases reported, so under reporting can occur.

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Lung cancer (including trachea, bronchus and lung), continued

Name	Potential Years of Life Lost (**PYLL**) Rate due to lung cancer including trachea, bronchus and lung (ICD10 C33, C34)
Definition	**PYLL** is a measure of premature mortality. The PYLL due to lung cancer including trachea, bronchus and lung measures the total number of years persons would have lived additionally, had they not died prematurely from lung cancer. Premature death refers to deaths occurring before the country-specific estimated life expectancy. Rate is expressed per 100,000
Case definition	premature death due to lung cancer
Calculation method	{[(Estimated life expectancy – mean age at death for premature deaths) * number of premature deaths] / (population under estimated life expectancy)}*100,000
Parameters	• Numerator: (Estimated life expectancy – Mean age at death for premature deaths) *Number of premature deaths • Denominator: Population under estimated life expectancy • Measurement unit: per 100,000 • Type: rate • Categories**:** female, male; age under country-specific estimated life expectancy • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries
Significance and rational	PYLL due to lung cancer can be used by public health community and researchers to evaluate the impact of health promotion programs, life style changes and modification of risk factors on increasing the life expectancy of the population.

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Lung cancer (including trachea, bronchus and lung), continued

Limitations of indicator and data sources

One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL. All future years of life are weighed equally.

Another important limitation is that PYLL does not account for the amount of disability or suffering involved with certain health conditions. That is measured using Disability Adjusted Life Years (DALYS).

Breast Cancer

Name	Age-standardized mortality rate per 100,000 population for deaths <70 years due to female breast cancer (ICD10 C50)
Definition	Deaths <70 years due to female breast expressed per 100,000 population standardized to a standard population. This is necessary to control for differing age distributions from country to country. The WHO World Standard Population, which reflects the average age structure of the world's population expected over the next generation (from 2000 to 2025), will be used.
Case definition	Age-standardized mortality rates per 100,000 for deaths <70 years due to female breast, using the WHO World Standard Population.
Calculation method	The sum of the weighted age-specific mortality rates per 100,000 population (by 5 year age groupings) for deaths <70 years due to female breast cancer using the WHO World Standard Population.
Parameters	• Measurement unit: per 100,000 • Type: rate • Categories**:** female; age <70 years • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and population distributions.
Significance and rational	The incidence of breast cancer in Latin America and the Caribbean is between 25.9-46/100,000 and the mortality rate is aprox 10.5-15.1/100,000. As breast cancer is considered an evitable cause of death with a high survival rate, crude and standardized mortality rates as well as PYLL provides information for decisions regarding screening and strengthening secondary and tertiary health care level.

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Breast Cancer, continued

Characteristics of indicator and data sources	The standardized mortality rate (using world population estimation as reference) is very useful for further comparisons as it eliminates differences in age. However, when used to compare effectiveness of screening vs. non screening program, crude mortality rates fail to take into account the response capacity of the health care system as well as that some types of tumors are so aggressive that even the earliest detection will fail to eradicate them. A limitation of the use of data from cancer registries is that they can have different coverage (hospital, sub national population ones and national population ones) and that can be reflected in the number of cases reported, so under reporting can occur.

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Breast Cancer, continued

Name	Potential Years of Life Lost (**PYLL**) Rate due to female breast cancer. (ICD 10 C50)
Definition	**PYLL** is a measure of premature mortality. The PYLL due to female breast cancer measures the total number of years persons would have lived additionally, had they not died prematurely from female breast cancer. Premature death refers to deaths occurring before the country-specific estimated life expectancy. Rate is expressed per 100,000
Case definition	premature death due to female breast cancer
Calculation method	{[(Female Estimated life expectancy – mean age at death for premature female deaths) * number of premature female deaths] / (Female population under estimated life expectancy)}*100,000
Parameters	• Numerator: (Female estimated life expectancy – Mean age at death for premature female deaths) * Number of premature female deaths • Denominator: Population under estimated life expectancy • Measurement unit: per 100,000 • Type: rate • Categories**:** female; age under country-specific estimated life expectancy • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries
Significance and rational	PYLL due to breast cancer can be used by public health community and researchers to evaluate the impact of health promotion programs, life style changes and modification of risk factors on increasing the life expectancy of the population

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Breast Cancer, continued

Limitations of indicator and data sources	One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL. All future years of life are weighed equally. Another important limitation is that PYLL does not account for the amount of disability or suffering involved with certain health conditions. That is measured using Disability Adjusted Life Years (DALYS).

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Cancer of the Digestive System

Name	Age-standardized mortality rate per 100,000 population for deaths <70 years due to cancers of the digestive system (ICD10 C15-C26, C48)
Definition	Deaths <70 years due to cancers of the digestive system expressed per 100,000 population standardized to a standard population. This is necessary to control for differing age distributions from country to country. The WHO World Standard Population, which reflects the average age structure of the world's population expected over the next generation (from 2000 to 2025), will be used.
Case definition	Age-standardized mortality rates per 100,000 for deaths <70 years due to cancers of the digestive system, using the WHO World Standard Population.
Calculation method	The sum of the weighted age-specific mortality rates per 100,000 population (by 5 year age groupings) for deaths <70 years due to cancers of the digestive system using the WHO World Standard Population.
Parameters	• Measurement unit: per 100,000 • Type: rate • Categories**:** female, male; age <70 years • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and population distributions.
Significance and rational	Cancer of the colon, rectum and stomach are some of the most common in Latin America and is on increase in the Caribbean. Significant morbidity and mortality from cancer of, colon and rectum, oral cavity and pharynx, can be reduced through preventive actions and programs of early detection and treatment.

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Cancer of the Digestive System, continued

Characteristics of indicator and data sources	The standardized mortality rate (using world population estimation as reference) is very useful for further comparisons as it eliminates differences in age. However, when used to compare effectiveness of screening vs. non screening program, crude mortality rates fail to take into account the response capacity of the health care system as well as that some types of tumors are so aggressive that even the earliest detection will fail to eradicate them. A limitation of the use of data from cancer registries is that they can have different coverage (hospital, sub national population ones and national population ones) and that can be reflected in the number of cases reported, so under reporting can occur.

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Cancer of the Digestive System, continued

Name	Potential Years of Life Lost (**PYLL**) Rate due to cancer of the digestive system (ICD10 C15-C26, C48)
Definition	**PYLL** is a measure of premature mortality. The PYLL due to cancer of digestive system measures the total number of years persons would have lived additionally, had they not died prematurely from cancer of digestive system. Premature death refers to deaths occurring before the country-specific estimated life expectancy. Rate is expressed per 100,000
Case definition	premature death due to cancer of digestive system
Calculation method	{[(Estimated life expectancy – mean age at death for premature deaths) * number of premature deaths] / (population under estimated life expectancy)}*100,000
Parameters	• Numerator: (Estimated life expectancy – Mean age at death for premature deaths) *Number of premature deaths • Denominator: Population under estimated life expectancy • Measurement unit: per 100,000 • Type: rate • Categories**:** female, male; age under country-specific estimated life expectancy • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries

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Cancer of the Digestive System, continued

Significance and rational	PYLL due to digestive cancer can be used by public health community and researchers to evaluate the impact of health promotion programs, life style changes and modification of risk factors on increasing the life expectancy of the population
Characteristics of indicator and data sources	One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL. All future years of life are weighed equally. Another important limitation is that PYLL does not account for the amount of disability or suffering involved with certain health conditions. That is measured using Disability Adjusted Life Years (DALYS).

Diabetes

Name	Age-standardized mortality rate per 100,000 population for deaths <70 years due to underlying cause being diabetes (IC10 E10-E14),
Definition	Deaths <70 years due to underlying cause being diabetes expressed per 100,000 population standardized to a standard population. This is necessary to control for differing age distributions from country to country. The WHO World Standard Population, which reflects the average age structure of the world's population expected over the next generation (from 2000 to 2025), will be used.
Case definition	Age-standardized mortality rates per 100,000 for deaths <70 years due to underlying cause being diabetes, by 100.000 population using the WHO World Standard Population.
Calculation method	The sum of the weighted age-specific mortality rates per 100,000 population (by 5 year age groupings) for deaths <70 years due to underlying cause being diabetes using the WHO World Standard Population.
Parameters	• Measurement unit: per 100,000 • Type: rate • Categories**:** female, male; age <70 years • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and population distributions.
Significance and rational	Mortality rates of diabetes are originated mostly through information of diabetes as associated cause of death due to complications of cardiovascular nature, renal insufficiency or amputation complications. Long-term complications of diabetes and premature death can be prevented through early screening and achieving good disease control. Means to prevent complications and death include improved quality of care, patient education and self management.

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Diabetes, continued

Characteristics of indicator and data sources

Age-standardized mortality rates can be used to compare the mortality rates of countries without being affected by the difference in age distributions from country to country. Without using this standardization, it would be unclear if differing mortality rates were due to differences in age distribution or as a result of other factors.
The use of a **standard population** is needed and for this purpose, the WHO World Standard Population will be used.

A limitation of the use of data from cancer registries is that they can have different coverage (hospital, sub national population ones and national population ones) and that can be reflected in the number of cases reported, so under reporting can occur.

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Diabetes, continued

Name	Potential Years of Life Lost (**PYLL**) Rate due to diabetes (ICD10 E10-E14)
Definition	**PYLL** is a measure of premature mortality. The PYLL due to diabetes measures the total number of years persons would have lived additionally, had they not died prematurely from diabetes or a related complication. Premature death refers to deaths occurring before the country-specific estimated life expectancy. Rate is expressed per 100,000.
Case definition	premature death due to Diabetes or a related complication
Calculation method	{[(Estimated life expectancy – mean age at death for premature deaths) * number of premature deaths] / (population under estimated life expectancy)}*100,000
Parameters	• Numerator: (Estimated life expectancy – Mean age at death for premature deaths) *Number of premature deaths • Denominator: Population under estimated life expectancy • Measurement unit: per 100,000 • Type: rate • Categories**:** female, male; age under country-specific estimated life expectancy • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries

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Diabetes, continued

Significance and rational	PYLL due to Diabetes can be used by public health officials and researchers to evaluate the impact of screening programs, life style changes and disease management to increase the life expectancy of the population.
Limitations of indicator and data sources	One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL. All future years of life are weighed equally. Another important limitation is that PYLL does not account for the amount of disability or suffering/quality of life involved with certain health conditions.

Chronic Lower Respiratory Diseases

Name	Age-standardized mortality rate per 100,000 population for deaths <70 years due to lower respiratory diseases (ICD10 J40-J47)
Definition	Deaths <70 years due to respiratory diseases expressed per 100,000 population standardized to a standard population. This is necessary to control for differing age distributions from country to country. The WHO World Standard Population, which reflects the average age structure of the world's population expected over the next generation (from 2000 to 2025), will be used.
Case definition	Age-standardized mortality rates per 100,000 for deaths <70 years due to lower respiratory diseases using the WHO World Standard Population.
Calculation method	The sum of the weighted age-specific mortality rates per 100,000 population (by 5 year age groupings) for deaths <70 years due respiratory diseases, using the WHO World Standard Population.
Parameters	• Measurement unit: per 100,000 • Type: rate • Categories**:** female, male; age <70 years • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and population distributions.
Significance and rational	The mortality from lower respiratory diseases has increased by 40% in the past 2 decades and elimination of tobacco use is the most effective way to reduce the morbidity and mortality due to lower respiratory diseases because approximately 90% of COPD is attributable to smoking. Other risk factors for lower respiratory diseases include occupational exposure, second hand smoke and air pollution.

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Chronic Lower Respiratory Diseases, continued

Characteristics of indicator and data sources	The accuracy of the listing of the cause of death for chronic lung diseases, including COPD and asthma, might be low, especially among decedents aged >35 years. **Age-standardized mortality rates** can be used to compare the mortality rates of countries without being affected by the difference in age distributions from country to country. Without using this standardization, it would be unclear if differing mortality rates were due to differences in age distribution or as a result of other factors. The use of a **standard population** is needed and for this purpose, the WHO World Standard Population will be used.
Limitations of indicator and data sources	Causes of death and other variables listed on the death certificate might be inaccurate. The number of contributing causes of death listed on the death certificate might vary by person completing the death certificate and geographic region.

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Chronic Lower Respiratory Diseases, continued

Name	Potential Years of Life Lost (**PYLL**) Rate due to chronic lower respiratory disease (ICD10 J40-J47)
Definition	**PYLL** is a measure of premature mortality. The PYLL due to chronic lower respiratory diseases measures the total number of years persons would have lived additionally, had they not died prematurely from chronic lower respiratory diseases. Premature death refers to deaths occurring before the country-specific estimated life expectancy. Rate is expressed per 100,000
Case definition	premature death due to Diabetes or a related complication
Calculation method	{[(Estimated life expectancy – mean age at death for premature deaths) * number of premature deaths] / (population under estimated life expectancy)}*100,000
Parameters	• Numerator: (Estimated life expectancy – Mean age at death for premature deaths) *Number of premature deaths • Denominator: Population under estimated life expectancy • Measurement unit: per 100,000 • Type: rate • Categories**:** female, male; age under country-specific estimated life expectancy • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries

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Lower Respiratory Diseases, continued

Significance and rational	PYLL due to lower respiratory diseases can be used by public health officials and researchers to evaluate the impact of health promotion programs, life style changes and modification of risk factors on increasing the life expectancy of the population.
Limitations of indicator and data sources	One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL. All future years of life are weighed equally. Another important limitation is that PYLL does not account for the amount of disability or suffering involved with certain health conditions. That is measured using Disability Adjusted Life Years (DALYS).

External Causes

Name	Age-standardized mortality rate per 100,000 population for deaths <70 years due to external causes (ICD10 V01-Y89) including all type of transport accidents; accidental falls; accidental drowning; suicide and intentional self-harm; and homicide and injury purposely inflicted by another person.
Definition	Deaths <70 years due to external causes expressed per 100,000 population standardized to a standard population. This is necessary to control for differing age distributions from country to country. The WHO World Standard Population, which reflects the average age structure of the world's population expected over the next generation (from 2000 to 2025), will be used.
Case definition	Age-standardized mortality rates per 100,000 for deaths <70 years due to external causes, using the WHO World Standard Population.
Calculation method	The sum of the weighted age-specific mortality rates per 100,000 population (by 5 year age groupings) for deaths <70 years due to external causes including all type of transport accidents; accidental falls; accidental drowning; suicide and intentional self-harm; and homicide and injury purposely inflicted by another person using the WHO World Standard Population.
Parameters	• Measurement unit: per 100,000 • Type: rate • Categories**:** female, male; age <70 years • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and population distributions.
Significance and rational	Deaths coded to external causes of death are an important part of the causes of death collection because they are used for injury surveillance and provide valuable information to support the development of policy for disease and injury prevention

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External Causes, continued

Limitations of indicator and data sources	The indicator may underestimate the real number of deaths since a percentage of these deaths don't occur in hospitals and in some countries may not be recorded. Also, if the cause of death is classified to an injury code, the underlying external cause of death may not be captured.

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External Causes, continued

Name	Potential Years of Life Lost (**PYLL**) Rate due to external causes (ICD10 V01-Y89)
Definition	**PYLL** is a measure of premature mortality. The PYLL due to external causes measures the total number of years persons would have lived additionally, had they not died prematurely from external causes. Premature death refers to deaths occurring before the country-specific estimated life expectancy. Rate is expressed per 100,000
Case definition	premature death due to external causes
Calculation method	{[(Estimated life expectancy – mean age at death for premature deaths) * number of premature deaths] / (population under estimated life expectancy)}*100,000
Parameters	• Numerator: (Estimated life expectancy – Mean age at death for premature deaths) *Number of premature deaths • Denominator: Population under estimated life expectancy • Measurement unit: per 100,000 • Type: rate • Categories**:** female, male; age under country-specific estimated life expectancy • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries

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External Causes, continued

Significance and rational	PYLL due to external causes can be used by public health officials and researchers to evaluate the impact of health promotion programs, life style changes and modification of risk factors on increasing the life expectancy of the population
Limitations of indicator and data sources	One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL. All future years of life are weighed equally. Another important limitation is that PYLL does not account for the amount of disability or suffering involved with certain health conditions. That is measured using Disability Adjusted Life Years (DALYS). PYLL due to Diabetes can be used by public health officials and researchers to evaluate the impact of screening programs, life style changes and disease management to increase the life expectancy of the population.

Land Transport Accidents

Name	Age-standardized mortality rate per 100,000 population for deaths <70 years due to Land transport accidents (ICD 10 V01-V89),
Definition	Deaths <70 years due to Land transport accidents expressed per 100,000 population standardized to a standard population. This is necessary to control for differing age distributions from country to country. The WHO World Standard Population, which reflects the average age structure of the world's population expected over the next generation (from 2000 to 2025), will be used.
Case definition	Age-standardized mortality rates per 100,000 for deaths <70 years due to Land transport accidents using the WHO World Standard Population.
Calculation method	The sum of the weighted age-specific mortality rates per 100,000 population (by 5 year age groupings) for deaths <70 years due to land transport accidents using the WHO World Standard Population.
Parameters	• Measurement unit: per 100,000 • Type: rate • Categories**:** female, male; age <70 years • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and population distributions.
Significance and rational	Land transport accidents are a leading cause of injury, both fatal and non-fatal and deaths due to land transport accidents are an important part of the causes of death data collection because they are used for surveillance of injuries due to road traffic accidents and provide valuable information to support the development of policy for accidents and injury prevention.

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Land Transport Accidents, continued

Limitations of indicator and data sources	The indicator may underestimate the real number of deaths since a percentage of these deaths do not occur in hospitals and in some countries may not be recorded. Also, if the cause of death is classified to an injury code, the underlying external cause of death may not be captured.

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Land Transport Accidents, continued

Name	Potential Years of Life Lost (**PYLL**) Rate due to Land Transport Accidents (ICD 10 V01-V89)
Definition	**PYLL** is a measure of premature mortality. The PYLL due to land transport accidents measures the total number of years persons would have lived additionally, had they not died prematurely from land transport accidents. Premature death refers to deaths occurring before the country-specific estimated life expectancy. Rate is expressed per 100,000
Case definition	premature death due to Land Transport Accidents
Calculation method	{[(Estimated life expectancy – mean age at death for premature deaths) * number of premature deaths] / (population under estimated life expectancy)}*100,000
Parameters	• Numerator: (Estimated life expectancy – Mean age at death for premature deaths) *Number of premature deaths • Denominator: Population under estimated life expectancy • Measurement unit: per 100,000 • Type: rate • Categories**:** female, male; age under country-specific estimated life expectancy • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries

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Land Transport Accidents, continued

Significance and rational	PYLL due to Land Transport Accidents can be used by public health officials and researchers to evaluate the impact of screening programs, life style changes and disease management to increase the life expectancy of the population.
Limitations of indicator and data sources	One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL. All future years of life are weighed equally. Another important limitation is that PYLL does not account for the amount of disability or suffering/quality of life involved with certain health conditions.

Assault (homicide)

Name	Age-standardized mortality rate per 100,000 population for deaths <70 years due to Assault (homicide) (ICD10 X85-Y09),
Definition	Deaths <70 years due to assault expressed per 100,000 population standardized to a standard population. This is necessary to control for differing age distributions from country to country. The WHO World Standard Population, which reflects the average age structure of the world's population expected over the next generation (from 2000 to 2025), will be used.
Case definition	Age-standardized mortality rates per 100,000 for deaths <70 years due to assault using the WHO World Standard Population.
Calculation method	The sum of the weighted age-specific mortality rates per 100,000 population (by 5 year age groupings) for deaths <70 years due to Assault using the WHO World Standard Population.
Parameters	• Measurement unit: per 100,000 • Type: rate • Categories**:** female, male; age <70 years • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and population distributions.
Significance and rational	Deaths coded to homicide are an important part of the causes of death collection because they support the development of policy for crime prevention

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Assault (homicide), continued

Limitations of indicator and data sources	The indicator may underestimate the real number of deaths since a percentage of these deaths don't occur in hospitals and in some countries may not be recorded. Also, if the cause of death is classified to an injury code, the underlying external cause of death may not be captured.

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Assault (homicide), continued

Name	Potential Years of Life Lost (**PYLL**) Rate due to assault (homicide) (ICD10 X85-Y09)
Definition	**PYLL** is a measure of premature mortality. The PYLL due to assault, measures the total number of years persons would have lived additionally, had they not died prematurely from assault (homicide). Premature death refers to deaths occurring before the country-specific estimated life expectancy. Rate is expressed per 100,000
Case definition	premature death due to assault (homicide)
Calculation method	{[(Estimated life expectancy – mean age at death for premature deaths) * number of premature deaths] / (population under estimated life expectancy)}*100,000
Parameters	• Numerator: (Estimated life expectancy – Mean age at death for premature deaths) *Number of premature deaths • Denominator: Population under estimated life expectancy • Measurement unit: per 100,000 • Type: rate • Categories**:** female, male; age under country-specific estimated life expectancy • Frequency of collection: annual
Data sources	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries

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Assault (homicide), continued

Significance and rational	PYLL due to assault can be used by public health officials and researchers to evaluate the impact of screening programs, life style changes and disease management to increase the life expectancy of the population.
Limitations of indicator and data sources	One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL. All future years of life are weighed equally. Another important limitation is that PYLL does not account for the amount of disability or suffering/quality of life involved with certain health conditions.

SECTION II: PREVALENCE/INCIDENCE OF SELECTED NCDs

Diabetes Mellitus

Name	Prevalence and Standard Deviation of Diabetes Mellitus (ICD10 E10-E14)
Definition	Diabetics registered in the population, expressed as a percentage of the corresponding mid-year population, for a given year
Case definition	An individual who reports having ever being diagnosed with diabetes e.g. elevated fasting plasma glucose ≥ 7 mmol/l (126 mg/dl) or in 2-h levels of plasma glucose ≥ 11.1 mmol/l (200 mg/dl) during an OGTT (Oral Glucose Tolerance Test). Fasting is defined as no caloric intake at least 8 hours prior to measurement.
Calculation method	Number of respondents who reported to be diagnosed with diabetes/ total number of respondents of the survey
Parameters	• Numerator: number of respondents who have elevated fasting plasma glucose ≥ 7 mmol/l (126 mg/dl) or 2-h plasma glucose ≥ 11.1 mmol/l (200 mg/dl) (self-reported) • Denominator**:** total number of respondents of the survey • Measurement unit: per 100 • Type: rate • Categories**:** female, male; aged 25-64 and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	National or sub national risk factors surveys. (STEPS or similar)
Significance and rational	This indicator is useful to monitor the occurrence of diabetes, to inform interventions for treatment and policy action, evaluation of diabetes prevention programs and advocacy to implement diabetes prevention programs.

Continued on the next page

Limitations of indicator and data sources	There are several limitations with this indicator. The first limitation is that approximately one third of cases of diabetes are undiagnosed. As with all self reported sample surveys, data might be subject to systematic error resulting from non-coverage, non-response or measurement.

Continued on the next page

Diabetes Mellitus, continued

Name	Incidence and Standard Deviation of Diabetes Mellitus (ICD10 E10-E14)
Definition	Population who report having being diagnosed with Diabetes during the last year expressed as percentage of total respondents of the survey OR Diabetes incidence as detected for the first time through the health care system.
Case definition	An individual who reports having being diagnosed with diabetes during the last year. Diabetes mellitus is defined as elevated fasting plasma glucose ≥ 7 mmol/l (126 mg/dl) or 2-h plasma glucose ≥ 11.1 mmol/l (200 mg/dl). Fasting is defined as no caloric intake at least 8 hours prior to measurement.
Calculation method	Number of respondents who have elevated fasting plasma glucose ≥ 7 mmol/l (126 mg/dl) or 2-h plasma glucose ≥ 11.1 mmol/l (200 mg/dl). From self-reported or measured in a health care center during the last year / # of total respondents of the survey
Parameters	• Numerator: Number of respondents who have elevated fasting plasma glucose ≥ 7 mmol/l (126 mg/dl) or 2-h plasma glucose ≥ 11.1 mmol/l (200 mg/dl). From self-reported or measured in a health care center during the last year • Denominator: total number of respondents of the survey • Measurement unit**:** per 100, • Type**:** Rate • Categories: Male, Female; aged 25-64 and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection**:** Every 3-5 years
Data sources	National or sub national risk factors surveys. (STEPS or similar) OR properly constituted Diabetic Registers

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Diabetes Mellitus, continued

Significance and rational	This indicator measures the Incidence of population diagnosed with diabetes in one defined geographical area and specific time point. It is useful to monitor the occurrence of diabetes, surveillance, to inform interventions for screening and policy action.
Limitations of indicator and data sources	There are several limitations with this indicator. The first limitation is that approximately one third of cases of diabetes are undiagnosed. If information is used from self reported sample surveys, data might be a subject of systematic error resulting from non coverage, non response or measurement.

Hypertension

Name	Prevalence and Standard Deviation of Hypertension (ICD10 I10-I15)
Definition	Population who reports having ever being diagnosed with hypertension by health professional expressed as percentage of total respondents of the survey
Case definition	An individual whose blood pressure is > 140/90 mm
Calculation method	number of respondents who have blood pressure > 140-90 from self-reported measured in a health care center/# of total respondents of the survey
Parameters	• Numerator: Number of respondents from the survey who have blood pressure > 140/90 from self-report or measured in a health care center • Denominator: total number of respondents of the survey • Measurement unit**:** per 100 • Type**:** Rate • Categories: Male, Female; age 25-64 and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection**:** Every 3-5 years
Data sources	National or sub national risk factors surveys (STEPS or similar)
Significance and rational	Approximately 20%–30% of coronary heart disease and 20%–50% of strokes are attributable to uncontrolled hypertension. Blood pressure-related cardiovascular complications can occur before the onset of established hypertension. Lifestyle risk factors like excessive caloric intake, physical inactivity, excessive alcohol consumption, and deficient potassium intake are related to onset or maintenance of elevated blood pressure.

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Hypertension, continued

Limitations of indicator and data sources	The indicator may not include persons with hypertension who have their blood pressure successfully controlled through lifestyle changes and without medication. As with all self reported sample surveys, data might be subject to errors resulting from non-coverage, non-response or appropriate data weighting.

Continued on the next page

Hypertension, continued

Name	Incidence and Standard Deviation of hypertension (ICD10 I10-I15)
Definition	Population who report having being diagnosed with hypertension by a health professional during the last year expressed as percentage of population surveyed.
Case definition	An individual who has been diagnosed with blood pressure over 140/90 by a health professional during the last year OR hypertension incidence as detected for the first time through the health care system.
Calculation method	number of respondents who report having being diagnosed with Hypertension during the last year / total number of respondents of the survey OR with blood pressure over 140/90 measured in a health care center during the last year/ total number of persons 25-64 b whose lood pressure was measured during the last
Parameters	• Numerator: Number of respondents who reported having being diagnosed with Hypertension by a health professional during the last year Denominator: total number of respondents of the survey • Measurement unit**:** per 100, • Type**:** Rate • Categories: Male, Female; aged 25-64 and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection**:** Every 3-5 years
Data sources	National or sub national risk factors surveys. (STEPS or similar) OR properly constituted Hypertension Registers

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Hypertension, continued

Significance and rational	Blood pressure-related cardiovascular complications can occur before the onset of established hypertension. And approximately 20%–30% of coronary heart disease and 20%–50% of strokes are attributable to uncontrolled hypertension therefore, screening and early detection can help to develop programs directed to modify Lifestyle risk factors like excessive caloric intake, physical inactivity, excessive alcohol consumption, and deficient potassium intake are related to onset or maintenance of elevated blood pressure.
Limitations of indicator and data sources	The indicator may not include persons with hypertension who have not undergone screening for blood pressure As with all self reported sample surveys, data might be subject to systematic error resulting from non-coverage, non-response or measurement.

Overweight

Name	Prevalence and Standard Deviation of Overweight among Adults and adolescents
Definition	Population who has a body mass index (BMI between 25. and 29.9 kg/m2 calculated from self reported weight and height or measured height and weight expressed as percentage of population surveyed.
Case definition	**Adult:** An overweight person is an individual whose BMI is between 25-29.9 kg/m2 Guidelines have established additional BMI cut points for weight: underweight,<18.5; Normal, 18.5-24.9; overweight, 25-29.9; obesity I 30-34.9; obesity II 35-39.9; Obesity III >40 **Adolescent**: An overweight adolescent is an individual whose weight falls in the 85th percentile according to 2007 WHO growth reference for adolescents.
Calculation method	**Adults:** Number of respondents who have BMI between 25-29.9 /number of respondents whose height and weight were reported or were measured. **Adolescents:** Number of adolescents whose weight falls in the 85th percentile according to 2007 WHO growth reference for adolescents

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Overweight, continued

Parameters	• Numerator:
	  o Adults: Number of respondents who have a body mass index (BMI) between 25.0 kg/m2 and 29.9 calculated from self-reported or measured weight and height.
	  o Adolescents**:** Number of adolescents whose weight falls in the 85th percentile according to 2007 WHO growth reference for adolescents from self-reported or measured weight and height.
	• Denominator: Respondents for whom BMI can be calculated from their self-reported weight and height (excluding unknowns or refusals to provide weight or height).
	• Measurement unit**:** per 100
	• Type**:** Rate
	• Categories:
	  o ADULT: Male, Female, Total aged 25-64 and by age group 25-34, 35-44, 45-54, 55-64.
	  o ADOLESCENT: Male and Female, Total aged 13-15 years
	• Frequency of collection: every 3-5 years

Data sources	National or sub national risk factors surveys (STEPS, GSHS)
Significance and rational	The prevalence of overweight and obesity have been progressively increasing in Latin America and the Caribbean. Overweight may lead to obesity and it increases the likelihood of developing several chronic diseases, including heart disease, stroke, hypertension, type 2 diabetes, osteoarthritis, and certain cancer, this is important because it is preventable and an appropriate amount, intensity and duration of regular physical activity in combination with decreased caloric, fat intake might reduce a person's BMI.
Limitations of indicator and data sources	If **s**elf reported data are used they may be subject to errors and has limitations as respondents tend to overestimate their height and underestimate their weight, leading to underestimation of BMI and of the prevalence of overweight. Additionally for data analysis appropriated data weighting needs to be done when there is not a 100% coverage/response, and errors due to measurement should also be considered.

Obesity

Name	Prevalence and Standard Deviation of Obesity
Definition	Population who have a body mass index (BMI over 30.0 kg/m2 calculated from self reported weight and height or measured height and weight expressed as percentage of population surveyed.
Case definition	**Adult:** An obese person is an individual whose calculated BMI is 30.0 kg/m2 and over. Guidelines have established additional BMI cut points for weight: underweight,<18.5; Normal, 18.5-24.9; overweight, 25-29.9; obesity I 30-34.9; obesity II 35-39.9; Obesity III >40 **Adolescent:** An obese adolescent is an individual whose weight falls in 97th percentile according to 2007 WHO growth reference for adolescents.
Calculation method	**Adult:** Number of respondents who have BMI 30.0kg/m2 and over /number of respondents whose height and weight were reported or were measured **Adolescent:** Number of adolescents whose weight falls in the 97th percentile according to 2007 WHO growth reference for adolescents

Parameters	• Numerator: Respondents who have a body mass index (BMI) 30.0 kg/m2 and over, calculated from self-reported or measured weight and height.
	  o Adolescents: Number of adolescents whose weight falls in the 97th percentile according to 2007 WHO growth reference for adolescents from self-reported or measured weight and height.
	• Denominator**:** Respondents for whom BMI can be calculated from their self-reported weight and height (excluding unknowns or refusals to provide weight or height).
	
	• Measurement unit**:** per 100
	• Type**:** Rate
	• Categories:
	  o ADULT: Male, Female, ages 25-64 and by age group 25-34, 35-44, 45-54, 55-64
	  o ADOLESCENT: Male and Female, ages 13-15
	• Frequency of collection**:** Every 3-5 years

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Obesity, continued

Data sources	National or sub national risk factors surveys. (STEPS, GSHS)
Significance and rational	The prevalence of overweight and obesity have been progressively increasing in Latin America. Overweight may lead to obesity and it increases the likelihood of developing several chronic diseases, including heart disease, stroke, hypertension, type 2 diabetes, osteoarthritis, and certain cancer, this is important because it is preventable and an appropriate amount, intensity and duration of regular physical activity in combination with decreased caloric, fat intake might reduce a person's BMI
Limitations of indicator and data sources	If **s**elf reported data are used they may be subject to errors and has limitations as respondents tend to overestimate their height and underestimate their weight, leading to underestimation of BMI and of the prevalence of overweight. Additionally for data analysis appropriated data weighting needs to be done when there is not a 100% coverage/response, and errors due to measurement should also be considered.

SECTION III: RISK FACTORS FOR CHRONIC DISEASES

First-hand Smoke (tobacco)

Name	Prevalence (and Standard Deviation) of current daily smokers of tobacco among adults
Definition	Population who report to be current daily smokers expressed as percentage of population surveyed.
Case definition	A current daily smoker is an individual who reports smoking tobacco every day
Calculation method	Number of respondents who report being current daily smokers / total number of respondents of the survey
Parameters	• Numerator: Number of respondents who report being daily smokers • Denominator: Total number of respondents of the survey • Measurement unit**:** per 100 • Type**:** Rate • Categories: Male, Female; ages 25 -64 and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection**:** Every 3- 5 years
Data sources	National or sub national risk factors surveys. (STEPS or similar)
Significance and rational	The prevalence of tobacco smoking is high in Latin America and exposure to second hand smoke is common in Latin America and the Caribbean. Smoking is a highly addictive behavior that is linked to an increased risk of poor general health and frequent hospitalization. Smoking increases the risk of heart disease, cancer, stroke and chronic lung disease. In addition environmental tobacco smoke has been demonstrated to increase the risk of heart disease and cancer among nonsmokers. The information will support implementation of tobacco control policies.

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First-hand Smoke (tobacco), continued

Limitations of indicator and data sources

The indicator does not convey the lifetime or current amount of cigarettes smoked or smoking habits besides tobacco. The indicator does not measure intent or attempts to quit smoking among smokers or exposure to environmental tobacco smoker among non-smokers.

As with all self reported sample surveys, data might be subject to errors resulting from non-coverage, non-response and inadequate data weighting

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First-hand smoke (Tobacco), continued

Name	Prevalence (and Standard Deviation) of current smokers of tobacco among adults
Definition	Population reporting to be current smokers expressed as percentage of surveyed population.
Case Definition	A current smoker is an individual who reports smoking tobacco
Calculation method	Number of respondents who report smoking tobacco / total number of respondents of the survey
Parameters	• Numerator: Number of respondents who report being currently smoker • Denominator: Total number of respondents of the survey • Measurement unit: per 100 • Type: rate • Categories: female, male; age 25-64, and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	National or sub national risk factors surveys. (STEPS or similar)
Significance and rational	Prevalence of smoking tobacco is high in Latin America and exposure to second hand smoke is common in Latin America and the Caribbean. Smoking is a highly addictive behavior that is linked to an increased risk of poor general health. Smoking increases the risk of heart disease, cancer, stroke and chronic lung disease. Environmental tobacco smoke has been demonstrated to increase the risk of heart disease and cancer among nonsmokers. The information will support implementation of tobacco control policies.

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First-hand smoke (Tobacco), continued

Limitations of indicator and data sources

The indicator does not convey the lifetime or amount of cigarettes smoked or smoking other products besides tobacco. The indicator does not measure intent or attempts to quit smoking among smokers or exposure to environmental tobacco smoker among non-smokers.

As with all self reported sample surveys, data might be subject to systematic error resulting from non-coverage, non-response or measurement.

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First-hand smoke (Tobacco), continued

Name	Prevalence (and Standard Deviation) of tobacco consumption among the youth
Definition	Young population who report smoking one or more times during the last 30 days expressed as percentage of surveyed population
Case definition	An individual 13-15 year old who reports smoking one or more times during the last 30 days
Calculation method	Number of respondents who report smoking tobacco once or more times during the last 30 days / total number of respondents of the survey (13-15 years old)
Parameters	• Numerator: Number of young respondents (13-15 years old) who report smoking 1 days or more during the last 30 days • Denominator: Total number of respondents of the survey (13-15 years old) • Measurement unit: per 100 • Type: Rate • Categories: Male, Female, ages 13-15 • Frequency of collection: every 3-5 years
Data sources	National or sub national risk factors survey (GYTS, GSHS)
Significance and rational	Prevalence of smoking tobacco is high in Latin America and exposure to second hand smoke is common in Latin America and the Caribbean. Smoking is a highly addictive behavior that is linked to an increased risk of poor general health. Smoking increases the risk of heart disease, cancer, stroke and chronic lung disease. Environmental tobacco smoke has been demonstrated to increase the risk of heart disease and cancer among nonsmokers. The information will support implementation of tobacco control policies.

First-hand smoke (Tobacco), continued

Limitations of indicators and data sources

The indicator does not convey the lifetime or amount of cigarettes smoked or smoking other products besides tobacco. The indicator does not measure intent or attempts to quit smoking among smokers or exposure to environmental tobacco smoker among non-smokers.

As with all self reported sample surveys, data might be subject to systematic error resulting from non-coverage, non-response or measurement.

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First-hand smoke (Tobacco), continued

Name	Average age started smoking (and Standard Deviation)
Definition	Average age at which surveyed individuals start smoking tobacco
Case definition	Age at which a person starts smoking tobacco
Calculation method	**Adults:** sum of all ages at which adults reported started smoking tobacco / Total number of adult respondents who smoke **Adolescents**: sum of all ages at which adolescents reported started smoking tobacco / Total number of adolescent respondents who smoke respondents who smoke

Parameters	• Numerator: Sum of all ages reported as starting smoking tobacco
	• Denominator:
	  o **Adult:** Total number of' adults respondents who smoke
	  o **Adolescents**: Total number of adolescents who smoke
	• Type: mean
	• Categories:
	  o ADULT: Male, Female, ages 25-64 and by age group 25-34, 35-44, 45-54, 55-64
	  o ADOLESCENT: Male and Female, Total ages 13-15
	• Frequency of collection: every 3-5 years

Data sources	National or sub national risk factors surveys (STEPS, GHSH, GYTS)
Significance and rational	Individuals are starting to smoke at early ages in Latin America and the Caribbean. Smoking is a highly addictive behavior that is linked to an increased risk of poor general health and frequent hospitalization. Individuals that start to smoke young increase their risk of heart disease, cancer, stroke and chronic lung disease. Environmental tobacco smoke has been demonstrated to increase the risk of heart disease and cancer among nonsmokers.

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First-hand smoke (tobacco), continued

Limitations of indicators and data sources	The indicator does not convey the lifetime, amount of cigarettes smoked or intent or attempts to quit smoking among smokers or exposure to environmental tobacco smoker among non-smokers. As with all self reported sample surveys, data might be subject to systematic error resulting from non-coverage, non-response or data weighting.

Second-hand smoke (tobacco)

Name	Proportion of population (and Standard Deviation) exposed to second hand smoke
Definition	Population who report being exposed to second hand smoke expressed as percentage of surveyed population
Case definition	Individual that reports exposure to second hand smoke
Calculation method	Number of respondents that reports exposure to second hand smoke/ total number of respondents in the survey

Parameters	• Numerator: Number of respondents that reports exposure to second hand smoke
	• Denominator: total number of respondents in the survey
	• Measurement unit: per 100
	• Type: rate
	• Categories:
	  o ADULT: Male, Female; ages 25-64 and by age group 25-34, 35-44, 45-54, 55-64
	  o ADOLESCENT: Male and Female; ages 13-15
	• Frequency of collection: every 3-5 years

Data sources	National or sub national risk factors surveys (STEPS, GSHS, GYTS)
Significance and rational	Environmental tobacco smoke has been demonstrated to increase the risk of heart disease and cancer among nonsmokers therefore it is important to identify the prevalence of second hand smoke to develop policies
Limitations of indicators and data sources	The indicator does not convey the length and amount of cigarettes smoke and each of these factors can affect the risk of developing cancer and other chronic diseases. As with all self reported sample surveys, data might be subject to errors resulting from non-coverage, non-response or inadequate data weighting

Alcohol consumption

Name	Proportion (and Standard Deviation) of men who are binge drinkers
Definition	Male population who report having ≥ 5 (5 or more) drinks on one or more occasion during the last month expressed as percentage of all the male population surveyed.
Case definition	An individual who has ≥ 5 drinks, more than once during the last month. Binge drinking refers to heavy drinking and a Heavy drinker is an individual who has more than 5 drinks in more that 1 occasion during 1 month
Calculation method	Number of male respondents who report having ≥5 drinks on more than 1 occasion during the last month / total number of male respondents who report having a specific number, including zero, drinks on one occasion during the previous month
Parameters	• Numerator: Number of male respondents who report having ≥5 drinks on more than 1 occasion during the last month • Denominator: total number of male respondents who report having a specific number, including no drinks on one occasion during the previous month (excluding unknowns and refusals) • Measurement unit: per 100 • Type: rate • Categories: Male; ages 25-64 years and by age groups 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	National or sub national risk factor surveys (STEPS or similar)
Significance and rational	Alcohol abuse is strongly associated with injuries, violence, fetal alcohol syndrome, chronic liver disease, some cancers, and risk of other acute and chronic health effects. Binge drinking is an indicator that serves to estimate prevalence of alcohol abuse among the population, track changes over time and be used for alcohol control related policies.

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Alcohol consumption, continued

Limitations of indicators and data sources

The indicator does not convey the frequency of binge drinking or the specific amount of alcohol consumed.

As with all self reported sample surveys, data might be subject to systematic error resulting from non-coverage, non-response or measurement

Continued on the next page

Alcohol consumption, continued

Name	Proportion (and Standard Deviation) of women who are binge drinkers
Definition	Women who report having ≥4 drinks (4 or more) on more than 1 occasion during the last month expressed as percentage of all women who participated in the study
Case definition	Binge drinking refers to heavy drinking and a heavy drinking female is a woman who has ≥4 drinks in more that 1 occasion during 1 month
Calculation method	Number of female respondents who report having ≥4 drinks on more than 1 occasion during the last month / total number of female respondents who report having a specific number, including no drinks on one occasion during the previous month
Parameters	• Numerator: Number of Female respondents who report having ≥4 drinks on more than 1 occasion during the last month • Denominator: Total number of female respondents who report having a specific number, including no drinks on one occasion during the previous month (excluding unknowns and refusals) • Measurement unit: per 100 • Type: rate • Categories: Women; ages 25-64 and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	National or sub national risk factors surveys (STEPS or similar)
Significance and rational	Alcohol abuse is strongly associated with injuries, violence, fetal alcohol syndrome, chronic liver disease, some cancers, and risk of other acute and chronic health effects. Binge drinking is an indicator that serves to estimate prevalence of alcohol abuse among the population, track changes over time and be used for alcohol control related policies.

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Alcohol consumption, continued

Limitations of indicators and data sources

The indicator does not convey the frequency of binge drinking or the specific amount of alcohol consumed.

As with all self reported sample surveys, data might be subject to errors resulting from non-coverage, non-response or inadequate data weighting

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Alcohol consumption, continued

Name	Prevalence (and Standard Deviation) of alcohol consumption among the youth
Definition	Young population (13-15 years old) who had at least one drink containing alcohol on one or more days during the last 30 days.
Case definition	A young individual (13-15 years) who reports having had at least one drink containing alcohol on one or more days during the last 30 days
Calculation method	Number of young respondents (13-15 years old) who report having had at least one drink containing alcohol on one or more days during the last 30 days/ total number of respondents of the survey
Parameters	• Numerator: Number of young respondents (13-15 years old) who report having had at least one drink containing alcohol on one or more days during the last 30 days. • Denominator: total number of respondents of the survey • Measurement unit: per 100 • Type: rate • Categories: Female, Male; ages 13-15 • Frequency of collection: every 3-5 years
Data sources	National or sub national risk factors surveys (GSHS)
Significance and rational	Alcohol use and abuse is strongly associated with injuries, violence, fetal alcohol syndrome, chronic liver disease, and risk of other acute and chronic health effects. This data can be used to evaluate trends and promote alcohol policy initiatives.
Limitations of indicators and data sources	The indicator does not convey the frequency or the specific amount of alcohol consumed. As with all self reported sample surveys, data might be subject to errors resulting from non-coverage, non-response or inadequate data weighting

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Alcohol consumption, continued

Name	Annual per capita alcohol consumption
Definition	The annual per capita alcohol consumption is the total estimated alcohol consumption in a country in a given year
Case definition	per capital alcohol consumption
Calculation method	alcohol production= alcohol imports – alcohol exports/ population 15 years of age and over
Parameters	• Numerator: alcohol production= alcohol imports – alcohol exports • Denominator: population 15 years of age and over • Measurement unit: per 100 • Frequency of collection: every 3-5 years
Data sources	National information from government agencies or data sets of FAO and UN Statistical office
Significance and rational	Estimates of per capita alcohol consumption of adult population are the best available for monitoring trends. Among those who drink at all, the heaviest drinking 10% consume over 50% or more of alcohol consumed. The estimates can be a good proxy for problems of chronic heavy drinking such of cirrhosis of the liver. They can also be indicative of the extent of alcohol related problems an in that way valuable in order to assist with patterns that require attention from policy makers
Limitations of indicators and data sources	The information tends to underestimate consumption within countries with larger populations bellow age of 15 as case in many developing counties. Also it does not include informal production, duty free sales, variation in beverage strength are some of the things that are not taking in to account in the calculation

Foods - fruits

Name	Mean number (and Standard Deviation) of servings of fruits per day
Definition	Average of the number of serving of fruit consumed by male, female and total of the population.
Case definition	A serving size of fruit is defined as: 1/2 cup raw, cooked, frozen or canned fruits (in 100% juice), 1/4 cup dried fruit
Calculation method	Sum of all the number of servings consumed by male, female and total respondents / total number of male, female and total respondents of the survey

Parameters	• Numerator: Sum of all the number of servings consumed by male and female and all the respondents
	• Denominator: total number of respondents of the survey
	• Measurement unit: per 100
	• Type: mean
	• Categories:
	  o ADULT: Male, Female; ages 25-64 and by age group 25-34, 35-44, 45-54, 55-64
	  o ADOLESCENT: Male and Female; ages 13-15 years
	• Frequency of collection: every 3-5 years

Data sources	Obtained from National or sub risk factors surveys (GSHS, STEPS)
Significance and rational	A diet of >5 servings of fruits and vegetables/day is associated with reduced risk of coronary heart disease and certain types of cancer, including cancer of colon, rectum, oral cavity, pharynx, stomach, and esophagus. The mean of the serving of fruits in the population provides an overview of the current diet of the population and can be used for planning or evaluating effects of health promotion policies and programs.

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Foods – fruits, continued

Limitations of indicators and data sources	It conveys the average number of daily servings of fruits consumed. There can be errors in the measurement of serving sizes As with all self reported sample surveys, data might be subject to errors resulting from non response, inadequate data weighting.

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Foods - vegetables

Name	Mean number (and Standard Deviation) of servings of vegetables per day
Definition	Average of the number of servings of vegetables consumed by the population
Case definition	A serving size is:3/4 cup (6 oz.) 100% vegetable juice,1/2 cup cooked, canned or frozen legumes (beans and peas),1 cup raw, leafy vegetables
Calculation method	Sum of all the number of servings of vegetables consumed by all the respondents / total number of respondents of the survey

Parameters	• Numerator: Sum of all the number of servings consumed by all the respondents
	• Denominator: total number of respondents of the survey
	• Measurement unit: per 100
	• Type: Mean
	• Categories:
	  o ADULT: Male, Female; ages 25-64 and by age group 25-34, 35-44, 45-54, 55-64
	  o ADOLESCENT: Male and Female; ages 13-15
	• Frequency of collection: every 3-5 years

Data sources	Obtained from National or sub risk factors surveys (GHSH, STEPS)
Significance and rational	A diet of >5 servings of fruits and vegetables/day is associated with reduced risk of coronary heart disease and certain types of cancer, including cancer of colon, rectum, oral cavity, pharynx, stomach, and esophagus. The mean of the serving of fruits in the population provides an overview of the current diet of the population and can be used for planning or evaluating effects of health promotion policies and programs.

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Foods-vegetables, continued

Limitations of indicators and data sources	It conveys the average number of daily servings of vegetables consumed. There can be an error regarding measurement of serving sizes. As with all self reported sample surveys, data might be subject to errors resulting from non-coverage, non response or data weighting.

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Foods-vegetables and fruits, continued

Name	Percentage of population (and Standard Deviation) who eats 5 or more servings of fruit and vegetable a day
Definition	Population who report eating 5 or more servings of fruits and vegetables a day expressed as percentage of all persons surveyed.
Case definition	An individual who consumes > 5 servings of fruit and vegetables
Calculation method	Number of people who eats more than 5 servings of fruit and vegetables/ total number of respondents of the survey including those who report eating 0 servings of fruits and vegetables.

Parameters	• Numerator: Number of people who eat more than 5 servings of fruit and vegetables
	• Denominator: Total number of respondents of the survey
	• Measurement unit: per 100
	• Type: rate
	• Categories:
	  o ADULT: Male, Female; ages 25-64 and by age group 25-34, 35-44, 45-54, 55-64
	  o ADOLESCENT: Male and Female; ages 13-15 years
	• Frequency of collection: every 3-5 years

Data sources	National or sub national risk factors surveys (STEPS, GSHS, GYTS)
Significance and rational	A diet of >5 servings of fruits and vegetables/day is proved to be a protective factor for development of any of chronic non communicable diseases, particularly coronary heart disease and certain types of cancer, including cancer of colon, rectum, oral cavity, pharynx, stomach, and esophagus. The percentage of population that eats 5 or more serving of fruit is useful information for developing programs to improve nutrition and dietary habits in the population and increase consumption of fruits and vegetables.

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Foods- vegetables and fruits, continued

Limitations of indicators and data sources	The indicator conveys the percentage of the adult population who report, on average consuming 5 or more servings of fruits and vegetables a day. Self reported sample surveys may be subjected to different type of errors resulting from non-coverage, non response or data weighting.

Physical Activity (adults)

Name

Proportion (and Standard Deviation) of the population of adults with low levels of physical activity (defined as <600 MET-minutes per week).

Definition

Population with low levels of physical activity expressed as percentage of all population surveyed.

The levels of activity are defined as:

- **High**

A person reaching any of the following criteria is classified in this category:

- vigorous-intensity activity on at least 3 days achieving a minimum of at least 1,500 MET-minutes/week OR
- 7 or more days of any combinations of walking, moderate- or vigorous-intensity activities achieving a minimum of at least 3,000 MET-minutes per week

- **Moderate**

A person not meeting the criteria for the "high" category, but meeting any of the following criteria is classified in this category:

- 3 or more days of vigorous-intensity activity of at least 20 minutes per day OR
- 5 or more days of moderate-intensity activity or walking of at least 30 minutes per day OR
- 5 or more days of any combination of walking, moderate- or vigorous-intensity activities achieving a minimum of at least 600 MET-minutes per week

- **Low**

A person not meeting any of the above mentioned criteria falls in this category

*Metabolic Equivalents (METs) are commonly used to express the intensity of physical activities. MET is the ratio of a person's working metabolic rate relative to their resting metabolic rate. One MET is defined as the energy cost of sitting quietly and is equivalent to a caloric consumption of 1kcal/kg/hour. For the calculation of this indicator the total time spent in physical activity during a typical week, the number of days as well as intensity of the physical activity are taken into account

Continued on the next page

Physical Activity (adults)

Case definition	An individual whose reported physical activity is < 600 MET-minutes
Calculation method	Number of people whose reported physical activity is < 600 MET minutes / total number of respondents of the survey
Parameters	• Numerator: Number of people whose reported physical activity is < 600 MET minutes • Denominator: Total number of respondents in the survey • Measurement unit: per 100 • Type: rate • Categories: Female, Male; ages 25-64 years and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	Obtained from National or sub national Risk factor studies using instrument G-PAC, or instruments that express the estimated levels of physical activity using continuous indicator as MET –minutes per week or time spent in physical activity
Significance and rational	Physical activity reduces the risk for heart disease, colon cancer, Stroke, type 2 diabetes and its complications, as well as for overweight, and osteoporosis. Information about the population with low levels of physical activity is used to implement policies and develop strategies to increase physical activity.
Limitations of indicators and data sources	The calculation of the MET minutes has to be done and it can lead to errors in measurement. As with all self reported sample surveys, data might be subject to error resulting from recall bias, non-coverage, non-response or inadequate data weighting

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Physical Activity (adults), continued

Name	Proportion (and Standard Deviation) of the population of adults with moderate levels of activity (defined as >600 MET-minuts-1500 Met-minutes).
Definition	Population with moderate levels of physical activity expressed as percentage of all population surveyed.
Case definition	An individual whose physical activity is >600 MET-minutes but less than 1500 MET minutes and is reported as follows: • 3 or more days of vigorous-intensity activity of at least 20 minutes per day OR • 5 or more days of moderate-intensity or walking of at least 30 minutes per day OR • 5 or more days of any combination of walking, moderate- or vigorous-intensity activities achieving a minimum of at least 600 MET-minutes per week. *Metabolic Equivalents (METs) are commonly used to express the intensity of physical activities. MET is the ratio of a person's working metabolic rate relative to their resting metabolic rate. One MET is defined as the energy cost of sitting quietly and is equivalent to a caloric consumption of 1kcal/kg/hour
Calculation method	Number of people whose physical activity is assessed as moderate (>600 MET-minutes but <1500 MET minutes) / total number of respondents in the survey
Parameters	• Numerator: Number of people whose physical activity is assessed as moderate (>600 MET-minutes but <1500 MET minutes) • Denominator: total number of respondents of the survey • Measurement unit: per 100 • Type: rate • Categories: Female. Male; ages 25-64 years and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years

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Physical Activity (adults), continued

Data sources	Obtained from National or sub risk factors surveys using instrument G-PAC (STEPS, GSHS), STEPS, or instruments that express the estimated levels of physical activity using continuous indicator as MET-minutes per week or time spent in physical activity.
Significance and rational	Physical activity reduces the risk for heart disease, colon cancer, stroke, Type 2 diabetes and its complications, overweight, and osteoporosis. Therefore information on levels of physical activity is important to develop strategies to increase physical activity among the population.
Limitations of indicators and data sources	The calculation of the MET minutes has to be done and it can lead to errors in measurement. As with all self reported sample surveys, data might be subject to error resulting from, recall bias, non-response or inadequate data weighing.

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Physical Activity (adults), continued

Name	Proportion (and Standard Deviation) of the population of adults with high levels of physical activity (defined as >1500 Met-minutes).
Definition	Population with high levels of physical activity expressed as percentage of all the population surveyed.
Case definition	Any person reaching any of the following criteria is classified in this category: • Vigorous-intensity activity on at least 3 days achieving a minimum of at least 1,500 MET-minutes/week OR • 7 or more days of any combinations of walking, moderate- or vigorous-intensity activities achieving a minimum of at least 3,000 MET-minutes per week *Metabolic Equivalents (METs) are commonly used to express the intensity of physical activities. MET is the ratio of a person's working metabolic rate relative to their resting metabolic rate. One MET is defined as the energy cost of sitting quietly and is equivalent to a caloric consumption of 1kcal/kg/hour
Calculation method	Number of persons whose physical activity is assessed as high / # of total survey respondents
Parameters	• Numerator: Number of respondents whose physical activity is assessed as high (≥ 1500 MET minutes) • Denominator: total number of respondents of the survey • Measurement unit: per 100 • Type: rate • Categories: Female. Male; ages 25-64 years and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	Obtained from National or sub national Risk factor studies using instrument G-PAC, (GSHS, STEPS) or instruments that express the estimated levels of physical activity using continuous indicator as MET-minutes per week or time spent in physical activity.

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Physical Activity (adults), continued

Significance and rational	Physical activity reduces the risk for heart disease, colon cancer, stroke, Type 2 diabetes and its complications, overweight, and osteoporosis. Therefore information on levels of physical activity is important to develop strategies to increase physical activity among the population.
Limitations of indicators and data sources	The calculation of the MET minutes has to be done and it can lead to errors in measurement. As with all self reported sample surveys, data might be subject to systematic error resulting from recall bias, non-response or inadequate data weighting

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Physical Activity (youth)

Name	Prevalence (and Standard Deviation) of physical inactivity among the youth
Definition	Young persons (13-15 years old) who report not having any type of physical activity for at least 60 minutes daily during the last 7 days
Case definition	A young individual whose physical activity is less than 60 minutes per day.
Calculation method	Number of young people who report **not having** any type of physical activity for at least 60 days minutes per day, every day during the last 7 days)/ total number of respondents of the survey
Parameters	• Numerator: Number of young persons who report **not having** any type of physical activity for at least 60 minutes per day, during the last 7 days) • Denominator: total number of respondents of the survey • Measurement unit: per 100 • Type: rate • Categories: Female, Male; ages 13-15 • Frequency of collection: every 3-5 years
Data sources	Obtained from National or sub national Risk factor studies (GYTS)
Significance and rational	Physical activity reduces the risk for heart disease, colon cancer, stroke, Type 2 diabetes and its complications, overweight, and osteoporosis. Therefore information on levels of physical activity is important to develop strategies to increase physical activity among youth.
Limitations of indicators and data sources	As with all self reported sample surveys, data might be subject to recall bias or, systematic error resulting from, non-response or inadequate data weighting

Blood pressure (systolic)

Name	Mean (and Standard Deviation) of systolic Blood pressure in the population
Definition	Average of the systolic blood pressure levels in the surveyed population
Case definition	level of systolic blood pressure
Calculation method	Sum of all the measurements of systolic blood pressure / total number of respondents who had their blood pressure measured
Parameters	• Numerator: Sum of all the measurement of systolic blood pressure • Denominator: Total number of respondents who had their blood pressure measured • Measurement unit: per 100 • Type: Mean and SD • Categories: Female, Male; ages 25 -64 and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5
Data sources	National of sub national risk factors survey (STEPS or similar)
Significance and rational	Blood Pressure control among adults is important in preventing or delaying the onset or progression of Hypertensive disease and its complications (e.g., cardiovascular disease, stroke, and end-stage renal disease). Systolic BP is a reliable marker of age-related vascular target organ damage therefore the mean level of systolic pressure provides valuable information for assessment of BP control programs in population. It is also useful for comparing trends and track changes in the population over time.
Limitations of indicators and data sources	Data might be subject to measurement errors.

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Blood Pressure (diastolic)

Name	Mean (and Standard Deviation) of diastolic Blood pressure in the population
Definition	Average of the diastolic blood pressure measured in the surveyed population
Case definition	Level of diastolic blood pressure
Calculation method	Sum of all the measurement of diastolic blood pressure / total number of adult respondents who had their blood pressure measured
Parameters	• Numerator: Sum of all the measurements of diastolic blood pressure • Denominator: total Number of respondents who had their blood pressure measured in the study • Measurement unit: per 100 • Type: Mean and SD • Categories: Female, Male; ages 25-64 and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	National of sub national risk factors survey (STEPS or similar)
Significance and rational	Blood Pressure control among adults is important in preventing or delaying the onset or progression of Hypertensive disease and its complications (e.g., cardiovascular disease, stroke, and end-stage renal disease).
Limitations of indicators and data sources	Data might be subject to measurement errors.

Blood Glucose

Name	Mean (and Standard Deviation) of Blood glucose in the population
Definition	Average of the levels of blood glucose measured in the surveyed population
Case definition	Level of blood glucose
Calculation method	Sum of all the levels of blood glucose in the study population / total number of adult respondents who had their blood glucose checked
Parameters	• Numerator: Sum of all the levels of blood glucose in the study population • Denominator: Total number of respondents who had their blood glucose checked • Measurement unit: per 100 • Type: Mean and SD • Categories: Female, Male; ages 25-64 and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	National of sub national risk factors survey (STEPS or similar)
Significance and rational	Glycemic control among adults is important in preventing or delaying the onset or progression of diabetes and diabetes related complications (e.g., retinopathy, lower extremity amputations, and end-stage renal disease). A mean blood glucose level is useful to provide information about the level in the population and support the development of programs to improve management of blood glucose levels.
Limitations of indicators and data sources	Data might be subject to error resulting from measurement or variation depending on the test and the method used.

Body Mass Index (BMI)

Name	Median (and Standard Deviation) of BMI in the population
Definition	**M**easure of central tendency for BMI that divides the distribution of surveyed population in two equal parts.
Case definition	Level of BMI
Calculation method	Arrange the levels of BMI in order according to the heir value on a measurement scale. If n is an odd number the median will be the value corresponding to the middle observation . If n is the even number the median will be the average of the two middle BMIs.
Parameters	• Type: Median • Categories: Female, Male; ages 25-64 and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	National of sub national risk factors survey (STEPS or similar)
Significance and rational	BMI is a derived indicator from Weight in Kilograms/ height in meters² or Weight in pounds * 703/height in inches² and it is one of the most common measures to classify overweight (BMI 25.0 -29.0)and obesity (BMI 30.0 and more). The median BMI for an adult population should be in the range of 21 to 23 kg/m^2. The Prevalence of obesity has been increasing in the Region of the Americas and obesity increases the risk for multiple chronic diseases, including heart disease, stroke, and hypertension, type 2 diabetes etc. It is important to follow trends of Median BMI in population so preventive programs are intensified.

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Body Mass Index (BMI), continued

Limitations of indicators and data sources	If not measured but used self reported data to assess BMI, this might be subject to errors and has limitations as respondents tend to overestimate their height and underestimate their weight, leading to underestimation of BMI and of the prevalence of overweight. Additionally for data analysis, appropriated data weighting needs to be done when there is not a 100% coverage/response, and errors due to measurement should also be considered.

Anthropometric measurements (waist circumference)

Name	Mean (and Standard Deviation) of Waist Circumference in the population
Definition	Waist circumference average in the surveyed population. Waist circumference is an approximate index of intra-abdominal fat mass and total body fat.
Case definition	Size of Waist circumference
Calculation method	Sum of all the levels of waist circumference in the studied population /total number of adult respondents who had their waist circumference measured
Parameters	• Numerator: Sum of all the waist circumferences in the studied population • Denominator: Total number of respondents whose waist circumference was measured • Measurement unit: per 100 • Type: Mean and SD • Categories: Female, Male; ages 25-64 and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	National of sub national risk factors survey (STEPS or similar)
Significance and rational	Changes in waist circumference reflect changes in risk factors for cardiovascular disease and other forms of chronic diseases. Waist circumference is more powerful determinant of subsequent risk of type 2 diabetes than BMI.

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SECTION IV: Health System Performance Indicators

Health Insurance (private/social)

Name	Health insurance coverage
Definition	Percentage of population who report having any kind of health insurance
Case definition	An individual who has any kind of health insurance. Please specify percentage of people who have social insurance, private insurance and prepaid plans
Calculation method	Number of people who has any kind of health insurance / Midyear resident population
Parameters	• Numerator: Number of people who have any kind of health insurance • Denominator: Midyear resident population • Measurement unit: per 100 • Type: rate • Categories: Female. Male; ages 25 -64 and older, groups by age 25-34, 35-44, 45-54, 55-64 • Frequency of collection: annual
Data sources	Obtained from National or sub national studies or health insurance data
Significance and rational	Lack of health insurance remains a major determinant of access to necessary health services, including preventive health care in many countries.. Certain socioeconomic conditions, including a lack of health insurance coverage and poverty, are associated with poor health status and chronic disease. This information can be used to develop strategies to increase health insurance coverage in the population or detect sections of the population who may be at risk.

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Health Insurance (private/social), continued

Limitations of indicators and data sources

Coverage for health care procedures and services can vary across insurance and other health plans. Required payments and copayments by patients can vary across insurance and other health plans, thereby affecting the financial ability of patients to receive services.

Because individual persons might move in and out of health insurance, this indicator might underestimate the prevalence of a lack of health insurance.

Self reported sample surveys, data might be subject to errors resulting from non appropriate data weighting

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Health Insurance (private/social), continued

Name	Population covered by social health insurance
Definition	Percentage of population who have social health insurance
Case definition	An individual whose financing of health care costs are through a (government-mandated) social insurance program
Calculation method	Number of people who have any kind social health insurance / Midyear resident population
Parameters	• Numerator: Number of people who have social health insurance • Denominator: Midyear resident population • Measurement unit: per 100 • Type: rate • Categories: Female. Male; ages 25 and older, groups by age 25-34, 35-44, 45-54, 55-64 • Frequency of collection: annual
Data sources	Obtained from National or sub national health accounts
Significance and rational	Lack of insurance remains a major determinant of access to necessary health services, including preventive care. People covered by social health insurance have access to the services that are included in the nationally defined, benefit package therefore this information can be used to develop strategies to increase health insurance coverage in the population and quality of care in the population that is already covered

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Health Insurance (private/social), continued

Limitations of indicators and data sources	Covered health care procedures and services can vary across different types of insurances and other health plans affecting the financial ability of patients to receive services and although in social Health insurance there is a predefined benefit package and the financing health care costs are defined through the government, variability can exist Because social health insurance has difficulties covering workers in the informal sector until the country has reached a high level of economic development, and individual persons might move in and out of health insurance, this indicator might underestimate the prevalence of a lack of social health insurance.

Women's preventive care (pap smear/ mammograms)

Name	Pap smear among women within the last 3 years
Definition	Female population who report having ever had a Pap smear within the last 3 years expressed as percentage of all female population screened.
Case definition	A woman who has had a Pap test performed within the last 3 years.
Calculation method	Number of female Respondents who report having ever had a Pap test in the last 3 years / total number of female respondents
Parameters	• Numerator: Number of Female respondents who report having ever had a Pap test within the last 3 years • Denominator: Total number of female respondents in the survey • Measurement unit: per 100 • Type: rate • Categories: Female, ages 25-64 and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	National of sub national risk factors surveys (STEPS or similar)
Significance and rational	Cervical cancer is one of the leading causes of death among women in the region of the Americas. It is estimated that in Latin America and the Caribbean the incidence rate of cervical cancer is between 28,6-32,6/100,000 and the mortality rate is between 12.9-16/100,000. Approximately 40-60% of cervical cancer deaths can be prevented by increased use of the Pap test and effective, timely treatment. Therefore it is important to develop initiatives and programs to increase the proportion of women who undergo screening for cervical cancer.
Limitations of indicators and data sources	Recommendation for screening age groups and frequency varies by country, depending of capacity of health care system to perform screening as well as of distribution of risk groups. As with all self reported sample surveys, data might be subject to error resulting from non-response or inadequate data weighting

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Women's preventive care (pap smear/mammogram), continued

Name	Mammogram use among women between 45-64 years
Definition	Female population between 45-64 years who report having ever had a mammogram expressed as percentage of all female population surveyed.
Case definition	A woman between 45-64 years old who has ever had a mammogram
Calculation method	Number of female respondents 45-64 years old who report having ever had a mammogram / # of total female respondents between 50-64 years old
Parameters	• Numerator: Number of female respondents 45-64 years who report having ever had a mammogram • Denominator: Total number of female Respondents between 45-64years old • Measurement unit: per 100 • Type: rate • Categories: Female; ages 45-64 and by age groups 45-54, 55-64. • Frequency of collection: every 3-5 years
Data sources	National or sub national risk factors surveys, or disease specific register (STEPS)
Significance and rational	Breast cancer is the most common cancer among women. Mammography screening with or without clinical breast examination can reduce breast cancer deaths by 16% in women aged >40 years, risk reduction is greater among women aged >50 therefore it is useful to keep track of the trends in the percentage of women that undergo screening for breast cancer
Limitations of indicators and data sources	Recommendations for mammography screening of age groups and frequency varies by country, depending of capacity of health care system to perform screening as well as of distribution of risk groups. As with all self reported sample surveys, data might be subject to errors resulting from, non-response or inadequate data weighting

Adults' preventive care (blood pressure, blood sugar, diabetes, cholesterol)

Name	Blood pressure control among adults
Definition	Population who report having their blood pressure checked within the previous year expressed as percentage of population surveyed.
Case definition	An individual who reports having had his/her blood pressure checked within the previous year
Calculation method	Number of adult respondents who report having ever had his/her blood Pressure checked / total number of adult respondents
Parameters	• Numerator: Number of respondents who report having had his/her blood Pressure checked during the last year • Denominator: Total number of respondents of the survey • Measurement unit: per 100 • Type: rate • Categories: Female, Male; ages 25 and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	National of sub national studies/reports done by NGOs or other partners
Significance and rational	Blood Pressure control among adults is important in preventing or delaying the onset or progression of Hypertensive disease and its complications (e.g., cardiovascular disease, stroke, and end-stage renal disease).
Use	Develop programs to increase screening activities on Hypertension detection
Limitations of indicators and data sources	As with all self reported sample surveys, data might be subject to errors resulting from non-response or inadequate measurement.

Continued on the next page

Adults' preventive care (blood pressure, blood sugar, diabetes, cholesterol), continued

Name	Blood glucose check up among adults
Definition	Population who report having their blood glucose checked within the previous year expressed as percentage of all population surveyed.
Case definition	An individual who reports having had his/her blood glucose checked within the previous year
Calculation method	Number of adult respondents who report having ever had his/her blood glucose checked / total number of adult respondents
Parameters	• Numerator: Number of respondents who report having had his/her blood glucose checked during the last year • Denominator: Total number of respondents of the survey • Measurement unit: per 100 • Type: rate • Categories: Female, Male; ages 25-64 and by age group 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	National of sub national studies/reports done by NGOs or other partners
Significance and rational	Glycemic control among adults is important in preventing or delaying the onset or progression of metabolic syndrome, diabetes or diabetes -related complications (e.g., retinopathy, lower extremity amputations, and end-stage renal disease). Monitoring of blood glucose can assist to develop programs to increase the proportion of adults that undergo blood glucose check up.
Limitations of indicators and data sources	The reliability and validity of this indicator is unknown. As with all self reported sample surveys, data might be subject to systematic error resulting from, non-response or inadequate measurement and data weighting

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Adults' preventive care (blood pressure, blood sugar, diabetes, cholesterol), continued

Name	Cholesterol check up among adults
Definition	Population who report having their cholesterol checked within the previous year expressed as percentage of population surveyed
Case definition	An individual who reports having had his/her cholesterol checked within the previous year
Calculation method	Number of adult Respondents who report having had his/her cholesterol checked within 1 year / total number of adult respondents
Parameters	• Numerator: Number of respondents who report having had a blood cholesterol examination during the last year • Denominator: Total number of respondents of the survey • Measurement unit: per 100 • Type: rate • Categories: Female, Male; ages 25-64 and by age groups 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	National of sub national studies/reports done by NGOs or other partners
Significance and rational	Although rates of cholesterol check ups have increased, there are still a large percentage of adults that have not had it. Elevated levels of serum cholesterol can lead to development of atherosclerosis. Approximately 30 -40% of coronary heart disease and 10-20% of strokes are attributable to elevated serum cholesterol. Elevated serum cholesterol has been associated with physical inactivity, high fat intake, smoking cigarettes, diabetes, and obesity. Lifestyles changes and medications can reduce cholesterol and prevent heart disease among persons with elevated serum cholesterol .The information obtained in this indicators can be used to develop programs to increase the proportion of adults that undergo blood cholesterol check up.

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Adults' preventive care (blood pressure, blood sugar, diabetes, cholesterol), continued

Limitations of indicators and data sources

Validity and reliability of this indicator can be low because patients might not be aware of specific tests conducted on their blood samples collected in clinical settings.

As with all self reported sample surveys, data might be subject to systematic error resulting from, non-response or inadequate measurement.

Continued on the next page

Adults' preventive care (blood pressure, blood sugar, diabetes, cholesterol), continued

Name	Eye examination among adults with diabetes
Definition	Population of diabetics who report having received at least one clinical eye examination within the previous year expressed as percentage of diabetics in the population surveyed.
Case definition	An individual with diabetes who report having a clinical eye examination during the last year
Calculation method	Number of people who report to have had an eye examination within the previous year / total number of respondents who report being diabetics
Parameters	• Numerator: Number of people who report being diabetics and have had a clinical eye examination within the previous year • Denominator: Total number of respondents who report being diabetics • Measurement unit: per 100 • Type: rate • Categories: Female. Male; ages 25-64 and by age groups 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	Obtained from National or sub risk factors surveys (STEPS or similar)
Significance and rational	Persons with diabetes are at increased risk for blindness as a result of retinopathy. Diabetes is the leading cause of new cases of blindness among adults aged 20–74 years. This indicator is useful for developing strategies and prevention programs to increase quality of care among adults with diabetes.
Limitations of indicators and data sources	The reliability and validity of the indicator are unknown As with all self reported sample surveys, data might be subject to systematic error resulting from, non-response or inadequate data collection.

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Adults' preventive care (blood pressure, blood sugar, diabetes, cholesterol), continued

Name	Foot examination among adults with diabetes
Definition	Population of diabetics who report having received at least one clinical foot examination within the previous year expressed as percentage of population surveyed who are diabetics.
Case definition	A person with diabetes who has had a clinical foot examination during the last year
Calculation method	Number of people who are diabetics and have had a clinical foot examination within the previous year / Number of total respondents with diabetes
Parameters	• Numerator: Number of people with diabetes who report having had a clinical foot examination within the previous year • Denominator: Total number of respondents who have diabetes • Measurement unit: per 100 • Type: rate • Categories: Female. Male; ages 25-64and by age groups 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	Obtained from National or sub risk factors surveys (STEPS)
Significance and rational	People with diabetes are at increased risk for vascular peripheral complications that cause pathologic changes of their lower extremities that, when combined with minor trauma and infection, can lead to serious foot problems, including amputation. Routine and periodic foot examination can enable early detection of peripheral vascular complications. Diabetes is the leading cause of non-traumatic amputation and observing the trends in the percentage of amputations can help to develop strategies and prevention programs to increase clinical foot examination among adults with diabetes
Limitations of indicators and data sources	The reliability and validity of the indicator are not well known. Self reported sample surveys, data might be subject to error resulting from non-coverage/ inappropriate data weighting.

Hospital Discharges diagnoses (CVDs, stroke, COPD, diabetes and complications)

Name	Hospital discharge with diagnosis of Acute Myocardial infarction (ICD10 I21-I220
Definition	Hospitalized **c**ases with a principal diagnosis expressed as percentage of all hospitalization in the given year.
Case definition	Hospital discharge with a diagnosis of Myocardial infarction during the last year
Calculation method	Number of cases discharged from the hospital with a diagnosis of Myocardial infarction during the last year / total number of hospitalizations during a given year
Parameters	• Numerator: Number of cases discharged from the hospital with a diagnosis of Myocardial infarction during a given year • Denominator: • Measurement unit: per 100 • Type: rate • Categories: Female. Male; ages 25-64 and by age groups 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	Hospital registries
Significance and rational	Substantial differences in CHD death rates and preventive measures exist by race, age, sex, place of residence, and other demographic factors therefore records from hospitalizations can help to keep track of high risk groups as well as to identify success of preventive programs and PHC interventions aimed to control and reduce hospitalizations due to Coronary heart disease.

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Hospital Discharges diagnoses (CVDs, stroke, COPD, diabetes and complications), continued

Limitations of indicators and data sources

Substantial numbers of persons with acute myocardial infarction die before reaching a hospital. Because heart disease is a chronic disease that can have a long preclinical phase, years might pass before changes in behavior or clinical practice affect population morbidity and mortality. A substantial number of misdiagnoses, particularly among women, have been reported.

Diagnoses listed on hospital discharge data might be inaccurate. Practice patterns and payment mechanisms can affect decisions by health-care providers to hospitalize patients. Multiple admissions for an individual patient can falsely elevate the number of persons hospitalized. Because state hospital discharge data are not universally available, aggregation of state data to produce nationwide estimates will be incomplete.

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Hospital Discharges diagnoses (CVDs, stroke, COPD, diabetes and complications), continued

Name	Average Length of Stay in Hospital Because of Myocardial Infarction (MI) (ICD10 I21-I22)
Definition	Mean of hospital day bed occupancy in a given year with cases of Myocardial Infarction (MI)
Case definition	Hospital stay because of MI
Calculation method	Sum of all the bed days in use by cases of MI in a given year / number of cases of MI discharged in a given year.
Parameters	• Numerator: Sum of all the bed day in use by cases of MI in a given year • Denominator: number of cases of MI discharged in a given year. • Measurement unit: per 100 • Type: average/mean • Categories: female, male; ages 25-64 and by age groups 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	Hospital registries
Significance and rational	Hospital bed utilization can be assessed through admission rates, length of stay and bed day use for inpatients. Following trends of average length of stay due to MI contributes to the assessment of overall performance, resource utilization and can support resource planning.

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Hospital Discharges diagnoses (CVDs, stroke, COPD, diabetes and complications)

Name	Hospital discharge with diagnosis of stroke (ICD10 I60-I69)
Definition	Hospitalized **c**ases with a diagnosis of stroke expressed as percentage of all hospitalization in the given year.
Case definition	Hospital cases discharged with a diagnosis of stroke during the last year.
Calculation method	Number of hospital cases discharged with a diagnosis of stroke during the last year / total number of cases hospitalized in a given year
Parameters	• Numerator: Number of hospital cases discharged from the hospital with a diagnosis of stroke in a given year • Denominator: total number of cases hospitalized in a given year • Measurement unit: per 100 • Type: rate • Categories: Female. Male; ages 25-64 and by age groups 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	Hospital registries
Significance and rational	Substantial differences in CHD death rates and preventive measures exist by race, age, sex, place of residence, and other demographic factors therefore records from hospitalizations can help to keep track of high risk groups as well as of success of preventive programs and PHC interventions aimed to control and reduce hospitalizations due to Coronary heart disease.

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Hospital Discharges diagnoses (CVDs, stroke, COPD, diabetes and complications), continued

Limitations of indicators and data sources

Substantial numbers of persons with acute stroke die before reaching a hospital. Although the two major types of stroke — hemorrhagic (approximately 10% of stroke) and ischemic (approximately 65% of stroke share certain risk factors, their treatment varies. It is important to notice that distinction because it can lead to coding errors.

Diagnoses listed on hospital discharge data might be inaccurate. Practice patterns and payment mechanisms can affect decisions by health-care providers to hospitalize patients. Multiple admissions for an individual patient can falsely elevate the number of persons hospitalized. Because state hospital discharge data are not universally available, aggregation of state data to produce nationwide estimates will be incomplete

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Hospital Discharges diagnoses (CVDs, stroke, COPD, diabetes and complications), continued

Name	Average Length of Stay in Hospital Because of Stroke (ICD10 I60-I69)
Definition	Mean of hospital day bed occupancy in a given year with cases of Stroke
Case definition	Hospital stay because of stroke
Calculation method	Sum of all the bed days in use by cases of stroke in a given year / number of cases of stroke discharged in a given year.
Parameters	• Numerator: Sum of all the bed day in use by cases of stroke in a given year • Denominator: number of cases of stroke discharged in a given year. • Measurement unit: per 100 • Type: average/mean • Categories: female, male; ages 25-64 and by age groups 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	Hospital registries
Significance and rational	Hospital bed utilization can be assessed through admission rates, length of stay and bed day use for inpatients. Following trends of average length of stay due to stroke contributes to the assessment of overall performance, resource utilization and can support resource planning.

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Hospital Discharges diagnoses (CVDs, stroke, COPD, diabetes and complications), continued

Name	Hospital discharge with diagnosis of COPD (ICD10 J40-J47)
Definition	Hospital cases with a principal diagnosis of COPD expressed as part of overall hospitalization in the given year
Case definition	Hospital case discharged with a principal diagnosis of COPD during the last year.
Calculation method	# of case who have been discharged from the hospital with a diagnosis of COPD during a giving year/ total number of cases hospitalized during a given year
Parameters	• Numerator: Number of cases discharged from the hospital with a diagnosis of COPD during a given year • Denominator: Total number of cases hospitalized during a given year • Measurement unit: per 100 • Type: rate • Categories: Female, Male; ages 25-64 and by age groups 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	Hospital registries
Significance and rational	Mortality from COPD has increased by 40% in the past 2 decades. Elimination of tobacco use is the most effective way to reduce COPD because approximately 90% of COPD is attributable to smoking. Other risk factors for COPD include occupational exposure and ambient air pollution if preventive programs are developed to modify risk factors it should be possible to see a decrease in the amount of hospitalizations.

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Hospital Discharges diagnoses (CVDs, stroke, COPD, diabetes and complications), continued

Limitations of indicators and data sources	Diagnoses listed on hospital discharge data might be inaccurate. Practice patterns and payment mechanisms could affect decisions by health-care providers to hospitalize patients. Multiple admissions for an individual patient can falsely elevate the number of persons hospitalized. Because state hospital discharge data are not universally available, aggregation of state data to produce nationwide estimates will be incomplete.

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Hospital Discharges diagnoses (CVDs, stroke, COPD, diabetes and complications), continued

Name	Average Length of Stay in Hospital Because of COPD (ICD10 J40-J47)
Definition	Mean of hospital day bed occupancy in a given year with cases of COPD
Case definition	Hospital stay because of COPD
Calculation method	Sum of all the bed days in use by cases of COPD in a given year / number of cases of COPD discharged in a given year.
Parameters	• Numerator: Sum of all the bed day in use by cases of COPD in a given year • Denominator: number of cases of COPD discharged in a given year. • Measurement unit: per 100 • Type: average/mean • Categories: female, male; ages 25-64 and by age groups 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	Hospital registries
Significance and rational	Hospital bed utilization can be assessed through admission rates, length of stay and bed day use for inpatients. Following trends of average length of stay due to COPD contributes to the assessment of overall performance, resource utilization and can support resource planning.

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Hospital Discharges diagnoses (CVDs, stroke, COPD, diabetes and complications), continued

Name	Hospital discharge with diabetes (ICD10 E10-14)
Definition	Hospitalized cases with a principal or contributing diagnosis of diabetes during a given year
Case definition	A case discharged from the hospital with a diagnosis of diabetes during the a given year
Calculation method	Number of hospitalizations with a principal or contributing diagnosis of diabetes during the last year / total number of hospitalizations during a given year
Parameters	• Numerator: Number of people Hospitalized with a principal or contributing diagnosis of International Classification of Diseases during a given year • Denominator: Total number of cases hospitalized during the last year • Measurement unit: per 100 • Type: rate • Categories: Female. Male; ages 25-64 and by age groups 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	Hospital registries
Significance and rational	Long-term complications of diabetes requiring hospitalization can be prevented through glucose, lipid, and blood pressure regulation, as well as screening and treatment for eye, foot, and kidney abnormalities. Patient education, self-management, and medical care can prevent complications. Therefore this indicator can be used to guide programs that promote screening, preventive and management services to reduce hospitalizations due to diabetes

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Hospital Discharges diagnoses (CVDs, stroke, COPD, diabetes and complications), continued

Limitations of indicators and data sources

Approximately one third of cases of diabetes are undiagnosed and years might pass before improvements in patient self-management and clinical practice affect diabetes-related hospitalization rates

Diagnoses listed on hospital discharge data might be inaccurate. Practice patterns and payment mechanisms might affect decisions by health-care providers to hospitalize patients. Multiple admissions for one person might falsely elevate the number of persons hospitalized. Because no universal availability of state hospital discharge data exists, aggregation of state data to produce nationwide estimates will be incomplete.

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Hospital Discharges diagnoses (CVDs, stroke, COPD, diabetes and complications), continued

Name	Amputations among adults with diabetes
Definition	Number of amputations within the previous year expressed as percentage of all diabetics
Case definition	An amputation due to diabetic complications during the last year
Calculation method	Number of amputations with underlying cause of diabetes within the previous year / total number of population diagnosed with diabetes
Parameters	• Numerator: Number of amputations with underlying cause of diabetes within the previous year • Denominator: Total number of population diagnosed with diabetes • Measurement unit: per 100 • Type: rate • Categories: Female. Male; ages 25-64 and by age groups 25-34, 35-44, 45-54, 55-64 • Frequency of collection: annual
Data sources	Obtained from hospital registries or disease specific registries
Significance and rational	Persons with diabetes are at increased risk for pathologic changes of their lower extremities that, when combined with minor trauma and infection, can lead to serious foot problems, including amputation. Routine and periodic foot examination can enable early detection of peripheral vascular complications. Diabetes is the leading cause of no traumatic amputation so it is important to keep track of the percentage to improve disease management and decrease the number of amputations
Limitations of indicators and data sources	The reliability and validity of the indicator are unknown as with all self reported sample surveys, data might be subject to error resulting from, non-response or inadequate data weighting

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Hospital Discharges diagnoses (CVDs, stroke, COPD, diabetes and complications), continued

Name	Percentage of persons on dialysis among persons with diabetes in a given year
Definition	Number of **persons on dialysis** within the previous year expressed as percentage of all diabetics.
Case definition	Dialyses due to diabetic complications during the last year
Calculation method	Number of dialysis cases with underlying cause of diabetes within the previous year / total number of population diagnosed with diabetes
Parameters	• Numerator: Number of dialysis cases with underlying cause of diabetes within the previous year • Denominator: Total number of population diagnosed with diabetes • Measurement unit: per 100 • Type: rate • Categories: Female. Male; ages 25-64 and by age groups 25-34, 35-44, 45-54, 55-64 • Frequency of collection: annual
Data sources	Obtained from hospital registries or disease specific registries
Significance and rational	Persons with badly managed diabetes are at increased risk for kidney failure. Diabetes is the leading cause of dialysis in many counties in the Region, and severe economic burden for the country economy, so it is important to keep track of the percentage to improve disease management and decrease the number of dialysis due to diabetes.
Limitations of indicators and data sources	The reliability and validity of the indicator are unknown as with all self reported sample surveys, data might be subject to error resulting from, non-response or inadequate data weighting

Private Health Care

Name	Geographic accessibility of PHC
Definition	Population who report having a PHC unit reachable in 60 minutes expressed as percentage of all the population surveyed.
Case definition	An individual who reports having a PHC unit reachable in 60 minutes (either by car or walking)
Calculation method	Number of people who reports having a PHC unit reachable in 60 minutes / Midyear resident population
Parameters	• Numerator: Number of people who reports having a PHC unit reachable in 60 minutes • Denominator: Midyear resident population • Measurement unit: per 100 • Type: rate • Categories: Female. Male; age 25 years and older, by age groups 25-34, 35-44, 45-54, 55-64 • Frequency of collection: every 3-5 years
Data sources	Obtained from National or sub national studies
Significance and rational	Geographic location of PHC unit is considered to be one of the indicators that has influence and partly determines the access to necessary health services, including preventive care. It is associated with poor health status and chronic disease. Therefore it is important to develop strategies to increase access to PHC in the population
Limitations of indicators and data sources	This indicator does not include other factors related to access to PHC as health insurance coverage.

Socioeconomic and context indicators:

- **Total population. (Male/female ratio):** Total population usually includes all residents regardless of legal status or citizenship. It does not include refugees who are not permanently settled in the country of asylum (these are generally considered to be part of the population of their country of origin).
Population estimates are usually based on national population censuses and revised (in-between) censuses which have data on births, deaths and migration. This indicator is indispensable for calculating per capita indicators. It is important to notice that estimation errors of up to 5 percent may be observed for countries with infrequent, and/or incomplete censuses and poor registration systems for births, deaths, and migration.

- **Urban Population:** This is the ratio of the total population that lives within "urban agglomerations" and it is expressed as a percentage of the total population. The urban and rural population are counted in national population censuses, or estimated through surveys. Between these operations, estimates are often updated through projections based on the respective growth rates previously observed for urban and rural populations. This indicator gives important information through time of how the country population shifts to the urban way of life and related economic set-up (declining share of agriculture, increasing share of industry and services). Urbanization is considered to be one of the key drivers for the changes regarding burden of diseases, environmental and behavioral influences on the adoption of new dietary habits, a sedentary lifestyle, as well as consumption of alcohol and tobacco and in that way influence rising prevalence of risk factors fro NCDs.

- **Gross national income:** It comprises the total value produced within a country (i.e. its Gross Domestic Product), together with its income received from other countries (notably interest and dividends), less similar payments made to other countries. This information is useful and the main criteria for classifying economies It provides a rough measure of annual national income per person in different countries. Countries that have a sizable modern industrial sector have a much higher GNI per capita than countries that are less developed

- **Population below poverty line;** The percentage of the population (rural or urban) living below the national (rural or urban) poverty line. The poverty line is a threshold figure usually defined by the World Bank as 1 US$ a day below which a percentage of population is considered poor. Although different countries have different definitions of poverty. It is well-documented that people who live in poverty suffer from a higher incidence of chronic illness including diabetes, heart disease and hypertension. It is essential that all sectors take responsibility for reducing poverty including public policy action at all levels of government.

- **Income ratio (highest 20%/lowest 20%):** GNP/capita is only a crude measure of average income in a country most notably because the distribution of income within a country is never equal. This information can be used to compare the ratio of income in one country to the world mean and measure international inequality, (inequality between nations, commonly measured by comparing GNP/capita). This can not only affect the access to health care and quality of services provided but also it can also affect the asses to services and affordability of selected essential medicines for chronic diseases**.** This information can be obtained from the World bank data

A Healthy diet is important to prevent obesity and several chronic diseases such as Diabetes and Cardiovascular diseases etc. It is known that agricultural policy and production often have a great effect on national diets. Therefore, governments can influence agricultural production through many policy measures. Countries need to take healthy nutrition into account in their agricultural policies**.**

- **Production of fruits**: Fruits are very important for a healthy diet and it is important to increase and assure its availability and production**.** Fruits also have a vital role in income and employment generation and diversification of agricultural production systems. Policy and other implications related to increasing fruit and vegetable production and consumption should be considered i.e. provision of inputs, production incentives, capacity building, marketing infrastructure and trade. It can be expressed in the % of global market share in the world or in metric tonnes (thousands).Metric tonnes are preferred and information can be obtained from the national statistics from various ministries/international sources as FAO

- **Import of fruits:** The fruit industries in many Latin American & Caribbean countries have continued to expand. Fruits and vegetables are very important to ensure nutritional and overall wellbeing, and decrease the risk for chronic diseases. For governments it is important to increase and assure fruits and vegetables availability thought the year, independently of the season. In countries where production is not enough to cover the requirements of the population, imports can be an important source to increase availability and variety among the population. It can be expressed as Quantity, Unit value or Value. Quantity (Metric tonnes) is preferred and information can be obtained from the national statistics from various ministries/international sources as FAO

- **Export of fruits:** Agricultural resources and specifically production of fruits and vegetables are an important part of the World's economy since a large portion of the agricultural production derives from the fruits and vegetables sector. Fruit exports volumes have grown enormously and there is an effort to expand and diversify fruit and vegetables availability for consumption. In countries where production is limited (i.e. due to season changes) exports are especially important to assure availability and variety among the population. It can be expressed as Quantity, Unit value or Value. Quantity (Metric tonnes) is preferred and information can be obtained from the national statistics from various ministries/international sources as FAO

- **Production of Vegetables:** Vegetables are very important for a healthy diet and it is important to increase and assure its availability and production**.** Vegetables also have a vital role in income and employment generation and diversification of agricultural production systems. Policy and other implications related to increasing fruit and vegetable production and consumption should be considered i.e. provision of inputs, production incentives, capacity building, marketing infrastructure and trade. It can be expressed in the % of global market share in the world or in metric tonnes (thousands).Metric tonnes are preferred and information can be obtained from the national statistics from various ministries/international sources as FAO

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(Metric tonnes) is preferred and information can be obtained from the national statistics from various ministries/international sources as FAO.

- **Export of Vegetables:** Trade is a very important part of the economy. The Vegetable industry in many Latin American and Caribbean countries has continued to expand Vegetables exports volumes have grown enormously and there is an effort to expand and diversify fruit and vegetables availability for consumption. In countries where production is limited (i.e. due to season changes) exports are especially important to assure availability and variety among the population. It can be expressed as Quantity, Unit value or Value. Quantity (Metric tonnes) is preferred and information can be obtained from the national statistics from various ministries/international sources as FAO

- **Production of Alcohol:** To prevent alcohol medical and social related problems, it is important to have a clear view of their magnitude. Estimates of per capita consumption of alcohol across the national populations can provide policy makes with valuable information of the magnitude of the problem and trends. Therefore, adult per capita consumption estimates are very useful for planning and assessment of public health policies related to alcohol and in order to be able to calculate Annual per capita consumption, information on alcohol production, alcohol imports and alcohol exports is required. As developed countries maintain high barriers regarding alcohol trade to influence the decline in consumption, there is an intensified effort for establishment of new markets in developing countries and countries in transition. This info can be expressed as Quantity, Unit value or Value. Quantity (Metric tonnes) is preferred and information can be obtained from the national statistics from various ministries/international sources as FAO

- **Import & export of alcohol** Only approximately 10 per cent of alcoholic beverage production enters into International trade. The bulk of that trade occurs between developed countries, and thus alcohol sales generally add little to developing country export earnings. The largest importing and exporting countries are all developed nations. Products and profits in the international alcohol trade thus flow primarily into the developed countries and countries in transition. It can be expressed as Quantity, Unit value or Value. Quantity (Metric tonnes) is preferred and information can be obtained from the national statistics from various ministries/international sources as FAO

- **Production of tobacco:** Tobacco is associated with several diseases such as: Cancer of the lung, bladder, larynx, non cancerous respiratory diseases, cardiovascular diseases and some others. It is one of the most preventable sources of mobility and mortality. Total tobacco consumption can be useful for gauging the size of a tobacco market (Total tobacco consumption = production + imports-exports) and it is useful information to follow the trends and promote health policy to regulate industry and decrease consumption. Although crop substitution is often proposed as a means to reduce the tobacco supply, currently the incentives to farmers to grow tobacco are currently much greater than for most other crops. However, it may be a useful strategy where needed to aid the poorest tobacco farmers in transition to other livelihoods, as part of a broader diversification program**.** Metric tonnes are preferred and information can be obtained from the national statistics from various ministries/international sources as FAO

- **Import & export of tobacco:** Tobacco trade is a big business, for both the raw material (tobacco leaves) and the finished product (manufactured cigarettes) The developing countries are expected to further increase their share in world tobacco production, according to the UN report (Rome, 2003).. It can be expressed as Quantity, Unit value or Value. Quantity (Metric tonnes) is

preferred and information can be obtained from the national statistics from various ministries/international sources as FAO