



## Compendium of Indicators for Monitoring Regional and Global Noncommunicable Disease Response in the Americas



*Guidance and Specifications on Construction of Core and Expanded List of Recommended Indicators for Chronic Noncommunicable Diseases and Injuries*

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**Annex 1: External Peer Reviewers for Compendium**

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*Disclaimer*

*This Compendium contains a series of regionally and globally approved indicators and recommendations for national noncommunicable disease (NCD) programs and equips them with the necessary knowledge based on the draft Global Monitoring Framework for NCDs and the Pan American Health Organization (PAHO) 's Plan of Action for NCDs and Strategic Plan. However, since some of the instruments and tools are still works in progress at global level, this Compendium is also a living document and subject to various revisions.*

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# Acknowledgements

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This Compendium is the work of many people across the fields of noncommunicable diseases (NCDs) and monitoring and evaluation (M&E) over the past several years. Work on the NCD indicator Compendium began in the Pan American Health Organization (PAHO), which is the regional office for the Americas of the World Health Organization (WHO). The first edition (2007) established the principles of organized population-based screening, and it stimulated numerous pilot projects.

This second, revised edition of the Compendium (2015) includes global- and regional-level indicators to measure NCD prevention and control. It was developed in collaboration with a number of individual chronic disease surveillance stakeholders from within PAHO/WHO and from other, partner organizations. A comprehensive list of external peer reviewers is provided in Annex 1.

This Compendium would not have been possible without the assistance of people at the country level. At different stages of the Compendium’s development, the national NCD programs and other NCD and surveillance specialists in several countries contributed to the guide. The experiences learned in these countries has helped make the guide more practical and user-friendly.

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# Foreword

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Noncommunicable diseases (NCDs) are the leading cause of death in the Americas. Each year, NCDs are responsible for three of every four deaths. Further, 34% of all NCD-related deaths correspond to premature mortality in persons 30–69 years old<sup>1</sup> This premature mortality is an enormous loss of human capital and imposes an extensive social and economic burden on individuals and households. Many NCDs are driven by social determinants, such as low levels of education and poverty, that are linked with the leading risk factors of NCDs (primarily smoking, alcohol consumption, lack of physical activity, and poor diet).<sup>2</sup>

The 2011 Political Declaration of the High-Level Meeting of the UN General Assembly on Prevention and Control of Non-Communicable Diseases and the 2013 Global NCD Action Plan (resolution WHA66.10), which was adopted by the World Health Assembly, are the guiding forces of the global response to NCDs. Along with its Member States, the Pan American Health Organization (PAHO) (which is the World Health Organization (WHO) regional office for the Americas), has committed to reducing premature mortality attributed to NCDs by 25% by 2025. PAHO and its Member State have also developed a Regional Action Plan that is in line with WHO recommendations.

This Compendium document provides guidance for monitoring progress towards these goals at the national and regional level. The regional achievements made on these goals will be reported to the World Health Assembly in 2025. Monitoring the response to the NCD epidemic is crucial to ensuring that investments in NCD initiatives bear fruit.

This data dictionary has been developed through the collaborative work of experts of the PAHO Technical Working Group. One of the principal objectives of the Compendium is to emphasize the importance of choosing standard indicators and measuring them repeatedly over time. The indicators suggested in this Compendium are based on a review of country and program experiences in monitoring and evaluation (M&E) and surveillance. The proposed dataset includes a selection of standard indicators that are included in the PAHO/WHO mandates related to regional and global NCD targets. The strengths and weaknesses of existing measures have been identified, and new indicators have been introduced where considered necessary. Protocols for the measurement of all indicators are provided, and most have been field-tested.

The guidelines in this document are designed to improve the quality and consistency of data collected at the country level, which will enhance the accuracy of conclusions drawn from the data at the national, regional, and global levels. The Compendium is intended to serve as a "living document," subject to future revisions as the NCD program moves forward, and to reflect the needs and experiences at the regional and global level.

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<sup>1</sup> Pan American Health Organization. Health in the Americas: 2012 edition. Regional outlook and country profiles [Internet]. Washington (DC): PAHO; 2012 [cited 2014 May 19]. Available from: [http://new.paho.org/saludenlasamericas/index.php?option=com\\_content&view=article&id=9&Itemid=14&lang=en](http://new.paho.org/saludenlasamericas/index.php?option=com_content&view=article&id=9&Itemid=14&lang=en).

<sup>2</sup> Global status report on noncommunicable diseases 2010. Geneva: World Health Organization; 2011

# Acronyms

ALOS	Average length of stay
AMRO	Regional Office for the Americas (WHO)
AUD	Alcohol use disorders ( ICD: F10.1 alcohol abuse; F10.2 alcohol dependence)
BMI	Body mass index
BP	Blood pressure
CKD	Chronic kidney disease
CNCD	Chronic noncommunicable disease
COPD	Chronic obstructive pulmonary disease
CVD	Cardiovascular disease
DALY	Disability-adjusted life year
DDD	Defined daily doses
DHS	Demographic and Health Survey
ESRD	End-stage renal disease
FAO	Food and Agriculture Organization
FCTC	Framework Convention on Tobacco Control
GATS	Global Adult Tobacco Survey
GFR	Glomerular filtration rate
GMF	Global Monitoring Framework (of the WHO)
GSHS	Global School-based Student Health Survey
GTSS	Global Tobacco Surveillance System
GYTS	Global Youth Tobacco Survey
HepB3	Hepatitis B vaccine
HPV	Human papillomavirus
IARC	The International Agency for Research on Cancer
ICD	The International Classification of Diseases
IHD	Ischemic heart disease
INCB	International Narcotics Control Board
JRF	WHO-UNICEF Joint Reporting Form
MICS	Multiple Indicator Cluster Survey (UNICEF)
MOH	Ministry of Health
NCD	Noncommunicable disease
PoA	Plan of Action for the Prevention and Control of Noncommunicable Disease in the Americas 2013-2019
SD	Standard deviation
SFA	Saturated-fatty acids
SP	PAHO Strategic Plan 2014-2019
TFA	Trans fatty acids
TFI	Tobacco Free Initiative
PAHO	Pan American Health Organization
PYLL	Potential years of life lost
RRT	Renal replacement treatment

*Acronyms*

WHO	World Health Organization
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# Glossary

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**Alcohol:** Absolute or anhydrous alcohol refers to ethanol with a low water content (less than 1%). In this report the term is used as a synonym for broad range of alcoholic beverages. Most popular categories of alcohol consumed are beer from barley, wine from grapes, and certain distilled spirits.<sup>3</sup>

**Adult per capita alcohol consumption (APC):** Total adult per capita alcohol consumption is the adult (the population of 15 years and over) per capita amount of alcohol consumed in liters of pure alcohol in a given population.<sup>4</sup>

**Age-standardized prevalence:** Risk factors such as tobacco use or morbidity generally vary widely by sex and across age groups. Comparison of crude rates between two or more countries at one point in time, or of one country at different points in time, can be misleading if the two populations being compared have significantly different age distributions or differences in risk factors by sex. The method of age-standardization is commonly used to overcome this problem and allows for meaningful comparison of prevalence between countries, once all other comparison issues described above have been addressed. The method involves applying the age-specific rates by sex in each population to one standard population. When presenting age-standardized prevalence rates, this Compendium uses the WHO Standard Population, a fictitious population whose age distribution is largely reflective of the population age structure of low- and middle-income countries.

**Chronic Care Model (CCM):** Several organizational models for CNCD management have been proposed and implemented internationally. Perhaps the best known and most influential is the Chronic Care Model (CCM), which focuses on linking informed, activated patients with proactive and prepared health care teams. According to the CCM, this requires an appropriately organized health system linked with necessary resources in the broader community. The model promoted by PAHO includes six focal areas for improving chronic care: health systems- organizations of care; community-resources and policies; self-management support- decision support; delivery system design; and clinical information systems.<sup>5</sup>

**The Codex Alimentarius:** At an international level, nutrition labeling and health claims are contained in the Codex Alimentarius, a set of international standards, guidelines and related texts for food products developed by the Codex Alimentarius Commission of the Joint FAO/WHO Food Standards Program. The aim of the Codex Alimentarius is to protect consumer health and encourage fair practice in international food trade. Although the implementation of the Codex Alimentarius is voluntary, the World Trade Organization has recognized it as a reference in international trade and trade disputes.<sup>6</sup>

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<sup>3</sup> WHO Lexicon of alcohol and drug terms, WHO, 1994

<sup>4</sup> Global Status Report on Alcohol and Health, WHO, 2011

<sup>5</sup> Innovative Care for Chronic Conditions: Organizing and Delivering High Quality Care for Chronic Noncommunicable Diseases in the Americas. 2013, PAHO

<sup>6</sup> Corinna Hawkes: Nutrition labels and health claims: the global regulatory environment. WHO, 2004  
<http://whqlibdoc.who.int/publications/2004/9241591714.pdf>

**Confidence Interval (CI):** a measure of the variability in the data. This is always the case when the estimate is derived from a sample. A confidence interval is a range of values that is normally used to describe the uncertainty around a point estimate of a quantity, for example, a mortality rate. Confidence intervals provide a means of assessing and reporting the precision of a point estimate, such as a mortality or hospitalization rate or a frequency of reported behaviors.<sup>7</sup>

**Clinical information system:** Registries that are used to track clinical measures and identify patients or entire populations who need education or increased case management. Particularly innovative strategies include making registries accessible to physicians via the internet and linking registries to community-wide electronic medical records.<sup>8</sup>

**Fruit:** refers to the mature ovary of a plant which encloses the seeds. This definition includes both fleshy fruits and dry fruits such as cereal grains, pulses and nuts, with specific characteristics of the ripened ovary wall unless they are classified as vegetables regardless of their high energy content, such as avocados, olives, and nuts. Only fruit juices that are 100% pure should be considered as fruit.<sup>9</sup>

**Harmful use of alcohol:** (also often referred to as “alcohol abuse”) is defined as “a pattern of alcohol use that is causing damage to health” (ICD-10).<sup>10</sup>

**Heavy episodic drinking (HED):** measurable pattern of alcohol consumption risk. In this report, it is defined as drinking at least 60 grams or more of pure alcohol on at least one occasion in the past thirty days.

**Metabolic Equivalent (METs):** 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 is taken into account.<sup>11</sup>

**Physical activity:** The levels of used were defined according to the GPAQ guidelines:<sup>12</sup>

- **High** A person reaching any of the following criteria is classified in this category: 1) vigorous-intensity activity on at least 3 days achieving a minimum of at least 1,500 MET-minutes per week; or 2) 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: 1) 3 or more days of vigorous-intensity activity of at least 20 minutes per day; or 2) 5 or more days of moderate-intensity activity; or 3) walking of at least 30 minutes per day; or 4) 5 or more days of any combination of walking,

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<sup>7</sup> E.g. Guidelines for Using Confidence Intervals for Public Health Assessment, Washington State Department of Health July 13, 2012

<sup>8</sup> Innovative Care for Chronic Conditions: Organizing and Delivering High Quality Care for Chronic Noncommunicable Diseases in the Americas. PAHO, 2013

<sup>9</sup> Antonio Agudo: Measuring intake of fruit and vegetables. WHO, 2004.

<sup>10</sup> Global Status Report on Alcohol and Health. WHO, 2011

<sup>11</sup> Global Strategy on Diet, Physical Activity and Health, WHO, 2014.

[http://www.who.int/dietphysicalactivity/physical\\_activity\\_intensity/en/](http://www.who.int/dietphysicalactivity/physical_activity_intensity/en/)

<sup>12</sup> WHO Global Physical Activity Questionnaire (GPAQ): Analysis Guide. Geneva 2002. Available on-line at [http://www.who.int/chp/steps/resources/GPAQ\\_Analysis\\_Guide.pdf](http://www.who.int/chp/steps/resources/GPAQ_Analysis_Guide.pdf)

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.

**Standard drink:** The World Health Organization (WHO) has defined the alcohol risk levels according to how many grams of alcohol are consumed each day. One standard drink definition, often used by WHO and some countries, contains 10 grams of pure alcohol. However, since there is no consensus internationally on a single standard drink definition, the actual amount of alcohol per standard drink can vary between countries.<sup>13</sup>

**Standardized death rate:** is the death rate of a population adjusted to a standard age distribution. It is calculated as a weighted average of the age-specific death rates of a given population; the weights are the age distribution of that population. As most causes of death vary significantly with people's age and sex, the use of standardized death rates improves comparability over time and between countries. The reason is that death rates can be measured independently of the age structure of populations in different times and countries (sex ratios usually are more stable). 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.<sup>14</sup>

**Vegetable:** refers to the edible part of a plant commonly considered as vegetables, as well as foods used as vegetables such as fresh green pulses and sprouts, fresh sweetcorn, botanical fruits used as vegetables such as tomatoes, peppers, cucumbers or eggplants, as well as mushrooms and seaweed.<sup>15</sup>

**WHO World Standard Population:** reflects the average age structure of the world's population expected over the next generation, from the year 2000 to 2025. The United Nations Population Division carries out two-yearly comprehensive assessment of population age-structure for each country by age and sex. Estimates were prepared for countries for every five years from 1950 and projected to 2025, based on population censuses and other demographic sources, adjusted for enumeration errors. From these estimates, an average world population age-structure was constructed for the period 2000-2025.<sup>16</sup>

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<sup>13</sup> John B. Saunders, Maristela G. Monteiro. World Health Organization. AUDIT. The Alcohol Use Disorders. Identification Test. Guidelines for Use in Primary Care. Second edition. WHO, 2001

<sup>14</sup> Broeck, J.; Brestoff, J. R.; Kaulfuss, C. (2013). "Statistical Estimation". *Epidemiology: Principles and Practical Guidelines*

<sup>15</sup> Antonio Agudo: Measuring intake of fruit and vegetables. WHO, 2004.

<sup>16</sup> Omar B. Ahmad et al. Age Standardization of Rates: A New WHO Standard. GPE Discussion Paper Series: No.31. EIP/GPE/EBD World Health Organization 2001

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# Introduction

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## Purpose

The overall objective of this Compendium is to encourage and facilitate internal and external monitoring and evaluation of NCD prevention and control programs, in order to improve their quality and effectiveness. This Compendium provides a comprehensive and standardized listing of the most widely used indicators relevant to countries, and it strives to achieve uniformity in defining indicators and thus allow comparisons of the NCD response over time and between and within countries. The Compendium reflects PAHO's and partners' ongoing efforts to establish NCD surveillance and monitoring programs to track trends over time in disease burden as well as NCD-related knowledge, attitudes, behaviors, and environmental influences.

Member States are strongly encouraged to integrate and harmonize the core indicators presented in this document into their ongoing or planned monitoring and evaluation of NCD initiatives. Many countries in the region already collect a number of NCD-related indicators for their own planning and management purposes, as well as for reporting to different international agencies and donors. Still, there is some variability in the definitions of core indicators that are critical for monitoring NCD programs. As a result, PAHO has recognized that priority should be given to a subset of standardized indicators that provide the most crucial information needed to guide the national NCD response and that allow for a more concentrated effort on assuring the quality of the data collected.

The indicators in this Compendium are designed to support countries to assess the current state of their response and their progress towards achieving national NCD targets. Simultaneously, the indicators can contribute to a better understanding of the regional response to the NCD epidemic, including progress towards meeting the global NCD voluntary targets approved by the World Health Assembly in May 2013. The Compendium will also aid in preparing regional and progress reports on the implementation of the WHO Global NCD Global Monitoring Framework, the consolidation at the regional level of the outcome indicators included in the PAHO Strategic Plan (SP) 2014-2019, and Plan of Action for Prevention and Control of Noncommunicable Diseases in the Americas (PoA 2013-2019.)

The specific objectives of the Compendium are to:

- support the process of revising national indicators to meet regional and global reporting requirements aligned with PAHO/WHO regional and global NCD plans
- provide standardized terminology across indicators and NCD control programs
- encourage consistent use of indicators to monitor and evaluate programs
- provide guidance for the development of comprehensive NCD and risk factor surveillance and evaluation plans, including selection of indicators to measure progress in specific areas

## **Background**

In 2011, the UN High-Level Meeting on NCDs adopted the Declaration of Commitment to establish and strengthen multisectoral national policies and plans for the prevention and control of NCDs. To realize these commitments, the World Health Assembly endorsed the WHO Global Action Plan for the Prevention and Control of NCDs 2013-2020. That conference also mandated that WHO develop a comprehensive global monitoring framework (GMF) to monitor trends and assess progress in NCD control. This framework comprises nine global targets and 25 indicators and was adopted by Member States during the World Health Assembly in May 2013.

The Political Declaration from the UN High-Level Meeting on NCDs also commits UN Member States to develop national targets and indicators based on national situations, as countries themselves are accountable for NCD control. Member States are strongly encouraged to develop national targets, based on their own national situations, that build on the nine global voluntary targets. National targets may be more or less ambitious than the global ones, and national adaptation should be guided by current performance in prevention and management of NCDs; current level of NCD-related mortality; risk factor exposure; and NCD-oriented programs, policies, and interventions both planned and in place.

To guide its Member States to prepare national targets and indicators for NCD control, PAHO developed a regional plan of action for 2013-2019. The Plan of Action for the Prevention and Control of Noncommunicable Disease in the Americas (PoA 2013-2019) and the PAHO Strategic Plan 2014-2019 (SP 2014-2019) respond to both regional and global mandates. The development and implementation of the both the regional plan and the SP are guided by the WHO Global NCD Action Plan, and they are congruent with the 25 indicators and 9 targets of the WHO Global Monitoring Framework (GMF).

WHO also requests results on GMF indicators as a means to encourage their adoption and use at the national level, as well as to enable regional and global NCD surveillance and inter-country comparisons. These indicators are, however, first and foremost critical to monitoring, evaluation, and problem-solving at the national and local levels. The global process is still ongoing and the indicators had not yet been finalized. Therefore, it was agreed that overlapping indicators for the regional plan of action and PAHO strategic plan should be defined quite broadly, while also leaving enough room to incorporate issues of specific interest to the Americas. Additional regional indicators, which are not included in the GMF, emphasize areas that are considered particularly important for the Americas. These issues include monitoring the prevalence of overweight children under the age of five, accessing preventive and lifesaving treatments (for, e.g., chronic kidney disease), addressing the social determinants of health, improving the quality and availability of data, and strengthening the research agenda for NCDs.

Together GMF, PoA, and SP indicators form the core set of 41 indicators (Table 1) that the Member States have committed to report regionally and globally.

Table 1 provides a summary of all core indicators (GMF and PAHO regional level SP, PoA), including framework element and target.

Framework Element	Target	Indicator
<b>BEHAVIORAL RISK FACTORS</b>		
Premature mortality from noncommunicable disease	 <p>1. A 25% relative reduction in the overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases</p>	<p>1. Unconditional probability of dying between ages of 30 and 70 from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases - <i>GMF #1; NCD PoA # 4.1.1</i></p>
Additional indicator		<p>2. Cancer incidence, by type of cancer, per 100,000 population - <i>GMF # 2; NCD PoA # 4.1.3</i></p>
Harmful use of alcohol	 <p>2. At least 10% relative reduction in the harmful use of alcohol, as appropriate, within the national context</p>	<p>3. Total (recorded and unrecorded) alcohol per capita (aged 15+ years old) consumption within a calendar year in liters of pure alcohol, as appropriate, within the national context - <i>GMF # 3,4,5; NCD PoA # 2.2.1; SP# 2.2.1</i></p> <p>4. Age-standardized prevalence of heavy episodic drinking among adolescents and adults (aged 15+ years), as appropriate, within the national context - <i>GMF # 3,4,5; NCD PoA # 2.2.1; SP# 2.2.1</i></p> <p>5. Prevalence (age 15+) of alcohol use disorders, within the national context - <i>GMF # 3,4,5; NCD PoA # 2.2.1; SP# 2.2.1</i></p>
Physical inactivity	 <p>3. A 10% relative reduction in prevalence of insufficient physical activity</p>	<p>6. Prevalence of insufficiently physically active adolescents, defined as less than 60 minutes of moderate to vigorous intensity activity daily - <i>GMF # 6, 7; NCD PoA # 2.4.1, 2.4.2; SP# 2.1.3</i></p> <p>7. Age-standardized prevalence of</p>

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		insufficiently physically active persons aged 18+ years (defined as less than 150 minutes of moderate-intensity activity per week, or equivalent) - <i>GMF # 6, 7; NCD PoA # 2.4.1, 2.4.2; SP# 2.1.3</i>
Salt/sodium intake	 4. A 30% relative reduction in mean population intake of salt/sodium	8. Age-standardized mean population intake of salt (sodium chloride) per day in grams in persons aged 18+ years - <i>GMF # 8; NCD PoA # 2.3.3; SP# 2.1.7</i>
Tobacco use	 5. A 30% relative reduction in prevalence of current tobacco use	9. Prevalence of current tobacco use among adolescents - <i>GMF # 9, 10; NCD PoA # 2.1.1; SP# 2.1.2</i>  10. Age-standardized prevalence of current tobacco use among persons aged 18+ years - <i>GMF # 9, 10; NCD PoA # 2.1.1; SP# 2.1.2</i>
<b>BIOLOGICAL RISK FACTORS</b>		
Raised blood pressure	 6. A 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure, according to national circumstances	11. Age-standardized prevalence of raised blood pressure among persons aged 18+ years (defined as systolic blood pressure $\geq 140$ mmHg and/or diastolic blood pressure $\geq 90$ mmHg) and mean systolic blood pressure - <i>GMF # 11; NCD PoA # 3.3.5</i>
Diabetes and obesity	 7. Halt the rise in diabetes and obesity	12. Age-standardized prevalence of raised blood glucose/diabetes among persons aged 18+ years (defined as fasting plasma glucose concentration $\geq 7.0$ mmol/l (126 mg/dl) or on medication for raised blood glucose) - <i>GMF # 12; NCD PoA # 3.3.1; SP# 2.1.5</i>  13. Prevalence of overweight and obesity in adolescents (defined according to the WHO growth reference for school-aged children and adolescents, overweight – one standard deviation body mass index for age and

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		<p>sex, and obese – two standard deviations body mass index for age and sex)          - <i>GMF # 13; NCD PoA # 3.3.3; SP# 2.1.6</i></p> <p>14. a) Age-standardized prevalence of overweight and obesity in persons aged 18+ years (defined as body mass index <math>\geq 25</math> kg/m<sup>2</sup> for overweight and body mass index <math>\geq 30</math> kg/m<sup>2</sup> for obesity)          - <i>GMF # 14; NCD PoA # 3.3.2; SP# 2.1.6</i></p> <p>14 b) Percentage of children less than 5 years of age who are overweight          - <i>SP# 2.5.3</i></p>
<p>Additional indicators:</p>		<p>15. Age-standardized mean proportion of total energy intake from saturated fatty acids in persons aged 18+ years          - <i>GMF # 15</i></p> <p>16. Age-standardized prevalence of persons (aged 18+ years) consuming less than five total servings (400 grams) of fruit and vegetables per day          - <i>GMF # 16</i></p> <p>17. 17a) Age-standardized prevalence of raised total cholesterol among persons aged 18+ years (defined as total cholesterol <math>\geq 5.0</math> mmol/l or 190 mg/dl);          17b) mean total cholesterol concentration          - <i>GMF # 17</i></p>

NATIONAL SYSTEMS RESPONSE		
<p>Drug therapy to prevent heart attacks and strokes</p>	 <p>8. At least 50% of eligible people receive drug therapy and counselling (including glycemic control) to prevent heart attacks</p>	<p>18. Proportion of eligible persons (defined as aged 40 years and older with a 10-year cardiovascular risk <math>\geq 30\%</math>, including those with existing cardiovascular disease) receiving drug therapy and counseling (including</p>

	and strokes	glycemic control) to prevent heart attacks and strokes - <i>GMF # 18; NCD PoA # 3.3.4</i>
Essential noncommunicable disease medicines and basic technologies to treat major noncommunicable diseases	 <p>9. An 80% availability of the affordable basic technologies and essential medicines, including generics required to treat major noncommunicable diseases in both public and private facilities</p>	19. Availability and affordability of quality, safe and efficacious essential noncommunicable disease medicines, including generics, and basic technologies in both public and private facilities - <i>GMF # 19; NCD PoA # 3.2.1</i>
Additional indicators		<p>20. Access to palliative care assessed by morphine-equivalent consumption of strong opioid analgesics (excluding methadone) per death from cancer - <i>GMF # 20; NCD PoA # 3.2.2</i></p> <p>21. Adoption of national policies that limit saturated fatty acids and virtually eliminate partially hydrogenated vegetable oils in the food supply, as appropriate, within the national context and national programs - <i>GMF # 21; NCD PoA # 2.3.2</i></p> <p>22. Availability, as appropriate, if cost-effective and affordable, of vaccines against human papillomavirus, according to national programs and policies - <i>GMF # 22; NCD PoA # 3.3.8</i></p> <p>23. Policies to reduce the impact on children of marketing of foods and non-alcoholic beverages high in saturated fats, trans fatty acids, free sugars, or salt - <i>GMF # 23; NCD PoA # 2.3.1</i></p> <p>24. Vaccination coverage against hepatitis B virus monitored by number of third doses of hepatitis B vaccine (HepB3) administered to infants - <i>GMF # 24</i></p> <p>25. Proportion of women between the</p>

	<p>ages of 30–49 screened for cervical cancer at least once, or more often, and for lower or higher age groups according to national programs or policies - <i>GMF # 25; NCD PoA # 3.3.6; SP# 2.1.8</i></p> <p>26. Proportion of women aged 50-69 years (and other age groups according to national programs and policies) in a three –year period with all positive breast cancer cases found during screening provided effective and timely treatment - <i>NCD PoA # 3.3.7</i></p> <p>27. Number of countries with a plan in place to increase access to affordable treatment options for patients affected by chronic kidney disease (CKD), particularly end-stage renal disease - <i>NCD PoA # 3.2.5</i></p> <p>28. Number of countries and territories with a prevalence rate with a treated end-stage renal disease of at least 700 patients per million population -<i>SP# 2.1.9</i></p> <p>29. Percentage of patients with treated and controlled hypertension (&lt;140/90 mmHg) -<i>SP# 2.1.4</i></p> <p>30. Number of countries with specific NCD prevention policies in at least three sectors outside the health sector (e.g., agriculture, trade, education, labor, development, finance, urban planning, environment, and transportation) - <i>NCD PoA # 1.1.1</i></p> <p>31. Number of countries implementing a national multisectoral plan for NCD prevention and control (PAHO) - <i>NCD PoA # 1.2.1</i></p> <p>32. Number of countries with national</p>
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	<p>social protection health schemes that address universal and equitable access to NCD interventions (PAHO) <i>- NCD PoA # 1.3.1</i></p> <p>33. Number of countries implementing a model of integrated management for NCDs (e.g., Chronic Care Model, evidence-based guidelines, clinical information system, self-care, community support) <i>- NCD PoA # 3.1.1</i></p> <p>34. Utilization of the PAHO Strategic Fund to procure essential medicines and other health technologies for CVD, cancer, diabetes, and CKD <i>- NCD PoA # 3.2.3</i></p> <p>35. Evaluation and selection of medicines for NCDs for the public sector based on the best current evidence and without conflict of interest. <i>- NCD PoA # 3.2.3</i></p> <p>36. Number of countries and territories with at least 70% use of seatbelts by all passengers <i>-SP# 2.3.1</i></p> <p>37. Number of countries with at least two repeated nationally representative population surveys of NCD risk factor, in adults and youth that include behaviors: tobacco use, alcohol use, physical activity, salt and fat intake, anthropometry, blood pressure, fasting glucose, and cholesterol <i>- NCD PoA # 4.1.4</i></p> <p>38. Number of countries that produce and disseminate regular reports with analysis on NCDs and risk factors, including demographic, socioeconomic, and environmental determinants and social distribution to contribute to global NCD monitoring process and have research agenda that includes</p>
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	<p>operational research studies on NCDs and risk factors aiming to strengthen evidence-based policies, program development, and implementation - <i>NCD PoA # 4.2.1</i></p> <p>39. Number of countries with high-quality mortality data (based on international criteria for underregistration and ill-defined or unknown causes of death) for the four main NCDs and other NCDs of national priority - <i>NCD PoA # 4.1.2</i></p> <p>40. Number of countries that have research agendas that include operational research studies on NCDs and risk factors aiming to strengthen evidence-based policies, program development and implementation. - <i>NCD PoA # 4.2.2</i></p>
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### How to Use the Indicators

NCD programs are not limited to the indicators listed in this Compendium, nor should they attempt to use all of the indicators outlined here. Rather, a menu of indicators is provided to outline the options available for the M&E of national and regional NCD programs or projects. The choice of appropriate indicators will vary according to the goals and objectives of each individual NCD program; the costs and feasibility associated with data collection; and the usefulness of the indicators for creating and supporting NCD policies, improving program implementation, and reporting on program results. Nonetheless, there are basic core indicators that measure NCD prevalence and their risk factors, and they should be included as the highest priority measures in all NCD surveillance programs.

This manual provides the technical specifications on these basic core indicators, which will also contribute to monitoring the progress on the regional and global NCD targets. A set of 41 core indicators (Table 1) will help national authorities to focus attention on mortality and morbidity, risk factor exposures, and key components of the national NCD response, as well as on key outcomes. Where multiple indicators exist for one target (e.g., for alcohol), Member States should endeavor to report on as many indicators as possible, or at minimum the one most appropriate for their national circumstances. Core indicators are marked with PAHO/WHO logos and the GMF logos if applicable.

However, these core indicators do not capture all of the essential information of the national NCD programs. Countries are encouraged to expand this list and make use of additional indicators available to them. For this reason, the technical working group (TWG) tasked to develop this list also included a set of standardized expanded indicators that complement the core indicators. These 53 expanded indicators included in the Compendium are regularly used by the countries or have been field-tested in

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terms of their validity, reliability, and feasibility of data collection. These indicators are intended for use at the national level and are not required for global- and regional-level reporting.

Countries need to assess all of the expanded indicators to decide which ones are applicable, useful, and feasible to their country situation. Selected indicators should clearly demonstrate if desired results have been achieved. For example, a country without legislation on nutrition labeling would have no use for the additional indicators related to monitoring the impact of a nutrition labeling policy on consumer behavior.

Once an NCD program has designed and adopted surveillance and monitoring framework and selected the appropriate indicators, data collection strategies need to be selected. Various methods are typically used to gather NCD information. No single data source can provide all of the information required for M&E—a combination is necessary.

For the survey instruments, this guide includes recommended key questions from widely used prevalence and risk surveys related to NCDs that can be included in other existing surveys. We are hopeful that these survey questions will become the regional standard, thus greatly enhancing the capacity of all stakeholders to monitor and compare trends in risk factors and NCD control interventions. With the expanded use of these standardized questions, the pool of reliable data will increase, hopefully leading to quality estimates at the country, regional, and global levels.

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# Implementation at the National Level

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## Indicator Construction

This manual includes detailed guidance for the construction of each indicator at the national and regional level. A description of each indicator is given to provide fundamental information that will help the reader to select, calculate, collect, and interpret the information. Each indicator is described using a brief statement that includes the following:

- Rationale: Why is this indicator needed?
- Definition: How are the results interpreted?
- Unit of measurement: What will this indicator measure?
- How to measure it: How should this indicator be calculated?
- Data sources: What is the method of data collection? What are the main sources of data collection?
- Frequency and function: How often and at what level (national, subnational) should the data be collected?
- NCD framework: At what level should the data be reported (national, regional, or global)?
- Limitations: What are the main limitations of the indicator?

## Measurement Tools and Data Sources

The data used in the indicators presented here come from a variety of sources and surveys that represent the best and most available statistics available at the time of the preparation of this Compendium. Use of standardized measurement tools and data sources allows for comparisons of country capacities and responses.

The primary measurement tools and data sources for mortality indicators are national mortality databases from vital statistics registries. In most countries, a civil registration system is used to record statistics on “vital events” such as births and deaths.

The primary measurement tools and data sources for risk factors derive from hospital and disease-specific registries, health information systems, and national population-based surveys. In order to maintain consistency and comparability in monitoring NCD-related risk factors, a standard set of survey questions should be implemented across various surveillance activities. This Compendium includes key questions from various global surveys that can be included in other existing surveys.

### 1. *The Global Adult Tobacco Survey (GATS)*

GATS is a nationally representative household survey that was launched in February 2007 as a new component of the ongoing Global Tobacco Surveillance System (GTSS). The GATS enables countries to collect data on adult tobacco use and key tobacco control measures. Results from the GATS assist countries in formulating, tracking, and implementing effective tobacco control

## *Implementation at the National Level*

interventions, and countries are able to compare their survey results with those from other countries.

### 2. *The Global School-based Student Health Survey (GSHS)*

The GSHS is a collaborative surveillance project designed to help countries measure and assess the behavioral risk and protective factors in 10 key areas among young people aged 13 to 17 years.

The GSHS is a relatively low-cost school-based survey that uses a self-administered questionnaire to obtain data on young people's health behavior as well as protective factors related to the leading causes of morbidity and mortality among children and adults worldwide.

### 3. *The Global Youth Tobacco Survey (GYTS)*

GYTS is a school-based survey designed to enhance the capacity of countries to monitor tobacco use among youth and to guide the implementation and evaluation of tobacco prevention and control programs. GYTS uses a standard methodology for constructing the sampling frame, selecting schools and classes, preparing questionnaires, following consistent field procedures, and using consistent data management procedures for data processing and analysis. The information generated from GYTS can be used to stimulate the development of tobacco control programs and can serve as a means to assess progress in meeting program goals. In addition, GYTS data can be used to monitor 7 out of the 38 articles in the WHO Framework Convention on Tobacco Control (FCTC) and the regional- and global-level indicators on tobacco use among youth.

### 4. *STEPS survey on chronic disease risk factors*

The WHO STEPwise approach to the surveillance of risk factors is a simple, standardized method for collecting, analyzing, and disseminating data on chronic disease risk factors in WHO member countries.

### 5. *WHO country capacity survey on NCDs (NCD CCS)*

The primary measurement tools and data sources for measuring indicators on national policies derive from WHO country capacity surveys (CCS) as well as national reports and policies from the countries. WHO conducts periodic assessment of national capacities for NCD prevention and control in all of its Member States through the use of the NCD CCS. Such periodic assessment allows countries and WHO to monitor progress and achievements in expanding capacities to respond to the epidemic of noncommunicable diseases. The questionnaire covers the following topics: health system infrastructure; funding; policies, plans, and strategies; surveillance; primary health care; and partnerships and multilateral collaboration. It is completed by national NCD focal points or designated colleagues within ministries of health or national institutes/agencies. Implementation of the NCD CCS is managed collaboratively between WHO Headquarters (WHO HQ) and the six WHO Regional Offices. The NCD CCS was carried out in 2000, 2005, 2010, and 2013.

## **Analysis and Presentation of Prevalence Indicators**

Data collected from countries' prevalence surveys are typically presented in two forms:

1. *Crude prevalence.* The crude prevalence is a summary measure of certain behavior (e.g., smoking) or disease (e.g., raised blood pressure) in a population. Crude prevalence reflects the

## *Implementation at the National Level*

actual situation in a country (e.g., prevalence of cigarette smoking by adults aged 18+ years or prevalence of increased blood pressure among adults aged 18+ years). The crude rate is expressed as a percentage of the total population (e.g., the number of smokers per 100 population of the country). When this crude prevalence rate is multiplied by the country's population, the result is the absolute number of individuals with the behavior or disease (e.g., smokers or number of people with increased blood pressure in the country).

2. *Adjusted and age-standardized prevalence rates:* These rates are constructed solely for the purpose of comparing prevalence data across multiple countries (subregionally, regionally, or globally) or across multiple time periods within the same country. These rates must not be used to estimate the absolute numbers (e.g., of smokers or people with increased blood pressure in the population, as can be done with crude data).

### ***Disaggregated Data***

Countries are strongly encouraged to collect disaggregated data, especially by sex and age. When possible, equity analyses should also be collected. Additional data analysis on education level, residency (urban/rural), and ethnicity/race will allow for more effective analysis to further understand whether the NCD response is achieving success throughout the population.

### ***Confidence Intervals***

When reporting results, it is a good practice to present confidence intervals alongside the point estimate wherever an inference is being made from a sample to a population. Confidence intervals provide the likely range of a sample proportion or sample mean from the true proportion/mean found in the population. This information provides an understanding of the precision of results obtained from the sample, when compared with the true population. Confidence intervals usually appear as: estimate +/- margin of error (e.g.,  $28.9 \pm 3.9$ ). When presenting the confidence interval of an estimate, the level of confidence should be clearly stated. The upper and lower limits of the interval should be clearly labeled or expressed as a range (e.g., 18.8% to 27.2%).

Many national population-based surveys use a clustered, stratified multistage sample design. In addition, weights should be applied when obtaining survey estimates. One of the effects of using the complex design and weighting is that standard errors for survey estimates are generally higher than the standard errors that would be derived from an unweighted simple random sample of the same size. Therefore, the true standard errors of the complex design are calculated by multiplying the standard error (of an estimate from a simple random sample) by the "design factor." The design factor (deft) is the ratio of the standard error of the complex sample to that of a simple random sample of the same size. Many statistical packages can quickly produce the confidence intervals of an estimate from a complex survey design. This is true, for example, with SPSS, with its Complex Samples Module add-on.

### **Reporting on the Global Indicators**

The core indicators specified in this document are used to measure progress towards the NCD regional and global targets. PAHO/WHO is mandated to prepare regular updates on the progress towards achieving the nine global NCD targets and the status regionally in relation to the 25 indicators included in the Global Monitoring Framework (GMF). In order for these reports to be as

### *Implementation at the National Level*

comprehensive as possible, Member States are strongly encouraged to submit data to PAHO/WHO on a regular basis to enable analysis of the global and regional status of NCD targets and indicators.

In line with PAHO/WHO reporting requirements, each Member State's progress report should cover achievements in reaching the set global targets by 2019 and 2025, including all 25 GMF indicators. Country progress reports will be used for compiling PAHO regional reports on the global NCD targets in 2016, 2021, and 2026 (WHA/Res 66.10).

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# Core and Expanded Indicators

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## Overview

The technical specification section lists all 40 indicators in the core basic national set, including the WHO global and PAHO regional indicators, and the expanded list of 53 recommended voluntary indicators. These are organized into four main categories:

- mortality and morbidity
- behavioral risk factors
- biological risk factors
- national system response

Of the 41 core and 53 expanded indicators, 23 are related to mortality and morbidity, 16 to behavioral risk factors, 12 to biological risk factors, and 44 to national system response. Other indicators cover overarching sociodemographic data and conditions such as poverty, health insurance, and the production, import, and export of selected goods, including fruits, vegetables, alcohol, and tobacco.

The “NCD Framework” column indicates if the indicator is one of the core basic WHO indicators (with reference to the corresponding number in the WHO GMF), one of the PAHO regional indicators related to the Strategic Plan (SP) and/or Regional Plan of Action (PoA), or one of the 53 voluntary expanded indicators.

## Mortality and Morbidity Indicators

Target	Indicator	NCD Framework
<p><b>WHO NCD target #1: 25 % relative reduction in premature mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory disease</b></p> 	<p><b>NCD Premature Mortality:</b> Unconditional probability of dying between ages 30 and 70 years from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases</p>	<p><b>GMF # 1 NCD PoA # 4.1.1</b></p>
	<p><b>Cancer Incidence:</b> by type of cancer per 100,000 population</p>	<p><b>GMF # 2 NCD PoA # 4.1.3</b></p>
	<p><b>Cardiovascular Disease Premature Mortality Rates:</b> Age-standardized mortality rate per 100,000 population for deaths &lt;70 years due to cardiovascular disease (ICD I00-I99)</p>	<p>Expanded # 1</p>
	<p><b>Cardiovascular Disease PYLL:</b> Potential years of life lost (PYLL) rate due to cardiovascular disease (ICD I00-I99)</p>	<p>Expanded # 2</p>
	<p><b>Ischemic Heart Disease Premature Mortality Rates:</b> Age-standardized mortality rate per 100,000 population for deaths &lt;70 years due to ischemic heart disease (ICD10 I20-I25)</p>	<p>Expanded # 3</p>
	<p><b>Ischemic Heart Disease PYLL:</b> Potential years of life lost (PYLL) rate due to ischemic heart disease (ICD10 I20-I25)</p>	<p>Expanded # 4</p>
	<p><b>Cerebrovascular Disease Premature Mortality Rates:</b> Age-standardized mortality rate per 100,000 population for deaths &lt;70 years due to cerebrovascular disease (stroke) (ICD10 I60 –I69)</p>	<p>Expanded # 5</p>
	<p><b>Cerebrovascular Disease PYLL:</b> Potential years of life lost (PYLL) rate due to cerebrovascular disease (stroke) (ICD10 I60-I69)</p>	<p>Expanded # 6</p>

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	<b>Cancer Mortality Rates:</b> Age-standardized mortality rate per 100,000 population for deaths <70 years due to cancer (total) (ICD10 C00-C97)	Expanded # 7
	<b>Cancer PYLL:</b> Potential years of life lost (PYLL) rate due to cancer (total) (ICD10- C00-C97)	Expanded # 8
	<b>Cervical Cancer Premature Mortality Rates:</b> Age-standardized mortality rate per 100,000 population for deaths <70 years due to cervical cancer (ICD 10 C53)	Expanded # 9
	<b>Cervical Cancer PYLL:</b> Potential years of life lost (PYLL) rate due to cervical cancer (ICD10 C53)	Expanded # 10
	<b>Lung Cancer Premature Mortality Rates:</b> Age-standardized mortality rate per 100,000 population for deaths <70 years due to lung cancer, including trachea, bronchus, and lung (ICD10 C33- C34)	Expanded # 11
	<b>Lung Cancer PYLL:</b> Potential years of life lost (PYLL) rate due to lung cancer, including trachea, bronchus, and lung (ICD10 C33- C34)	Expanded # 12
	<b>Female Breast Cancer Premature Mortality Rates:</b> Age-standardized mortality rate per 100,000 population for deaths <70 years due to female breast cancer (ICD10 C50)	Expanded # 13
	<b>Female Breast Cancer PYLL:</b> Potential years of life lost (PYLL) rate due to female breast cancer. (ICD 10 C50)	Expanded # 14
	<b>Cancers of the Digestive System Premature Mortality Rates:</b> Age-standardized mortality rate per 100,000 population for deaths <70 years due to cancers of the digestive system (ICD10 C15-C26, C48)	Expanded # 15
	<b>Cancers of the Digestive System PYLL:</b> Potential years of life lost (PYLL) rate due to cancer of the digestive system (ICD10 C15-C26, C48)	Expanded # 16
	<b>Diabetes Premature Mortality Rates:</b> Age-standardized mortality rate per 100,000 population for deaths <70 years due to underlying cause being diabetes (IC10 E10-E14)	Expanded # 17
	<b>Diabetes PYLL:</b> Potential years of life lost (PYLL) rate due to diabetes (ICD10 E10-E14)	Expanded # 18
	<b>Chronic Lower Respiratory Diseases Premature Mortality Rates:</b> Age-standardized mortality rate per 100,000 population for deaths <70 years due to lower respiratory diseases (ICD10 J40-J47)	Expanded # 19
	<b>Chronic Lower Respiratory Diseases PYLL:</b> Potential years of life lost (PYLL) rate due to chronic lower respiratory disease (ICD10 J40-J47)	Expanded # 20
	<b>Road Traffic Injury Mortality Rates:</b> Age-standardized mortality rate per 100,000 population for deaths <70 years due to land transport accidents (ICD 10 V01-V89)	Expanded # 21



**Name abbreviated**



**NCD Premature Mortality (GMF)**

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**Indicator name**

Unconditional probability of dying between ages 30 and 70 years from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases.

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**Rationale**

Of the 57 million global deaths in 2008, 36 million (63%) of these were due to NCDs. Nearly 80 per cent of these NCD deaths occurred in low- and middle-income countries (29 million deaths) (1).

The lower age limit for the indicator of 30 years represents the point in the life cycle where the mortality risk for the four selected chronic diseases starts to rise in most populations from very low levels at younger ages.

The upper limit of 70 years was chosen for two reasons:

- (a) To identify an age range in which these chronic diseases deaths can be truly considered premature deaths in almost all regions of the world. (In all regions except the African Region, the average expected age at death for 30 year olds already exceeds 70 years);
  - (b) Estimation of cause-specific death rates becomes increasingly uncertain at older ages because of increasing proportions of deaths coded to ill-defined causes, increasing levels of co-morbidity, and increasing rates of age misstatement in mortality and population data sources.
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**Definition**

Unconditional probability of dying between the exact ages 30 and 70 years from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases. Deaths from these four causes will be based on the following ICD codes: I00-I99; C00-C97, E10-E14 and J30-J98.

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**Unit of measure**

Percentage

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**Method of measurement**

Age-specific death rates are based on data on deaths by age, sex, and cause of death, as generated by the mortality statistics (MS) from country death registration systems.

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**Method estimation/calculation**

Age-specific death rates for the combined four cause categories (typically in terms of 5-year age groups, e.g., 30-34 or 65-69). A life table method allows calculation of the risk of death between exact ages 30 and 70 from any of

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these causes, in the absence of other causes of death.

The ICD codes to be included in the calculation are: cardiovascular disease I00-I99; cancer C00-c97, diabetes E10-E14 and chronic respiratory J30-j98.

$${}_5M_x = \frac{\text{Total deaths from four NCD causes between exact age } x \text{ and exact age } x + 5}{\text{Total population between exact age } x \text{ and exact age } x + 5}$$

Then translate the 5-year death rate to the probability of death in each 5-year age range:

$${}_5q_x = \frac{{}_5M_x * 5}{1 + {}_5M_x * 2.5}$$

Then calculate unconditional probability of death from age 30 to age 70:

$${}_{40}q_{30} = 1 - \prod_{x=30}^{65} (1 - {}_5q_x)$$

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**Preferred data sources**

Vital registration systems, which record deaths with sufficient completeness to allow estimation of all-cause death rates.

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**Other possible data sources**

Sample registration systems; verbal autopsy.

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**NCD framework**

- Goal Specific Indicator for WHO NCD Voluntary Target #1: 25% relative reduction in overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases.
- Outcome indicator for:
  - WHO’s global monitoring framework # 1
  - Regional NCD Action Plan 2013 – 2019 # 4.1.1

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**Disaggregation**

Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available

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**Expected frequency of data collection**

Annual

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**Limitations**

Potential limitations include:

- incomplete or unusable death registration data,
  - uncertainty associated with difficulties in estimating death rates in situations of conflict and disasters.
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**Data type**

Rate

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**References**

- 1) Alwan, A et al. Monitoring and surveillance of chronic noncommunicable diseases: progress and capacity in high-burden countries. *The Lancet*, 2010, 376:1861-1868
- 

**Related links**

Global Health Observatory (GHO): Mortality and global health estimates:  
[http://www.who.int/gho/mortality\\_burden\\_disease/en/](http://www.who.int/gho/mortality_burden_disease/en/)

PAHO mortality data base

[http://www.paho.org/hq/index.php?option=com\\_content&view=article&id=9155&Itemid=40096&lang=en&limitstart=1](http://www.paho.org/hq/index.php?option=com_content&view=article&id=9155&Itemid=40096&lang=en&limitstart=1)

WHO methods and data sources for life tables 1990-2011. Department of Health Statistics and Information Systems. WHO, Geneva  
[http://www.who.int/healthinfo/statistics/LT\\_method.pdf](http://www.who.int/healthinfo/statistics/LT_method.pdf)

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<b>Name abbreviated</b>	<b>Cancer Incidence (GMF)</b>
<b>Indicator name</b>	Cancer incidence, by type of cancer
<b>Rationale</b>	Cancer is the second leading cause of NCD deaths globally, responsible for 7.6 million deaths in 2008 (1). More than two thirds of all cancer deaths occur in low- and middle-income countries. Cancer is predicted to become an increasingly important cause of morbidity and mortality in the next few decades in all regions of the world (1). Data on cancer incidence and type of cancer are essential for planning cancer control programs. The diversity of cancer types in different countries highlights the need for cancer control activities to fully consider cancer patterns, given that different cancers may be variably amenable to primary prevention, early detection, screening, and treatment.
<b>Definition</b>	Number of new cancers of a specific site/type occurring in the population per year, usually expressed as the number of new cancers per 100,000 population
<b>Unit of measure</b>	Per 100,000 population
<b>Method of measurement</b>	Population-based cancer registry data collected from treatment facilities, clinicians, pathologists and death certificates
<b>Method estimation/ calculation</b>	<p>Number of new cancer cases diagnosed in a specific year, divided by the at-risk population for that category, multiplied by 100,000. The number of new cancers may include multiple primary cancers occurring in one patient. The primary site reported is the site of origin and not the metastatic site. In general, the incidence rate would not include recurrences. The population used depends on the rate to be calculated. For cancer sites that occur in only one sex, the sex-specific population (e.g., females for cervical cancer) is used.</p> <p>Numerator/denominator * 100,000</p> <ul style="list-style-type: none"> <li>• Numerator: Number of new cancer cases diagnosed in a specific year</li> <li>• Denominator: Midyear resident population over the same calendar year UN population prospect, medium variant</li> </ul>
<b>Preferred data sources</b>	Population-based cancer registries, which collect and classify information on all new cases of cancer in a defined population.

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<b>Other possible data sources</b>	<ul style="list-style-type: none"><li>• National research studies on cancer incidence</li><li>• The GLOBOCAN project, International Agency for Research on Cancer</li></ul> <hr/>
<b>NCD framework</b>	<ul style="list-style-type: none"><li>• Outcome indicator for<ul style="list-style-type: none"><li>○ WHO's global monitoring framework # 2</li><li>○ NCD Regional Action Plan 2013-2019 #4.1.3</li></ul></li></ul> <hr/>
<b>Disaggregation</b>	Age, sex, other relevant sociodemographic stratifiers where available <hr/>
<b>Expected frequency of data collection</b>	Annual <hr/>
<b>Limitations</b>	A limitation of the use of data from cancer registries is that they can have different coverage (e.g., individual hospitals, subnational population, or national population) which can contribute to underreporting. <hr/>
<b>Data type</b>	Rate <hr/>
<b>References</b>	(1) <i>Global status report on noncommunicable diseases 2010</i> . Geneva, World Health Organization, 2011. <hr/>
<b>Related links</b>	<ul style="list-style-type: none"><li>• CanReg5 is an open source tool to input, store, check and analyze cancer registry data: <a href="http://www.iacr.com.fr/canreg5.htm">http://www.iacr.com.fr/canreg5.htm</a></li><li>• The GLOBOCAN project. The aim of the project is to provide contemporary estimates of the incidence of, mortality and prevalence from major type of cancers, for 184 countries of the world. <a href="http://globocan.iarc.fr/">http://globocan.iarc.fr/</a></li></ul> <hr/>

<b>Name abbreviated</b>	<b>Cardiovascular Disease Premature Mortality Rates</b>
<b>Indicator name</b>	Age-standardized mortality rate per 100,000 population for deaths <70 years due to cardiovascular disease (ICD I00-I99)
<b>Rationale</b>	<p>Cardiovascular diseases (CVDs) cause more death globally than any other group of conditions. An estimated 17.5 million people died from CVDs in 2005, representing 30% of all global deaths. Over 80% of CVD deaths occur in low- and middle-income countries. Currently, CVDs comprise 33.7% of all deaths in the Americas (1).</p> <p>The most important behavioral risk factors for heart disease and stroke (two of the major CVDs) are unhealthy diet, physical inactivity, tobacco use, and the harmful use of alcohol. Behavioral risk factors are responsible for about 80% of coronary heart disease and cerebrovascular disease.</p>
<b>Definition</b>	Age-standardized mortality rates per 100,000 for deaths <70 years due to CVDs, using the WHO World Standard Population. The weights used in the age adjustment of data are the proportion of the standard WHO population within each age group. The weighted rates are then summed across the age groups to give the age-adjusted rate.
<b>Unit of measure</b>	Deaths <70 years due to CVDs, expressed per 100,000 population standardized to a standard population. This is necessary to control for differing age distributions from country to country.
<b>Method of measurement</b>	<p>The sum of the weighted age-specific mortality rates per 100,000 populations (by 5-year age groupings) for deaths &lt;70 years due to CVDs, using the WHO World Standard Population.</p> <p>Midyear resident population over the same calendar year UN population prospect, medium variant.</p>
<b>Preferred data sources</b>	Obtained from corresponding mortality registries and population distributions.
<b>Other possible data sources</b>	Sample registration systems; verbal autopsy.

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<b>NCD framework</b>	Outcome. Expanded indicator.
<b>Disaggregation</b>	Age, gender, residence, education level, and other relevant sociodemographic stratifiers where available, e.g., categories: male, female; 5-year age groups
<b>Expected frequency of data collection</b>	Annual
<b>Limitations</b>	<p>In countries where death certificates are not obligatory, sub-registration of deaths may occur.</p> <p>Certificates may be completed incorrectly by health professionals, resulting in mis-/underreporting of deaths and an increase in the possibility of different types of errors.</p>
<b>Data type</b>	Rate
<b>References</b>	<ol style="list-style-type: none"><li>1. de Fatima Marinho de Souza M et al. Cardiovascular disease mortality in the Americas: current trends and disparities. <i>Heart</i>. 2012 Aug; 98(16):1207-12.</li></ol>
<b>Related links</b>	<ul style="list-style-type: none"><li>• Cardiovascular diseases (CVDs) Fact sheet N°317. Updated March 2013. <a href="http://www.who.int/mediacentre/factsheets/fs317/en/">http://www.who.int/mediacentre/factsheets/fs317/en/</a></li><li>• PAHO: Cardiovascular Diseases (CVD) mortality by subgroups of causes <a href="http://www.paho.org/hq/index.php?option=com_content&amp;view=article&amp;id=6682&amp;Itemid=2391">http://www.paho.org/hq/index.php?option=com_content&amp;view=article&amp;id=6682&amp;Itemid=2391</a></li></ul>

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**Name abbreviated** **Cardiovascular Disease PYLL**

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**Indicator name** Potential years of life lost (PYLL) rate due to cardiovascular disease (CVD) (ICD I00-I99)

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**Rationale** Data on PYLL due to CVDs can be used by the public health community and researchers to evaluate the impact that health promotion programs, lifestyle changes, and modification of risk factors have on increasing the life expectancy of the population.

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**Definition** PYLL due to CVDs measures the total number of years a person would have lived additionally had she/he not died prematurely from cardiovascular disease. Premature death refers to deaths occurring before the country-specific estimated life expectancy.

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**Unit of measure** Rate is expressed per 100,000 population

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**Method of measurement** PYLL is calculated by subtracting the person's age at death from the reference age. To calculate the PYLL for a particular population in a particular year, the analyst sums the individual PYLLs for all individuals in that population who died in that year.

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**Method of estimation/calculation**

$$\frac{\left( \text{estimated life expectancy} - \text{mean age at death for premature deaths} \right) \times \text{number of premature deaths}}{\text{Population under estimated life expectancy}} \times 100,000$$


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**Preferred data sources** Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries.

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**Other possible data sources**

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**NCD framework** Outcome. Expanded indicator.

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**Disaggregation** Age under country-specific estimated life expectancy, gender, other relevant sociodemographic stratifiers where available.

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**Expected frequency of data collection** Annual

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**Limitations**

- Traditional mortality statistics are strongly dominated by the high quantity of deaths among older age groups. These statistics ignore the fact that death at a young age is generally considered to be a greater loss to the individual and society compared with death at an older age. The PYLL weighs death at a young age more heavily compared with death at an older age. One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL (1).
- All future years of life are weighted equally.
- Annual production of mortality statistics (particularly if stratified) may produce strata with very small numbers, which could be problematic.
- PYLL does not account for the amount of disability or suffering involved with certain health conditions, often measured using disability-adjusted life years (DALYS).

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**Data type** Rate

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**References**

1. Gardner JW, Sanborn JS. Years of Potential Life Lost-What does it measure? *Epidemiology* 1990; 1:322-329.

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**Related links** Health Metrics Network:  
Explore ranks and changes for causes or risk factors based on deaths, YLLs, YLDs, and DALYs for 1990 and 2010. Also, see changes in the ranking of causes or risk factors between 1990 and 2010. You can explore these ranks by age group, sex, region, and country.

<http://www.healthmetricsandevaluation.org/gbd/visualizations/gbd-arrow-diagram>

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<b>Name abbreviated</b>	<b>Ischemic Heart Disease Premature Mortality Rates</b>
<b>Indicator name</b>	Age-standardized premature mortality rate per 100,000 population for deaths <70 years due to Ischemic Heart Disease (ICD10 I20-I25)
<b>Rationale</b>	Ischemic heart disease (IHD) is one of the largest components of cause-specific mortality in the Region and is predicted to increase by 17% over the next decade (1). The crude mortality rate provides useful information about tendencies over time and is valuable when examined in connection with public health interventions in the observed population, which allows for comparison of trends.
<b>Definition</b>	Age-standardized mortality rates per 100,000 for deaths <70 years due to ischemic heart disease, using the WHO World Standard Population. The weights used in the age adjustment of data are the proportion of the standard WHO population within each age group. The weighted rates are then summed across the age groups to give the age-adjusted rate.
<b>Calculation method</b>	Numerator: 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.  Denominator: Midyear resident population over the same calendar year UN population prospect, medium variant
<b>Unit of measure</b>	Deaths <70 years due to ischemic heart disease, expressed per 100,000 population standardized to a standard population. This is necessary to control for differing age distributions from country to country.
<b>Preferred data sources</b>	Obtained from corresponding national mortality registries and population distributions.
<b>Other possible data sources</b>	Sample registration systems; verbal autopsy.
<b>NCD framework</b>	Outcome. Expanded indicator.

<b>Disaggregation</b>	Age, sex, residence, education level, and other relevant sociodemographic stratifiers where available. E.g. categories: female; male < 70 years.
<b>Expected frequency of data collection</b>	Annual
<b>Limitations</b>	<p>In countries where death certificates are not obligatory, sub-registration of deaths may occur.</p> <p>Certificates may be completed incorrectly by health professionals, resulting in mis-/underreporting of deaths and an increase in the possibility of different types of errors.</p>
<b>Data type</b>	Rate
<b>References</b>	<ol style="list-style-type: none"><li>1. World Health Organization (WHO). Preventing chronic diseases: a vital investment: WHO global report. WHO. Geneva 2005.</li></ol>
<b>Related links</b>	<p>Health Metrics Network: Explore ranks and changes for causes or risk factors based on deaths, YLLs, YLDs, and DALYs for 1990 and 2010. Also, see changes in the ranking of causes or risk factors between 1990 and 2010. You can explore these ranks by age group, sex, region, and country.</p> <p><a href="http://www.healthmetricsandevaluation.org/gbd/visualizations/gbd-arrow-diagram">http://www.healthmetricsandevaluation.org/gbd/visualizations/gbd-arrow-diagram</a></p>

<b>Name abbreviated</b>	<b>Ischemic Heart Disease PYLL</b>
<b>Indicator name</b>	Potential years of life lost (PYLL) rate due to ischemic heart disease (ICD10 I20-I25)
<b>Rationale</b>	Data on PYLL due to ischemic heart disease can be used by the public health community and researchers to evaluate the impact of health promotion programs, lifestyle changes, and modification of risk factors on increasing the life expectancy of the population
<b>Definition</b>	PYLL due to ischemic heart diseases measures the total number of years a person would have lived additionally had she/he not died prematurely from ischemic heart disease. Premature death refers to deaths occurring before the country-specific estimated life expectancy.
<b>Unit of measure</b>	Rate is expressed per 100,000 population
<b>Method of measurement</b>	PYLL is calculated by subtracting the person's age at death from the reference age. To calculate the PYLL for a particular population in a particular year, the analyst sums the individual PYLLs for all individuals in that population who died in that year.
<b>Method of estimation/calculation</b>	$\frac{\left( \text{estimated life expectancy} - \text{mean age at death for premature deaths} \right) \times \text{number of premature deaths}}{\text{Population under estimated life expectancy}} \times 100,000$
<b>Preferred data sources</b>	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries.
<b>Other possible data sources</b>	
<b>NCD framework</b>	Outcome. Expanded indicator.

**Disaggregation** Age under country-specific estimated life expectancy, sex, other relevant sociodemographic stratifiers where available

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**Expected frequency of data collection** Annual

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**Limitations**

- Traditional mortality statistics are strongly dominated by the high quantity of deaths among older age groups. These statistics ignore the fact that death at a young age is generally considered to be a greater loss to the individual and society compared with death at an older age. The PYLL weighs death at a young age more heavily compared with death at an older age. One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL (1).
- 
- All future years of life are weighted equally.
- Annual production of mortality statistics (particularly if stratified) may produce strata with very small numbers that could be problematic.
- PYLL does not account for the amount of disability or suffering involved with certain health conditions, often measured using disability-adjusted life years (DALYS).

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**Data type** Rate

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**References**

1. Gardner JW, Sanborn JS. Years of Potential Life Lost-What does it measure? *Epidemiology* 1990; 1:322-329.

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**Related links** Health Metrics Network:  
Explore ranks and changes for causes or risk factors based on deaths, YLLs, YLDs, and DALYs for 1990 and 2010. Also, see changes in the ranking of causes or risk factors between 1990 and 2010. You can explore these ranks by age group, sex, region, and country.

<http://www.healthmetricsandevaluation.org/gbd/visualizations/gbd-arrow-diagram>

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<b>Name abbreviated</b>	<b>Cerebrovascular Disease Premature Mortality Rates</b>
<b>Indicator name</b>	Age-standardized mortality rate per 100,000 population for deaths <70 years due to cerebrovascular disease (stroke) (ICD10 I60 –I69)
<b>Rationale</b>	Cerebrovascular disease (stroke) is one of the largest components of cause-specific mortality in the Region and is predicted to increase by 17% in the next decade (1).
<b>Definition</b>	Deaths <70 years due to cerebrovascular 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.
<b>Unit of measure</b>	Rate per 100,000 population
<b>Method of measurement</b>	The use of a standard population is needed and for this purpose, the WHO World Standard Population will be used. Age-standardized mortality rates per 100,000 for deaths due to cerebrovascular disease (stroke), using the WHO World Standard Population. The weights used in the age adjustment of data are the proportion of the standard WHO population within each age group. The weighted rates are then summed across the age groups to give the age-adjusted rate.
<b>Method of estimation /calculation</b>	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.  Midyear resident population over the same calendar year UN population prospect, medium variant
<b>Preferred data sources</b>	Obtained from corresponding national mortality registries and population distributions.
<b>Other possible data sources</b>	Sample registration systems; verbal autopsy.

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<b>NCD framework</b>	Outcome. Expanded indicator.
<b>Disaggregation</b>	Age, sex, other relevant sociodemographic stratifiers where available. Categories: e.g., male/female by 5-year age groups.
<b>Expected frequency of data collection</b>	Annually
<b>Limitations</b>	In countries where death certificates are not obligatory, sub-registration of deaths may occur.  Certificates may be completed incorrectly by health professionals, resulting in mis-/underreporting of deaths and an increase in the possibility of different types of errors.
<b>Data type</b>	Rate
<b>References</b>	<ol style="list-style-type: none"><li>1. World Health Organization (WHO). Preventing chronic diseases: a vital investment: WHO global report. 2005 op. cit.</li></ol>
<b>Related links</b>	

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<b>Name abbreviated</b>	<b>Cerebrovascular Disease PYLL</b>
<b>Indicator name</b>	Potential years of life lost (PYLL) rate due to cerebrovascular disease (stroke) (ICD10 I60-I69)
<b>Rationale</b>	PYLL due to cerebrovascular diseases can be used by the public health community and researchers to evaluate the impact of health promotion programs, lifestyle changes, and modification of risk factors on increasing the life expectancy of the population.
<b>Definition</b>	PYLL is a measure of premature mortality. PYLL due to cerebrovascular disease (stroke) measures the total number of years a person would have lived additionally had he/she not died prematurely from cerebrovascular disease (stroke). Premature death refers to deaths occurring before the country-specific estimated life expectancy.
<b>Unit of measure</b>	Rate per 100,000 population
<b>Method of measurement</b>	PYLL is calculated by subtracting the person's age at death from the reference age. To calculate the PYLL for a particular population in a particular year, the analyst sums the individual PYLLs for all individuals in that population who died in that year.
<b>Method of estimation/calculation</b>	$\frac{\left( \text{estimated life expectancy} - \text{mean age at death for premature deaths} \right) \times \text{number of premature deaths}}{\text{Population under estimated life expectancy}} \times 100,000$
<b>Data sources</b>	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries
<b>Other possible data sources</b>	
<b>NCD framework</b>	Outcome. Expanded indicator.

**Disaggregation** Age, sex, other relevant sociodemographic stratifiers where available; e.g., female, male; age under country-specific estimated life expectancy.

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**Expected frequency of data collection** Annual

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**Limitations**

- Traditional mortality statistics are strongly dominated by the high quantity of deaths among older age groups. These statistics ignore the fact that death at a young age is generally considered to be a greater loss to the individual and society compared with death at an older age. The PYLL weighs death at a young age more heavily compared with death at an older age. One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL (1).
  - All future years of life are weighted equally.
  - Annual production of mortality statistics (particularly if stratified) may produce strata with very small numbers that could be problematic.  
PYLL does not account for the amount of disability or suffering involved with certain health conditions, often measured using disability-adjusted life years (DALYS).
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**Data type** Rate

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**References** Gardner JW, Sanborn JS. Years of potential life lost (YPLL)--what does it measure? *Epidemiology* 1990; 1:322-329.

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**Related links**

Health Metrics Network:

Explore ranks and changes for causes or risk factors based on deaths, YLLs, YLDs, and DALYs for 1990 and 2010. Also, see changes in the ranking of causes or risk factors between 1990 and 2010. You can explore these ranks by age group, sex, region, and country.

<http://www.healthmetricsandevaluation.org/gbd/visualizations/gbd->

arrow-diagram

<b>Name abbreviated</b>	<b>Cancer Mortality Rates</b>
	<p>Cancer is not a single disease, but rather numerous diseases with different causes, risks, and potential interventions. Interpretation of increases or decreases in cancer mortality can only be made by examining the specific crude mortality rates of every type of cancer.</p> <p>The use of a standard population is needed, and for this purpose, the WHO World Standard Population will be used.</p>
<b>Indicator name</b>	Age-standardized mortality rate per 100,000 population for deaths <70 years due to malignant neoplasm (total) (ICD10 C00-C97)
<b>Rationale</b>	It is estimated that approximately one in two males and one in three females will have a cancer diagnosis during their lifetime. Significant morbidity and mortality from cancers of the lung, colon and rectum, female breast, cervix, oral cavity, pharynx, and others can be reduced through known interventions.
<b>Definition</b>	Age-standardized mortality rates per 100,000 for deaths <70 years due to malignant neoplasms (total), using the WHO World Standard Population. 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.
<b>Unit of measure</b>	Per 100,000 population
<b>Method of measurement</b>	Deaths <70 years due to malignant neoplasms (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 weights used in the age adjustment of data are the proportion of the standard WHO population within each age group. The weighted rates are then summed across the age groups to give the age-adjusted rate.
<b>Calculation</b>	The sum of the weighted age-specific mortality rates per 100,000 population (by

## Core National Indicators – Mortality and Morbidity

<b>method</b>	5-year age groupings) for deaths <70 years due to malignant neoplasm (total), using the WHO World Standard Population  Midyear resident population over the same calendar year UN population prospect, medium variant.
<b>Preferred data sources</b>	Obtained from corresponding mortality registries and population distributions.
<b>Other possible data sources</b>	The GLOBOCAN project, International Agency for Research on Cancer.
<b>NCD framework</b>	Outcome. Expanded indicator.
<b>Disaggregation</b>	Age, sex, education level, residency, and other relevant sociodemographic stratifiers where available, e.g., female, male; age <70 years
<b>Expected frequency of data collection</b>	Annual
<b>Limitations</b>	A limitation of the use of data from cancer registries is that they can have different coverage (e.g., individual hospitals, subnational population, or national population), which can contribute to underreporting. 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 programs, crude mortality rates fail to take into account the response capacity of the health care system as well as the fact that some types of tumors are so aggressive that even the earliest detection will fail to eradicate them.
<b>Data type</b>	Rate
<b>References</b>	Ferlay J. et al. GLOBOCAN 2002: Cancer incidence, mortality and prevalence worldwide. IARC CancerBase No. 5, Version 2.0. IARC Press. Lyon 2004
<b>Related links</b>	The GLOBOCAN project. The aim of the project is to provide contemporary estimates of the incidence of, mortality, and prevalence from major type of cancers, for 184 countries of the world. <a href="http://globocan.iarc.fr/">http://globocan.iarc.fr/</a>

<b>Name abbreviated</b>	<b>Cancer PYLL</b>
<b>Indicator name</b>	Potential years of life lost (PYLL) rate due to malignant neoplasm (total) (ICD10- C00-C97)
<b>Rationale</b>	PYLL due to malignant diseases can be used by the public health community and researchers to evaluate the impact that health promotion programs, lifestyle changes, and modification of risk factors have on increasing the life expectancy of the population.
<b>Definition</b>	PYLL is a measure of premature mortality. The PYLL due to malignant neoplasm (total) (ICD10 C00-C97) measures the total number of years a person would have lived additionally, had he/she not died prematurely from a malignant neoplasm. Premature death refers to deaths occurring before the country-specific estimated life expectancy.
<b>Unit of measure</b>	Per 100,000 population.
<b>Method of measurement</b>	PYLL is calculated by subtracting the person's age at death from the reference age. To calculate the PYLL for a particular population in a particular year, the analyst sums the individual PYLLs for all individuals in that population who died in that year.
<b>Method of estimation/ calculation</b>	$\frac{\left( \text{estimated life expectancy} - \text{mean age at death for premature deaths} \right) \times \text{number of premature deaths}}{\text{Population under estimated life expectancy}} \times 100,000$
<b>Preferred data sources</b>	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries.
<b>Other possible data sources</b>	
<b>NCD framework</b>	Outcome. Expanded indicator.

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**Disaggregation**

Age, sex, and other relevant sociodemographic stratifiers where available; e.g., categories: female, male; age under country-specific estimated life expectancy.

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**Expected frequency of data collected**

Annual

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**Limitations**

- Traditional mortality statistics are strongly dominated by the high quantity of deaths among older age groups. These statistics ignore the fact that death at a young age is generally considered to be a greater loss to the individual and society compared with death at an older age. The PYLL weighs death at a young age more heavily compared with death at an older age. One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL (1).
  - All future years of life are weighted equally.
  - Annual production of mortality statistics (particularly if stratified) may produce strata with very small numbers, which could be problematic.
  - PYLL does not account for the amount of disability or suffering involved with certain health conditions, often measured using disability-adjusted life years (DALYS).
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**Data type**

Rate

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**References**

Gardner JW, Sanborn JS. Years of potential life lost (YPLL)--what does it measure? *Epidemiology* 1990; 1:322-329.

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**Related links**

Health Metrics Network:  
Explore ranks and changes for causes or risk factors based on deaths, YLLs, YLDs, and DALYs for 1990 and 2010. Also see changes in the ranking of causes or risk factors between 1990 and 2010. You can explore these ranks by age group, sex, region, and country.

<http://www.healthmetricsandevaluation.org/gbd/visualizations/gbd-arrow-diagram>



<b>Name abbreviated</b>	<b>Cervical Cancer Premature Mortality Rates</b>
<b>Indicator name</b>	Age-standardized mortality rate per 100,000 female population for deaths <70 years due to cervical cancer (ICD 10 C53)
<b>Rationale</b>	<p>Cervical cancer has one of the highest incidence, prevalence, and mortality of all cancers in the Region of the Americas. It is estimated that in Latin America and the Caribbean the incidence of cervical cancer is 28.6-32.6 per 100,000 and the mortality rate is 12.9-16 per 100,000. Approximately 40-60% of cervical cancer deaths in the Region could be prevented by increasing screening of the target population (1).</p> <p>Other factors that can increase the risk of cervical cancer are: cigarette smoking; infection with human papillomavirus; and certain sexual practices, including having multiple partners, early age at first intercourse, and history of sexually transmitted disease (2).</p>
<b>Definition</b>	Age-standardized mortality rates per 100,000 for female deaths <70 years due to cervical cancer, using the WHO World Standard Population. The WHO World Standard Population reflects the average age structure of the world's population expected over the next generation (from 2000 to 2025).
<b>Unit of measure</b>	Per 100,000 female population
<b>Method of measurement</b>	The cervical cancer mortality rate is the number of deaths, with cervical cancer as the underlying cause of death, occurring among the female population in a country during a year.
<b>Method of estimation/ calculation</b>	<p>The sum of the weighted age-specific mortality rates per 100,000 female population (by 5-year age groupings) for deaths &lt;70 years due to cervical cancer, using the WHO World Standard Population. The weights used in the age adjustment of data are the proportion of the standard WHO population within each age group. The weighted rates are then summed across the age groups to give the age-adjusted rate.</p> <p>Midyear resident population over the same calendar year UN population prospect, medium variant</p>
<b>Preferred data sources</b>	Obtained from corresponding mortality registries and population distributions.

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<b>Other possible data sources</b>	Sample registration system; verbal autopsy.
<b>NCD framework</b>	Outcome. Expanded indicator.
<b>Disaggregation</b>	Age, education level, residency, and other relevant sociodemographic stratifiers where available, e.g., categories: female; age <70 years
<b>Expected frequency of data collection</b>	Annual
<b>Limitations</b>	<ul style="list-style-type: none"><li>• Besides previously mentioned limitations due to underreporting and quality of vital statistics and crude and standardized mortality rate, the prevalence of hysterectomy should be taken into account when declining death rates for cervical cancer are reported.</li><li>• A limitation of the use of data from cancer registries is that they can have different coverage (hospital, subnational population, or national population). That can be reflected in the number of cases reported, so underreporting can occur.</li><li>• 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.</li></ul>
<b>Data type</b>	Rate
<b>References</b>	<ol style="list-style-type: none"><li>1. Stewart B. W. and Kleihues P. (eds): World Cancer Report. IARC<i>Press</i>. Lyon 2003</li><li>2. Ferlay J. et al. GLOBOCAN 2002: Cancer incidence, mortality and prevalence worldwide. 2004, op. cit.</li></ol>
<b>Related links</b>	Bernard Stewart and Christopher P. Wild (eds). World Cancer Report 2014. IARC Nonserial Publication. IARC <i>Press</i> . Lyon 2014. On sale at <a href="http://www.iarc.fr/en/publications/pdfs-online/wcr/">http://www.iarc.fr/en/publications/pdfs-online/wcr/</a>

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**Name abbreviated** **Cervical Cancer PYLL**

**Indicator name** Potential years of life lost (PYLL) Rate due to cervical cancer (ICD10 C53)

**Rationale** PYLL due to cervical cancer can be used by the public health community and researchers to evaluate the impact of health promotion programs, lifestyle changes, and modification of risk factors for increasing the life expectancy of the population.

**Definition** PYLL is a measure of premature mortality. The PYLL due to cervical cancer measures the total number of years a person would have lived additionally had he/she not died prematurely from cervical cancer. Premature death refers to deaths occurring before the country-specific estimated life expectancy.

**Unit of measure** Per 100,000 female population

**Method of measurement** PYLL is calculated by subtracting the person's age at death from the reference age. To calculate the PYLL for a particular population in a particular year, the analyst sums the individual PYLLs for all individuals in that population who died in that year.

**Method of estimation/calculation**

$$\frac{\left( \text{female estimated life expectancy} - \text{mean age at death for premature female deaths} \right) \times \text{number of premature female deaths}}{\text{Female population under estimated life expectancy}} \times 100,000$$

**Preferred data sources** Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries.

**Other possible data sources**

**NCD framework** Outcome. Expanded indicator.

**Disaggregation** Age, education level, residency, and other relevant sociodemographic stratifiers where available, e.g., categories: female; age under country-specific estimated life expectancy

**Expected frequency of data collection**

Annual

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**Limitations**

- Traditional mortality statistics are strongly dominated by the high quantity of deaths among older age groups. This denies the fact that death at a young age is generally considered to be a greater loss to the individual and society compared with death at an older age. The PYLL weighs death at a young age more heavily compared with death at an older age. One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL (1)
  - All future years of life are weighted equally.
  - Annual production of mortality statistics (particularly if stratified) may produce strata with very small numbers that could be problematic.
  - 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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**Data type**

Rate

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**References**

Gardner JW, Sanborn JS. Years of Potential Life Lost-What does it measure? *Epidemiology* 1990; 1:322-329.

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**Related links**

Health Metrics Network:  
Explore ranks and changes for causes or risk factors based on deaths, YLLs, YLDs, and DALYs for 1990 and 2010. Also, see changes in the ranking of causes or risk factors between 1990 and 2010. You can explore these ranks by age group, sex, region, and country.

<http://www.healthmetricsandevaluation.org/gbd/visualizations/gbd-arrow-diagram>

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<b>Name abbreviated</b>	<b>Lung Cancer Premature Mortality Rates</b>
<b>Indicator name</b>	Age-standardized mortality rate per 100,000 population for deaths <70 years due to cancer of the trachea, bronchus, and lung. (ICD10 C33- C34)
<b>Rationale</b>	<p>Approximately 80%–90% of lung cancer mortality is attributable to cigarette smoking (1). Lung cancer mortality is also associated with environmental tobacco smoke and certain workplace exposures. The 5-year relative survival rate is &lt;15%, among the lowest of common cancers (2). Therefore, mortality rates can be particularly useful to detect trends and develop targeted programs and policies that limit tobacco smoke and exposure.</p> <p>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.</p>
<b>Definition</b>	Age-standardized mortality rates per 100,000 for deaths <70 years due to cancer of the trachea, bronchus, and lung, using the WHO World Standard Population.
<b>Unit of measure</b>	Per 100,000 population
<b>Method of measurement</b>	The lung cancer mortality rate is the number of deaths, with lung cancer as the underlying cause of death, occurring among the population in a country during a year.
<b>Method of estimation/ calculation</b>	<p>The sum of the weighted age-specific mortality rates per 100,000 population (by 5-year age groupings) for deaths &lt;70 years due to lung cancer, using the WHO World Standard Population. The weights used in the age adjustment of data are the proportion of the standard WHO population within each age group. The weighted rates are then summed across the age groups to give the age-adjusted rate.</p> <p>Midyear resident population over the same calendar year UN population prospect, medium variant</p>
<b>Preferred data sources</b>	Obtained from corresponding mortality registries and population distributions.

**Other possible data sources**

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**NCD framework** Outcome. Expanded indicator.

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**Disaggregation** Age, sex, other relevant sociodemographic stratifiers where available; e.g., categories: female, male; age <70 years

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**Expected frequency of data collection** Annual

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**Limitations**

- A limitation of the use of data from cancer registries is that they can have different coverage (hospital, subnational population, or national population). That can be reflected in the number of cases reported, so underreporting can occur.
- 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

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**Data type** Rate

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**References**

1. World Health Organization (WHO). World health report 2002: Reducing risks, promoting healthy life. WHO. Geneva 2002.
2. Stewart B.W. and Kleihues P. (eds.): World Cancer Report. IARC Press. 2003 op. cit.

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**Related links**

- The GLOBOCAN project. The aim of the project is to provide contemporary estimates of the incidence of, mortality and prevalence from major type of cancers, for 184 countries of the world. <http://globocan.iarc.fr/>

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<b>Name abbreviated</b>	<b>Lung Cancer PYLL</b>
<b>Indicator name</b>	Potential years of life lost (PYLL) rate due to lung cancer, including trachea, bronchus, and lung (ICD10 C33- C34)
<b>Rationale</b>	PYLL due to lung cancer can be used by the public health community and researchers to evaluate the impact of health promotion programs, lifestyle changes, and modification of risk factors to increase the life expectancy of the population.
<b>Definition</b>	PYLL is a measure of premature mortality. The PYLL due to lung cancer (including trachea, bronchus, and lung) measures the total number of years each person 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.
<b>Unit of measure</b>	Per 100,000 population
<b>Method of measurement</b>	PYLL is calculated by subtracting the person's age at death from the reference age. To calculate the PYLL for a particular population in a particular year, the analyst sums the individual PYLLs for all individuals in that population who died in that year.
<b>Method of estimation /calculation</b>	$\frac{\left( \text{estimated life expectancy} - \text{mean age at death for premature deaths} \right) \times \text{number of premature deaths}}{\text{Population under estimated life expectancy}} \times 100,000$
<b>Preferred data sources</b>	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries
<b>NCD framework</b>	Outcome. Expanded indicator.
<b>Disaggregation</b>	Age, sex, and other relevant sociodemographic stratifiers where available; e.g., categories: female, male; age under country-specific estimated life expectancy.

**Expected frequency of data collection**

Annual

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**Limitations of indicator and data sources**

- Traditional mortality statistics are strongly dominated by the high quantity of deaths among older age groups. This denies the fact that death at a young age is generally considered to be a greater loss to the individual and society compared with death at an older age. The PYLL weighs death at a young age more heavily compared with death at an older age. One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL (1)
  - All future years of life are weighted equally.
  - Annual production of mortality statistics (particularly if stratified) may produce strata with very small numbers that could be problematic.
  - 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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**Data type**

Rate

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**References**

1. Gardner JW, Sanborn JS. Years of Potential Life Lost-What does it measure? *Epidemiology* 1990; 1:322-329.
- 

**Related links**

Health Metrics Network:

Explore ranks and changes for causes or risk factors based on deaths, YLLs, YLDs, and DALYs for 1990 and 2010. Also, see changes in the ranking of causes or risk factors between 1990 and 2010. You can explore these ranks by age group, sex, region, and country.

<http://www.healthmetricsandevaluation.org/gbd/visualizations/gbd-arrow-diagram>

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**Name abbreviated**      **Female Breast Cancer Premature Mortality Rates**

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**Indicator name**      Age-standardized mortality rate per 100,000 population for deaths <70 years due to female breast cancer (ICD10 C50)

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**Rationale**      The incidence of breast cancer in Latin America and the Caribbean is between 25.9-46/100,000 and the mortality rate is approximately 10.5-15.1/100,000 (1). Breast cancer is considered to have a relatively high survival rate. Crude and standardized mortality rates as well as PYLL provide information for decisions regarding screening and strengthening secondary and tertiary health care.

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**Definition**      Deaths <70 years due to female breast cancer expressed per 100,000 population standardized to a standard population.

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**Unit of measure**      Per 100,000 population

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**Method of measurement**      The breast cancer mortality rate is the number of female deaths, with breast cancer as the underlying cause of death, occurring among the population in a country during a year.

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**Method of estimation/calculation**      The sum of the weighted age-specific mortality rates per 100,000 female population (by 5-year age groupings) for deaths <70 years due to breast cancer, using the WHO World Standard Population. The weights used in the age adjustment of data are the proportion of the standard WHO population within each age group. The weighted rates are then summed across the age groups to give the age-adjusted rate.

Midyear resident population over the same calendar year UN population prospect, medium variant

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**Preferred data sources**      Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries

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**Other possible data sources**      Sample registration systems; verbal autopsy.  
The GLOBOCAN project, International Agency for Research on Cancer.

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<b>NCD framework</b>	Outcome. Expanded indicator
<b>Disaggregation</b>	Age and other relevant sociodemographic stratifiers where available; e.g., categories: female; age <70 years.
<b>Expected frequency of data collection</b>	Annual
<b>Limitations</b>	<ul style="list-style-type: none"><li>• A limitation of the use of data from cancer registries is that they can have different coverage (hospital, subnational population, or national population). That can be reflected in the number of cases reported, so underreporting can occur.</li><li>• 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</li></ul>
<b>Data type</b>	Rate
<b>References</b>	<ol style="list-style-type: none"><li>1. Ferlay J. et al. GLOBOCAN 2002: Cancer incidence, mortality and prevalence worldwide. 2004, op. cit.</li></ol>
<b>Related links</b>	The GLOBOCAN project. The aim of the project is to provide contemporary estimates of the incidence of, mortality and prevalence from major type of cancers, at national level, for 184 countries of the world. <a href="http://globocan.iarc.fr/">http://globocan.iarc.fr/</a>

<b>Name abbreviated</b>	<b>Female Breast Cancer PYLL</b>
<b>Indicator name</b>	Potential years of life lost (PYLL) rate due to female breast cancer. (ICD 10 C50)
<b>Rationale</b>	PYLL due to breast cancer can be used by the public health community and researchers to evaluate the impact of health promotion programs, lifestyle changes, and modification of risk factors to increase the life expectancy of the population.
<b>Definition</b>	Premature death due to female breast cancer
<b>Unit of measure</b>	Per 100,000 population
<b>Method of measurement</b>	PYLL is calculated by subtracting the person's age at death from the reference age. To calculate the PYLL for a particular population in a particular year, the analyst sums the individual PYLLs for all individuals in that population who died in that year.
<b>Calculation method</b>	$\frac{\left( \text{female estimated life expectancy} - \text{mean age at death for premature female deaths} \right) \times \text{number of premature female deaths}}{\text{Female population under estimated life expectancy}} \times 100,000$
<b>Preferred data sources</b>	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries.
<b>Other possible data sources</b>	
<b>NCD framework</b>	Outcome. Expanded indicator.
<b>Disaggregation</b>	Age and other relevant sociodemographic stratifiers where available; e.g., categories; female; age under country-specific estimated life expectancy.

**Expected frequency of data collection**

Annual

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**Limitations**

- Traditional mortality statistics are strongly dominated by the high quantity of deaths among older age groups. This denies the fact that death at a young age is generally considered to be a greater loss to the individual and society compared with death at an older age. The PYLL weighs death at a young age more heavily compared with death at an older age. One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL (1)
  - All future years of life are weighted equally.
  - Annual production of mortality statistics (particularly if stratified) may produce strata with very small numbers that could be problematic.
  - 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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**Data type**

Rate

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**References**

Gardner JW, Sanborn JS. Years of Potential Life Lost-What does it measure? *Epidemiology* 1990; 1:322-329.

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**Related links**

Health Metrics Network:  
Explore ranks and changes for causes or risk factors based on deaths, YLLs, YLDs, and DALYs for 1990 and 2010. Also, see changes in the ranking of causes or risk factors between 1990 and 2010. You can explore these ranks by age group, sex, region, and country.

<http://www.healthmetricsandevaluation.org/gbd/visualizations/gbd-arrow-diagram>

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<b>Name abbreviated</b>	<b>Cancers of the Digestive System Premature Mortality Rates</b> <a href="#">↓</a>
<b>Indicator name</b>	Age-standardized mortality rate per 100,000 population for deaths <70 years due to cancers of the digestive system (ICD10 C15-C26, C48)
<b>Rational</b>	Cancers of the colon, rectum, and stomach are some of the most common in Latin America and are increasing in the Caribbean. Colorectal cancer is the third most common cancer and the third leading cause of cancer death in men and women in the United States (1). Significant morbidity and mortality from cancer of the colon and rectum, oral cavity, and pharynx, can be reduced through timely treatment and preventive actions such as through programs of early detection.
<b>Definition</b>	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.
<b>Unit of measure</b>	Per 100,000 population
<b>Method of measurement</b>	Age-standardized mortality rates per 100,000 for deaths <70 years due to cancers of the digestive system, using the WHO World Standard Population.
<b>Method of estimation/ calculation</b>	<p>The sum of the weighted age-specific mortality rates per 100,000 population (by 5-year age groupings) for deaths &lt;70 years due to cancers of the digestive system, using the WHO World Standard Population. The weights used in the age adjustment of data are the proportion of the standard WHO population within each age group. The weighted rates are then summed across the age groups to give the age-adjusted rate.</p> <p>Midyear resident population over the same calendar year UN population prospect, medium variant</p>
<b>Preferred data sources</b>	Obtained from corresponding mortality registries and population distributions.
<b>Other possible data sources</b>	<p>Sample registration systems; verbal autopsy.</p> <p>The GLOBOCAN project, International Agency for Research on Cancer.</p>

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**NCD framework**

Outcome. Expanded indicator.

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**Disaggregation**

Age, sex, other relevant sociodemographic stratifiers where available; e.g., categories: female, male; age <70 years

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**Expected frequency of data collection**

Every 2 years.

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**Limitations**

- A limitation of the use of data from cancer registries is that they can have different coverage (hospital, subnational population or national population). That can be reflected in the number of cases reported, so underreporting can occur.
  - 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
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**Data type**

Rate

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**References**

1. Siegel R, Desantis C, Jemal A. Colorectal cancer statistics, 2014. *CA Cancer J Clin.* 2014 Mar; 64(2):104-117. Epub 2014 Mar 17.
- 

**Related links**

The GLOBOCAN project. The aim of the project is to provide contemporary estimates of the incidence of, mortality and prevalence from major type of cancers for 184 countries of the world. <http://globocan.iarc.fr/>

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<b>Name abbreviated</b>	<b>Cancers of the Digestive System PYLL</b>
<b>Indicator name</b>	Potential years of life lost (PYLL) rate due to cancer of the digestive system (ICD10 C15-C26, C48)
<b>Rationale</b>	PYLL due to digestive cancer can be used by the public health community and researchers to evaluate the impact of health promotion programs, lifestyle changes, and modification of risk factors to increase the life expectancy of the population
<b>Definition</b>	PYLL is a measure of premature mortality. The PYLL due to cancer of digestive system measures the total number of years each person 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
<b>Unit of measure</b>	Per 100,000 population
<b>Method of measurement</b>	Premature death due to cancer of digestive system
<b>Calculation method</b>	$\frac{\left( \text{estimated life expectancy} - \text{mean age at death for premature deaths} \right) \times \text{number of premature deaths}}{\text{Population under estimated life expectancy}} \times 100,000$
<b>Preferred data sources</b>	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries.
<b>Other possible data source</b>	The GLOBOCAN project, International Agency for Research on Cancer.
<b>NCD framework</b>	Outcome. Expanded indicator.
<b>Disaggregation</b>	Age, sex, and other relevant sociodemographic stratifiers where available; e.g., categories: female, male; age under country-specific estimated life expectancy

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**Expected frequency of data collection**

Annual.

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**Limitations**

- Traditional mortality statistics are strongly dominated by the high quantity of deaths among older age groups. This denies the fact that death at a young age is generally considered to be a greater loss to the individual and society compared with death at an older age. The PYLL weighs death at a young age more heavily compared with death at an older age. One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL (1)
  - All future years of life are weighted equally.
  - Annual production of mortality statistics (particularly if stratified) may produce strata with very small numbers that could be problematic.
  - 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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**Data type**

Rate

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**References**

Gardner JW, Sanborn JS. Years of Potential Life Lost-What does it measure? *Epidemiology* 1990; 1:322-329.

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**Related links**

Health Metrics Network:

Explore ranks and changes for causes or risk factors based on deaths, YLLs, YLDs, and DALYs for 1990 and 2010. Also, see changes in the ranking of causes or risk factors between 1990 and 2010. You can explore these ranks by age group, sex, region, and country.

<http://www.healthmetricsandevaluation.org/gbd/visualizations/gbd-arrow-diagram>

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<b>Name abbreviated</b>	<b>Diabetes Premature Mortality Rates</b>
<b>Indicator name</b>	Age-standardized mortality rate per 100,000 population for deaths <70 years due to underlying cause being diabetes (IC10 E10-E14)
<b>Rationale</b>	Mortality rates of diabetes estimated mostly through information on diabetes as a related cause of death from cardiovascular or amputation complications or renal insufficiency. Long-term complications of diabetes and premature death can be prevented through early screening and disease control. Some of the means to prevent complications and death include improved quality of care, patient education, and self-management.
<b>Definition</b>	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
<b>Unit of measure</b>	Rate per 100,000 population.
<b>Method of measurement</b>	<p>The sum of the weighted age-specific mortality rates per 100,000 population (by 5-year age groupings) for deaths &lt;70 years due to underlying cause being diabetes, using the WHO World Standard Population.</p> <p>Midyear resident population over the same calendar year UN population prospect, medium variant</p>
<b>Method of estimation/ calculation</b>	The sum of the weighted age-specific mortality rates per 100,000 population (by 5-year age groupings) for deaths <70 years due to diabetes, using the WHO World Standard Population. The weights used in the age adjustment of data are the proportion of the standard WHO population within each age group. The weighted rates are then summed across the age groups to give the age-adjusted rate.
<b>Preferred data sources</b>	Obtained from corresponding mortality registries and population distributions.
<b>Other possible data sources</b>	Verbal autopsy; sentinel site surveillance data.

*Core National Indicators – Mortality and Morbidity*

<b>NCD framework</b>	Outcome. Expanded indicator.
<b>Disaggregation</b>	Age, sex, education level, residency, and other relevant sociodemographic stratifies where available; e.g., categories: female, male; age <70 years
<b>Expected frequency of data collection</b>	Annual
<b>Limitations</b>	Issue with potential (and differential) underreporting of diabetes as an underlying cause of death
<b>Data type</b>	Rate
<b>References</b>	
<b>Related links</b>	

<b>Name abbreviated</b>	<b>Diabetes PYLL</b>
<b>Indicator name</b>	Potential years of life lost (PYLL) Rate due to diabetes (ICD10 E10-E14)
<b>Rationale</b>	PYLL due to diabetes can be used by public health officials and researchers to evaluate the impact of screening programs, lifestyle changes, and disease management to increase the life expectancy of the population.
<b>Definition</b>	PYLL is a measure of premature mortality. 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.
<b>Unit of measure</b>	Premature death due to diabetes or a related complication per 100,000 population
<b>Method of measurement</b>	PYLL is calculated by subtracting the person's age at death from the reference age. To calculate the PYLL for a particular population in a particular year, the analyst sums the individual PYLLs for all individuals in that population who died in that year.
<b>Calculation method</b>	$\frac{\left( \text{estimated life expectancy} - \text{mean age at death for premature deaths} \right) \times \text{number of premature deaths}}{\text{Population under estimated life expectancy}} \times 100,000$
<b>Preferred data sources</b>	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries
<b>Other possible data sources</b>	
<b>NCD framework</b>	Outcome. Expanded indicator.

**Disaggregation** Age, sex, education level, residency, and other relevant sociodemographic stratifiers where available; e.g., categories: female, male; age under country-specific estimated life expectancy

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**Expected frequency of data collection** Annual

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**Limitations**

- Traditional mortality statistics are strongly dominated by the high quantity of deaths among older age groups. This denies the fact that death at a young age is generally considered to be a greater loss to the individual and society compared with death at an older age. The PYLL weighs death at a young age more heavily compared with death at an older age. One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL (1)
- All future years of life are weighted equally.
- Annual production of mortality statistics (particularly if stratified) may produce strata with very small numbers that could be problematic.
- 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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**Data type** Rate

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**References** Gardner JW, Sanborn JS. Years of Potential Life Lost-What does it measure? *Epidemiology* 1990; 1:322-329

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**Related links** Health Metrics Network:  
Explore ranks and changes for causes or risk factors based on deaths, YLLs, YLDs, and DALYs for 1990 and 2010. Also, see changes in the ranking of causes or risk factors between 1990 and 2010. You can explore these ranks by age group, sex, region, and country.

<http://www.healthmetricsandevaluation.org/gbd/visualizations/gbd-arrow-diagram>

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<b>Name abbreviated</b>	<b>Chronic Lower Respiratory Diseases Premature Mortality Rates</b>
<b>Indicator name</b>	Age-standardized mortality rate per 100,000 population for deaths <70 years due to lower respiratory diseases (ICD10 J40-J47)
<b>Rationale</b>	Chronic lower respiratory diseases, primarily chronic obstructive pulmonary disease (COPD), are an enormous public health problem and of growing importance due to their high prevalence, elevated morbidity and mortality, and socioeconomic costs. The mortality from lower respiratory diseases has increased by 40% in the past two decades. Elimination of tobacco use is the most effective way to reduce the morbidity and mortality due to lower respiratory diseases: approximately 90% of COPD is attributable to smoking. Other risk factors for lower respiratory diseases include occupational exposure, secondhand smoke, and air pollution (1).
<b>Definition</b>	Age-standardized mortality rates per 100,000 for deaths <70 years due to lower respiratory diseases, using the WHO World Standard Population.
<b>Unit of measure</b>	Per 100,000 population
<b>Method of measurement</b>	Age-standardized mortality rates per 100,000 for deaths <70 years due to underlying cause being chronic lower respiratory disease, by 100,000 population, using the WHO World Standard Population
<b>Method of estimation/ calculation</b>	<p>The sum of the weighted age-specific mortality rates per 100,000 population (by 5-year age groupings) for deaths &lt;70 years due to chronic lower respiratory diseases, using the WHO World Standard Population. The weights used in the age adjustment of data are the proportion of the standard WHO population within each age group. The weighted rates are then summed across the age groups to give the age-adjusted rate.</p> <p>Midyear resident population over the same calendar year UN population prospect, medium variant</p>
<b>Preferred data sources</b>	Obtained from corresponding mortality registries and population distributions.

<b>Other possible data sources</b>	Verbal autopsy
<b>NCD framework</b>	Outcome. Expanded indicator.
<b>Disaggregation</b>	Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available, e.g., categories: female, male; age <70 years
<b>Expected frequency of data collection</b>	Annual.
<b>Limitations</b>	<p>The accuracy of registering chronic lung diseases, including COPD and asthma, as a cause of death is likely low, especially among decedents aged &gt;35 years. The number of contributing causes of death listed on the death certificate may vary according to the person completing the death certificate and geographic region (2).</p> <p>It is well established that serious exacerbations, respiratory failure, cardiovascular diseases, and bronchopulmonary malignancies constitute the principal causes of death in patients with COPD. However, significantly less research exists in asthma patients (3).</p>
<b>Data type</b>	Rate
<b>References</b>	<ol style="list-style-type: none"><li>1. World Health Organization (WHO). World health report 2002. 2002 op. cit.</li><li>2. Maudsley G, Williams EMJ. 'Inaccuracy' in death certification--where are we now? Public Health Med.1996 Mar;18(1):59-66.</li><li>3. Jose Gregorio Soto-Campo et al. Causes of death in asthma, COPD and non-respiratory hospitalized patients: a multicentric study. BMC Pulmonary Medicine 2013, 13:73</li></ol>
<b>Related links</b>	

<b>Name abbreviated</b>	<b>Chronic Lower Respiratory Diseases PYLL</b>
<b>Indicator name</b>	Potential years of life lost (PYLL) due to chronic lower respiratory disease (ICD10 J40-J47)
<b>Rationale</b>	PYLL due to lower respiratory diseases can be used by public health officials and researchers to evaluate the impact of health promotion programs, lifestyle changes, and modification of risk factors to increase the life expectancy of the population.
<b>Definition</b>	PYLL is a measure of premature mortality. 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.
<b>Unit of measure</b>	Per 100,000 population
<b>Method of measurement</b>	PYLL is calculated by subtracting the person's age at death from the reference age. To calculate the PYLL for a particular population in a particular year, the analyst sums the individual PYLLs for all individuals in that population who died in that year.
<b>Method of estimation/calculation</b>	$\frac{\left( \text{estimated life expectancy} - \text{mean age at death for premature deaths} \right) \times \text{number of premature deaths}}{\text{Population under estimated life expectancy}} \times 100,000$
<b>Preferred data sources</b>	Obtained from corresponding mortality registries and WHO life expectancy tables for specific countries.
<b>Other possible data sources</b>	
<b>NCD framework</b>	Outcome. Expanded indicator
<b>Disaggregation</b>	Age, sex, other relevant sociodemographic stratifiers where available; e.g.,

categories: female, male; age under country-specific estimated life expectancy

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**Expected frequency of data collection**

Annual.

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**Limitations**

- Traditional mortality statistics are strongly dominated by the high quantity of deaths among older age groups. This denies the fact that death at a young age is generally considered to be a greater loss to the individual and society compared with death at an older age. The PYLL weighs death at a young age more heavily compared with death at an older age. One of the problems is that death at a young age seems sometimes to be too heavily weighted in calculating the PYLL (1)
  - All future years of life are weighted equally.
  - Annual production of mortality statistics (particularly if stratified) may produce strata with very small numbers that could be problematic.
  - 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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**Data type**

Rate

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**References**

1. Gardner JW, Sanborn JS. Years of Potential Life Lost-What does it measure? *Epidemiology* 1990; 1:322-329.
- 

**Related links**

Health Metrics Network:  
Explore ranks and changes for causes or risk factors based on deaths, YLLs, YLDs, and DALYs for 1990 and 2010. Also, see changes in the ranking of causes or risk factors between 1990 and 2010. You can explore these ranks by age group, sex, region, and country.

<http://www.healthmetricsandevaluation.org/gbd/visualizations/gbd-arrow-diagram>

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**Related links**

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<b>Name abbreviated</b>	<b>Road Traffic Injury Mortality Rates</b>
<b>Indicator name</b>	Mortality rate due to road traffic injuries/100,000 inhabitants all ages, by sex
<b>Rationale</b>	Road traffic injuries constitute a major public health problem. Road traffic casualties are among the leading causes of deaths in most countries in the Region of the Americas. The majority of such deaths occur among young males. Road traffic crashes also contribute to a large number of injuries and disabilities. This indicator measures the risk or probability of a person to be killed by a traffic crash in a specific period of time.
<b>Definition</b>	Number of traffic-related deaths among a specified group of people (population) that occurred in a specific time period divided by the total population.
<b>Unit of measure</b>	Road traffic deaths/100,000 population
<b>Method of measurement</b>	Health care information is collected on visits of victims of road traffic accidents to emergency and outpatients' departments of the major hospitals. Also Traffic Police Department information was is collected on all accidents that occurred in the region.
<b>Method of estimation/ calculation</b>	<p>Numerator/denominator * 100,000</p> <ul style="list-style-type: none"> <li>• Number of traffic-related deaths among a specified group of people in a specific year</li> <li>• Midyear resident population over the same calendar year UN population prospect, medium variant</li> </ul>
<b>Preferred data sources</b>	Ministry of Health, Ministry of Transport and Police Department in each country.
<b>Other possible data sources</b>	World Report on road traffic injury prevention (WHO) Health situation in the Americas, Basic Indicators 2008 (PAHO)
<b>NCD framework</b>	Outcome. Expanded indicator.

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<b>Disaggregation</b>	Age, sex, and other relevant sociodemographic stratifiers where available.
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<b>Expected frequency of data collection</b>	Annual
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<b>Limitations</b>	This indicator is useful to make comparisons, but its limitations include under-registration of deaths and the age composition of the population, which vary between countries.
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<b>Data type</b>	Rate
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<b>References</b>	Health situation in the Americas, Basic Indicators 2008 (PAHO)
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<b>Related links</b>	World report on road traffic injury prevention (WHO) <a href="http://www.who.int/violence_injury_prevention/publications/road_traffic/world_report/en/">http://www.who.int/violence_injury_prevention/publications/road_traffic/world_report/en/</a>
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## Behavioral Risk Factors Indicators

Target	Indicator	NCD Framework
<p><b>NCD target #2:</b> At least 10% relative reduction in the harmful use of alcohol.</p> 	<p><b>Harmful Use of Alcohol: Adult per Capita Consumption:</b> Total (recorded and unrecorded) alcohol per capita (15+ years old) consumption within a calendar year in liters of pure alcohol as appropriate within the national context</p>	<p><b>GMF # 3</b> <b>NCD PoA # 2.2.1</b> <b>SP # 2.1.1</b></p>
	<p><b>Harmful Use of Alcohol: Heavy Episodic Drinking:</b> Age-standardized prevalence of heavy episodic drinking (15+ years old) as appropriate, within the national context</p>	<p><b>GMF # 4</b> <b>NCD PoA # 2.2.1</b> <b>SP # 2.1.1</b></p>
	<p><b>Harmful Use of Alcohol: Prevalence of Alcohol Use Disorders:</b> Alcohol-related morbidity among adolescents and adults, as appropriate within the national context</p>	<p><b>GMF # 5</b> <b>NCD PoA # 2.2.1</b> <b>SP # 2.1.1</b></p>
<p><b>NCD target #3:</b> 10% relative reduction in prevalence of insufficient physical activity</p> 	<p><b>Physical Inactivity in Adolescents:</b> Prevalence of insufficiently physically active adolescents, defined as less than 60 minutes of moderate to vigorous intensity activity daily</p>	<p><b>GMF # 6</b> <b>NCD PoA # 2.4.2</b> <b>SP # 2.1.3</b></p>
	<p><b>Physical Inactivity in Adults:</b> Age-standardized prevalence of insufficiently active persons aged 18+ years, defined as less than 150 minutes of moderate-intensity activity per week, or equivalent</p>	<p><b>GMF # 7</b> <b>NCD PoA # 2.4.1</b> <b>SP # 2.1.3</b></p>
<p><b>NCD target # 4:</b> 30% relative reduction in mean population intake of salt, with aim of achieving recommended level of less than 5 grams per person per day</p> 	<p><b>Salt Intake:</b> Age-standardized mean population intake of salt (sodium chloride) per day in grams, in persons aged 18+</p>	<p><b>GMF # 8</b> <b>NCD PoA # 2.3.3</b> <b>SP # 2.1.2</b></p>
	<p><b>Behaviors towards Dietary Salt:</b> Age-standardized prevalence of the adult population regularly limiting dietary salt intake</p>	<p>Expanded # 23</p>
	<p><b>Saturated Fat:</b> Age-standardized mean proportion of total energy intake from saturated</p>	<p><b>GMF # 15</b></p>

Core National Indicators – Behavioral Risk Factors

	fatty acids in persons aged 18+ years	
	<b>Low Fruit and Vegetable Consumption:</b> Age-standardized prevalence of adult (aged 18+ years) population consuming less than five total servings (400 grams) of fruit and vegetables per day	<b>GMF # 16</b>
<b>NCD target # 5: 30% reduction in prevalence of current tobacco smoking</b>  	<b>Tobacco Use in Adolescents:</b> Prevalence of current tobacco use among adolescents	<b>GMF# 9 NCD PoA # 2.1.1 SP # 2.1.1</b>
	<b>Tobacco Use in Adults:</b> Age-standardized prevalence of current tobacco use among person aged 18+ years	<b>GMF # 10 NCD PoA# 2.1.1 SP # 2.1.1</b>
	<b>Tobacco Smoking:</b> Current and past tobacco smoking status among persons aged 15 + years	Expanded # 24
	<b>Smokeless Tobacco Use:</b> Prevalence of smokeless tobacco use	Expanded# 25
	<b>Tobacco Smoking Consumption:</b> Number of tobacco products smoked per day	Expanded 26)
	<b>Smoking Cessation:</b> Prevalence of current tobacco smokers who have tried to quit during the past 12 months	Expanded# 27
	<b>Exposure to Secondhand Smoke:</b> Prevalence of secondhand smoke exposure in the home and in the workplace	Expanded# 28



**Name abbreviated**

**Harmful Use of Alcohol: Adult Per Capita Consumption**

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**Indicator name**

Total (recorded and unrecorded) alcohol per capita (15+ years old) consumption within a calendar year in liters of pure alcohol

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**Rationale**

Reducing alcohol-attributable disease burden is a global public health priority as affirmed by the WHO Global Strategy to Reduce the Harmful Use of Alcohol (1). The strategy defines the harmful use of alcohol as drinking that causes detrimental health and social consequences for the drinker (harmful drinking), the people around the drinker and society at large, as well as patterns of drinking that are associated with increased risk of adverse health outcomes (hazardous drinking). It is estimated that 3.3 million deaths annually, or 5.9 per cent of all global deaths, are attributed to alcohol consumption, from which more than half are due to NCDs including mental disorders, cancers and cardiovascular diseases (2). The risk of most alcohol-attributable health conditions is correlated with the overall levels of alcohol consumption with no evidence of a threshold effect for cancers and hypertension (3).

The indicator is sensitive to policy changes; it correlates with alcohol specific mortality, depending on the prevalence of heavy episodic drinkers and dependent drinkers.

**Definition**

Total (recorded and unrecorded) alcohol per capita (APC) consumption among persons 15+ years of age within a calendar year in liters of pure alcohol, as appropriate, within the national context.

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**Unit of measure**

Liters of pure alcohol (ethanol) per year per person aged 15+ (recorded and unrecorded)

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**Method of measurement**

Recorded adult per capita consumption is calculated as the sum of beverage-specific (beer, wine, spirits, and other) consumption of pure alcohol during a given calendar year, based on data from various sources. The priority in calculations of recorded per capita alcohol consumption is given to government statistics on sales of alcoholic beverages during a calendar year or data on production, export, and import of alcohol in different beverage categories. In countries where data on government sales or production are not available, calculations are based on country-specific and publicly available data from the private sector, including alcohol producers, or on country-specific data from the United Nations Food and Agriculture Organization statistical database (FAOSTAT), which also may include estimates of unrecorded alcohol consumption. For main categories of alcohol beverages, “beer” includes malt beers, “wine” includes wine made from grapes, “spirits” include all distilled beverages, and “other” includes one or several other alcoholic beverages, such as fermented beverages made from sorghum, maize, millet, and rice, or cider, fruit wine, fortified wine. Estimates of unrecorded alcohol consumption are largely based on survey data, FAOSTAT data, other data sources such as customs or police reports, and expert opinions.

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**Method of estimation/calculation**

Total sum of recorded and unrecorded alcohol consumed in a population during a calendar year divided by midyear resident population aged 15+ for the same calendar year.

Numerator/denominator\*100

- Numerator from national sources (most complete data):  
Alcohol production + alcohol imports + informal alcohol production+ consumption overseas + duty free consumption- tourism consumption– alcohol exports- alcohol re-exports + additional stocks
- Denominator: Midyear resident population aged 15+ for the same calendar year. UN population prospect, medium variant

WHO utilizes all the information available in region and country levels to provide estimates of per capita consumption by country and for the region.

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**Preferred data sources**

Administrative reporting systems for recorded per capita alcohol consumption; survey data are the preferred sources for unrecorded per capita alcohol consumption.

**Other possible data sources** Data sets of FAO and the UN Statistical Office, as well as expert opinions on unrecorded alcohol consumption. WHO also uses public-information sources from the alcohol industry and develops estimates for all countries, which are then sent for approval to the respective MOH. WHO has estimates available for all countries in the Region at the Global Information System on Alcohol and Health (GISAH), which has an interface with the Regional Information System on Alcohol and Health (AMRISAH), the system for the Region of the Americas. The WHO Global Status Report on Alcohol and Health 2014 is the data source for this indicator's baseline, and is based on the last iteration with Member States in 2012 through a global survey responded by officially nominated focal points in each MOH. The population data for the report were obtained primarily from the United Nations Population Division and refer to the total population aged 15 years and older, with data for males and females shown separately whenever available

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**NCD framework** Risk factor exposure.

- Goal specific indicator for WHO voluntary target # 2: 10% relative reduction in overall consumption of alcohol (including hazardous and harmful drinking)
- Outcome indicator for:
  - WHO's global monitoring framework # 3
  - Regional NCD Action Plan 2013 – 2019 # 2.2.1
  - SP # 2.1.1

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**Disaggregation** Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available

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**Expected frequency of data collection** Annual

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**Limitations** Most countries in the region do not currently provide sales data on alcoholic beverages and, therefore, estimates are carried out by WHO using data from FAO and the alcohol industry (economic operators). Data on unrecorded alcohol consumption is largely based on empirical investigations and the judgment of experts.

Potential limitations include:

- incomplete administrative records,
- bias through self-reporting, including underreporting of alcohol consumption, misunderstanding or misinterpretation of questions or of the size of a standard drink, and limited validity of survey instruments

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**Data type**

Volume expressed in liters.

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**References**

1. *Global strategy to reduce the harmful use of alcohol*. Geneva, World Health Organization, 2010.  
[http://www.who.int/substance\\_abuse/activities/gsrhua/en/](http://www.who.int/substance_abuse/activities/gsrhua/en/)
  2. *Global health risks: mortality and burden of disease attributable to selected major risks*. Geneva, World Health Organization, 2009.
  3. Rehm J et al. The relation between different dimensions of alcohol consumption and burden of disease - an overview. *Addiction*, 2010, 105(5).817-843.
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**Related links**

The WHO Global Information System on Alcohol and Health (GISAH)  
<http://apps.who.int/gho/data/view.main?showonly=GISAH>  
Global status report on alcohol and health 2014  
[http://www.who.int/substance\\_abuse/publications/global\\_alcohol\\_report/en/](http://www.who.int/substance_abuse/publications/global_alcohol_report/en/)





**Name  
abbreviated**

**Harmful Use of Alcohol: Heavy Episodic Drinking**



**Indicator name**

Age-standardized prevalence of heavy episodic drinking

**Rationale**

Prevalence of heavy episodic drinking (HED) is considered the best indicator for describing the pattern of alcohol consumption associated with multiple negative health outcomes. The volume of alcohol consumed on a single occasion is important for many acute consequences of drinking such as alcohol poisoning, injury, and violence; it is also important wherever intoxication is socially disapproved of. HED is associated with detrimental consequences, even if the average level of consumption of the person concerned is relatively low

**Definition**

Heavy episodic drinking among those aged 15 years of age and older is defined as those who report drinking 6 (60 grams) or more standard drinks in a single drinking occasion at least once monthly.

A consumption of 60 grams of pure alcohol corresponds approximately to 6 standard alcoholic drinks. According to WHO's definition one standard drink equates to 10 grams of pure alcohol.

**Unit of measure**

Percent of the total population 15+ years of age who report a heavy episodic drinking episode at least once a month, by sex

**Method of  
measurement**

Self-report

*During the past 30 days, how many times did you have **six or more** standard drinks in a single drinking occasion?*

- *Number of times*
- *Don't know*

**Method of estimation/calculation**

Adults reporting consuming 60 grams or more of pure alcohol on at least one occasion monthly.

Numerator/denominator\*100

- Numerator: The number of respondents (15+ years) who reported drinking 60 grams or more of pure alcohol on at least one occasion monthly.
- Denominator: The total number of participants (15+ years) in the survey.

To calculate the age-standardized prevalence of heavy episodic drinking requires the application of age-specific heavy episodic drinking prevalence rates to the WHO World Standard Population summed over all ages (15+ years old). It is also possible to calculate the percentage of HED for those aged 15-19 years of age, as percentage of drinkers in the population aged 15+ years old.

The Global Information System on Alcohol and Health provides these indicators, with 95% confidence intervals.

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**Preferred data sources**

Population-based (preferably nationally representative) survey

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**Other possible data sources**

STEPwise approach to surveillance (STEPS)/Pan American STEPS

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**NCD framework**

Risk factor exposure

- Goal specific indicator for WHO voluntary target #2: 10% relative reduction in overall consumption of alcohol (including hazardous and harmful drinking)
- Outcome indicator for:
  - WHO's global monitoring framework # 4
  - Regional NCD Action Plan 2013 – 2019 # 2.2.1
  - SP # 2.1.1

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**Disaggregation** Age, sex, other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.

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**Expected frequency of data collection** Every 5 years

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**Limitations** Potential limitations include:

- bias through self-report, including underreporting of alcohol consumption
- misunderstanding/-interpretation of questions and/or size of a standard drink
- limited validity of survey instruments

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**Data type** Prevalence (expressed as percentage with 95% confidence interval)

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**References** Global status report on alcohol and health 2014  
[http://www.who.int/substance\\_abuse/publications/global\\_alcohol\\_report/en/](http://www.who.int/substance_abuse/publications/global_alcohol_report/en/)

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**Related links** STEPwise approach to surveillance (STEPS)  
<http://www.who.int/chp/steps/en/>



**Name abbreviated**

**Harmful Use of Alcohol: Prevalence of Alcohol Use Disorders**

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**Indicator name**

Prevalence of alcohol use disorders among adolescents and adults, as appropriate within the national context

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**Rationale**

It is important to grasp the extent of the health consequences related to the consumption of alcohol in a population. Alcohol use disorders comprise an array of disorders attributable to alcohol and therefore reveal an important proportion of a population which suffers from the direct impact of alcohol. According to the 2010 Global Burden of Diseases (GBD), alcohol use is the fifth leading risk factor for the global burden of disease, an increase compared to 1990, when alcohol ranked as the eighth risk factor. Countries of the Americas experience a problem of higher magnitude than the global average (1), and women in the Americas experience the highest prevalence of alcohol use disorders in the world.

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**Definition**

Persons 15 years of age who suffer from disorders attributable to the consumption of alcohol (according to ICD-10: F10.1 Harmful use of alcohol; F10.2 Alcohol dependence) during a given calendar year. Harmful use of alcohol is defined as a pattern of alcohol use that is causing damage to health, with the damage being physical (as in cases of liver cirrhosis) or mental (as in cases of depressive episodes secondary to heavy consumption of alcohol).

Alcohol dependence (also known as alcoholism or alcohol dependence syndrome) is defined as a cluster of behavioral, cognitive, and physiological phenomena that develop after repeated alcohol use and that typically include a strong desire to consume alcohol, difficulties in controlling its use, persisting in its use despite harmful consequences, a higher priority given to alcohol use than to other activities and obligations, increased tolerance, and sometimes and psychological withdrawal state.

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**Unit of measure**

Percentage of AUDs according to ICD-10 codes F10.1 and F10.2 in the general population 15 years of age and older

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**Method of measurement**

Self-report

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**Method of estimation/calculation**

- Numerator: Number of adults (15+ years) with a diagnosis of F10.1, F10.2 during a calendar year.
  - Denominator: Midyear resident population (15+ years) over the same calendar year. UN World Population Prospects, medium variant.
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**Preferred data sources**

Updated information on population-based (preferably nationally representative) surveys using validated instruments is available from:  
<http://apps.who.int/gho/data/view.main?showonly=GISAH>

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**Other possible data sources**

Additional health services reporting systems may provide complementary or confirmatory information regarding to the frequency and severity of alcohol use disorders.

Data on the prevalence of people with AUDs were modeled using WHO regression models. Where available, the original survey data on the measures of interest (harmful use of alcohol and alcohol dependence) were used instead of the predicted estimates. The regression models used data collected through a systematic search of all survey data on the measures of interest from 2000 onward, and took into account per capita consumption, population structure, the size of the Muslim population in the country, the region of the country, and the year from which the survey data were obtained. The validity of the predicted estimates was assessed by comparing predicted estimates with the survey data.

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**NCD framework**

Risk factor exposure

- Goal specific indicator for WHO voluntary target #2: 10% relative reduction in overall consumption of alcohol (including hazardous and harmful drinking)

- Outcome indicator for:
  - WHO’s global monitoring framework # 5
  - Regional NCD Action Plan 2013 – 2019 # 2.2.1
  - SP # 2.1.1

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**Disaggregation** Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.

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**Expected frequency of data collection** Every 5 years

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**Limitations** Potential limitations include:

- bias through self-reporting, including underreporting,
- misunderstanding or misinterpretation of questions, and limited validity of survey instruments

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**Data type** Prevalence (expressed as percentage with 95% confidence interval)

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**References**

1. Vilma Pinheiro Gawryszewski<sup>1</sup> & Maristela G. Monteiro: Mortality from diseases, conditions and injuries where alcohol is a necessary cause in the Americas, 2007–09. Society for the Study of Addiction

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**Related links** The WHO Global Information System on Alcohol and Health (GISAH)  
<http://apps.who.int/gho/data/view.main?showonly=GISAH>

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<b>Name abbreviated</b>	<b>Physical Inactivity in Adolescents</b>
<b>Indicator name</b>	Prevalence of insufficient physical activity in adolescents 13 - 17 years of age
<b>Rationale</b>	<p>Monitor each country progress in its levels of physical activity among adolescents 13-17 years old.</p> <p>Physical activity provides fundamental health benefits for children and youth, including increased cardiovascular fitness and muscular strength, a reduction in body fat, and improved cardiovascular [and metabolic disease risk profile. Physical activity also reduces stress and symptoms of depression (1, 2, 3). Available evidence supports the hypothesis that maintaining high amounts and intensities of physical activity starting in childhood and continuing into adult years will enable people to maintain a favorable risk profile and lower rates of morbidity and mortality from cardiovascular disease and diabetes later in life (1). An overall evaluation of the evidence suggests that important health benefits can be expected to accrue in most children and youth who accumulate 60 or more minutes of moderate to vigorous physical activity daily (1,2,3).</p>
<b>Definition</b>	Percentage of adolescents participating in less than 60 minutes of moderate to vigorous intensity physical activity daily.
<b>Unit of measure</b>	Minutes of moderate to vigorous intensity physical activity
<b>Method of measurement</b>	<p>Self-reported method using the standardized questionnaires GPAQ or IPAQ.<sup>17</sup></p> <p><i>During the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day? ADD UP ALL THE TIME YOU SPENT IN ANY KIND OF PHYSICAL ACTIVITY EACH DAY.</i></p> <ul style="list-style-type: none"> <li>• 0 days</li> </ul>

<sup>17</sup> See [http://www.who.int/chp/steps/resources/GPAQ\\_Analysis\\_Guide.pdf](http://www.who.int/chp/steps/resources/GPAQ_Analysis_Guide.pdf)

- 
- 1 day
  - 2 days
  - 3 days
  - 4 days
  - 5 days
  - 6 days
  - 7 days
- 

**Method of estimation/calculation**

Numerator/Denominator \* 100

- Numerator: number of individuals not meeting the recommended amount of physical activity, i.e., < 60 minutes of moderate to vigorous intensity physical activity.
  - Denominator: total number of persons surveyed
- 

**Preferred data sources**

- Global School Health Survey<sup>18</sup>
  - National representative surveys: the countries conduct these surveys every four to five years; they provide accurate measurements and representative national sample
  - Frequent surveillance data, such as CDC’s Behavioral Risk Factor Surveillance System and Brazil’s Vigitel
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**Other possible data sources**

GSHS and e-GSHS based on a self-administered questionnaire

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**NCD framework**

Risk factor exposure

- Goal Specific Indicator for Voluntary Target # 3: 10% relative reduction in prevalence of insufficient physical activity
- Outcome indicator for:
  - WHO’s global monitoring framework # 9
  - Regional NCD Action Plan 2013 – 2019 # 2.4.1
  - SP # 2.1.3

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<sup>18</sup> See [http://new.paho.org/saludyescuelas/index.php?option=com\\_k2&view=item&id=145&Itemid=190&lang=en](http://new.paho.org/saludyescuelas/index.php?option=com_k2&view=item&id=145&Itemid=190&lang=en)

**Disaggregation** Age, sex, residence other relevant sociodemographic stratifiers such as parental education level and household socioeconomic status where available.

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**Expected frequency of data collection** Every 5 years

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**Limitations**

- Bias through self-report, including over-reporting of physical inactivity
- misunderstanding/-interpretation of questions
- limited validity of survey instruments
- Enumerators (census takers) should undergo training before conducting surveys.
- Limited representativeness of the sample (national, subnational)
- Limited access to disaggregated data to produce the standardized estimates

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**Data type** Prevalence (expressed as percentage with 95% confidence interval)

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**References**

1. World Health Organization. Global recommendations on physical activity for Health. Geneva: WHO; 2010. Available from: [http://whqlibdoc.who.int/publications/2010/9789241599979\\_eng.pdf?ua=1](http://whqlibdoc.who.int/publications/2010/9789241599979_eng.pdf?ua=1)
  2. World Health Organization. Global Recommendation on Physical Activity for Health. 5-17 years old. Available from: <http://www.who.int/dietphysicalactivity/physical-activity-recommendations-5-17years.pdf?ua=1>
  3. World Health Organization. Global strategy on diet, physical activity and health [Internet]. Geneva: WHO; 2004. Available from: [http://www.who.int/dietphysicalactivity/strategy/eb11344/strategy\\_english\\_web.pdf](http://www.who.int/dietphysicalactivity/strategy/eb11344/strategy_english_web.pdf)
- 

**Related links**

PAHO e-GSHS Electronic Data Base:  
[http://www.paho.org/SALUDYESCUELAS/index.php?option=com\\_k2&view=item&id=145&Itemid=190&lang=en](http://www.paho.org/SALUDYESCUELAS/index.php?option=com_k2&view=item&id=145&Itemid=190&lang=en)

Global school-based student health survey (GSHS)  
<http://who.int/chp/gshs/en/>





<b>Name abbreviated</b>	<b>Physical Inactivity in Adults</b>
<b>Indicator name</b>	Age-standardized prevalence of insufficient physical activity in adults
<b>Rationale</b>	<p>Monitor each country’s progress in its levels of physical-activity among adults.</p> <p>Insufficient physical activity is the fourth leading risk factor for mortality (1). Approximately 3.2 million deaths and 32.1 million DALYs (representing about 2.1% of global DALYs) each year are attributable to insufficient physical activity (1). People who are insufficiently physically active have a 20-30% increased risk of all-cause mortality compared to those who engage in at least 150 minutes of moderate-intensity activity per week, or equivalent (2, 3). Participation in this recommended amount of physical activity is estimated to reduce the risk of ischemic heart disease by approximately 30%, the risk of diabetes by 27%, and the risk of breast and colon cancer by 21-25% (1, 2, 3). Additionally, physical activity lowers the risk of stroke, hypertension and depression. It is a key determinant of energy expenditure and thus fundamental to energy balance and weight control (2, 3).</p>
<b>Definition</b>	Prevalence of adults 18 years old and older that do not engage in at least 150 minutes of moderate physical activity each week.
<b>Unit of measure</b>	Minutes of moderate-intensity activity.
<b>Method of measurement</b>	Self-report based on IPAQ/GPAG questionnaire
<b>Method of estimation/ calculation</b>	The Global Physical Activity Questionnaire GPAQ covers several components of physical activity, such as intensity, duration, and frequency, and it assesses three domains in which physical activity is performed

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(occupational physical activity, transport-related physical activity, and physical activity during discretionary or leisure time).

Prevalence of physical inactivity: individuals not meeting the recommended amount of physical activity, divided by the total number of individuals surveyed, times 100.

Numerator/denominator\*100

- Numerator: Respondents <18 years that do not engage in at least 150 minutes of moderate physical activity each week.
- Denominator: Total number of respondents <18 in the survey

GPAQ or the IPAQ questionnaires. 100 – (the % of physically active >18y.o.)

To calculate the age-standardized prevalence of insufficiently physically active persons aged 18+ years requires application of age- specific insufficiently physically active prevalence rates to the WHO World Standard Population summed over all ages..

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**Preferred data sources**

- National representative surveys: these are surveys conducted every four to five years by the countries, which provide accurate measurements and representative national samples. Data is collected by national surveys by Ministry of Health (MOH) and/or the National Office of Statistics and is based in the application of either GPAQ or the IPAQ questionnaires.

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**Other possible data sources**

- STEPS/Pan American Steps risk factor surveys, which includes GPAG questionnaire.
- Frequent surveillance data, such as CDC’s the Behavioral Risk Factor Surveillance System or Brazil’s Vigitel

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**NCD framework**

Risk factor exposure.

- Goal Specific Indicator for Voluntary Target # 3: 10% relative reduction in prevalence of insufficient physical activity
- Outcome indicator for:

- WHO’s global monitoring framework # 7
- Regional NCD Action Plan 2013 – 2019 # 2.4.1
- SP # 2.1.3

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**Disaggregation** Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.

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**Expected frequency of data collection** At least every five years, although it is desirable that measurements of physical inactivity be monitored every year using a phone-survey methodology

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**Limitations** The major two constraints with this indicator are: (i) the periodicity of national surveys: about every 4 years and (ii) the limited number of countries currently running national representative surveys covering physical activity.

Other potential limitations include:

- Bias through self-report, including underreporting of insufficient physical activity
- misunderstanding/-interpretation of questions and/or size of a standard drink
- limited validity of survey instruments
- enumerators should undergo comprehensive training before conducting surveys
- limited representativeness of the sample (national, subnational)
- limited access to disaggregated data to produce the standardized estimates.

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**Data type** Prevalence (expressed as percentage with 95% confidence interval)

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- References**
1. *Global Health Risks: mortality and burden of disease attributable to selected major risks*. Geneva, World Health Organization, 2009.
  2. *Global recommendations on physical activity for health*. Geneva, World Health Organization, 2010
  3. Physical Activity Guidelines Advisory Committee (PAGAC). *Physical Activity Guidelines Advisory Committee Report, 2008*. Washington, DC, US Department of Health and Human Services, 2008.

**Related links**

1. World Health Organization. Global recommendations on physical activity for Health. Geneva: WHO; 2010. Available from:  
[http://whqlibdoc.who.int/publications/2010/9789241599979\\_eng.pdf?ua=1](http://whqlibdoc.who.int/publications/2010/9789241599979_eng.pdf?ua=1)
2. World Health Organization. Global Recommendation on Physical Activity for Health. 18-64 years old. Available from:  
<http://www.who.int/dietphysicalactivity/physical-activity-recommendations-18-64years.pdf?ua=1>
3. World Health Organization. Global strategy on diet, physical activity and health [Internet]. Geneva: WHO; 2004. Available from:  
[http://www.who.int/dietphysicalactivity/strategy/eb11344/strategy\\_english\\_w eb.pdf](http://www.who.int/dietphysicalactivity/strategy/eb11344/strategy_english_w eb.pdf)



**Name abbreviated**

**Salt Intake**



**Indicator name**

Age-standardized mean population intake of salt (sodium chloride) per day in grams in persons aged 18+ years

**Rationale**

The amount of dietary salt (sodium chloride) consumed is an important determinant of blood pressure levels and of hypertension and overall cardiovascular risk (1). A salt intake of less than 5 grams (approximately 2g sodium) per person per day is recommended by WHO for the prevention of cardiovascular diseases, the leading cause of death globally (2). However, data from various countries indicate that most populations are consuming much more salt than recommended (3, 4). In many high income countries, approximately 75 per cent of salt in the diet comes from processed foods and meals prepared outside the home. In many low- and middle-income countries, most sodium consumption comes from salt added at home in cooking and at the table or through condiments such as fish sauce and soy sauce.

The average intake of salt/sodium in population is in direct relation to the level of blood pressure in the population. Reducing overconsumption of salt is the most cost-effective for the prevention of high blood pressure in the population, which is the main risk factor death from cardiovascular disease.

Decreasing dietary salt intake from the current global levels of 9 -12 grams per day to the recommended level of less than 5 grams per day would have a major impact on blood pressure and cardiovascular disease, averting up to 2.5 million deaths due to heart attacks and stroke worldwide each year (5).

**Definition**

Mean population intake of salt in grams

**Unit of measure**

Grams of salt based on 24- hour urine sodium (Na)

**Method of**

Measurement of sodium/salt excretion in urine to estimate consumption. The

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<b>measurement</b>	gold-standard for estimating salt intake is through determining sodium excretion in 24-hour urine, however other methods such as spot urines and food frequency surveys may be more feasible to administer at the population level.
<b>Method of estimation/ calculation</b>	<p>Urine Na</p> <p>Numerator/Denominator (expressed in gr/person/day)</p> <ul style="list-style-type: none"><li>• Numerator: Sum of all levels of sodium in 24-hour urine in the adult population participating in the survey</li><li>• Denominator: all participants in the study.</li></ul> <p>To calculate the age-standardized mean population intake of salt (sodium chloride) per day in grams in persons aged 18+ years requires application of age-specific mean population intake of salt to the WHO World Standard Population summed over all ages. The process of age-standardization is explained in Appendix 1.</p>
<b>Preferred data sources</b>	<p>National surveys (Pan Am STEPs or National Nutrition Study)</p> <p>PAHO has a protocol for determining the levels of sodium in 24 hour urine that is at disposal for the countries to be included in national risk factor studies, mainly, Pan Am STEPs:</p> <p><a href="http://www.paho.org/hq/index.php?option=com_content&amp;view=article&amp;id=1928&amp;Itemid=259&amp;lang=en">http://www.paho.org/hq/index.php?option=com_content&amp;view=article&amp;id=1928&amp;Itemid=259&amp;lang=en</a></p>
<b>Other possible data sources</b>	Other population-based (preferably nationally representative) survey such as Household Food Consumption and Anthropometric Surveys that collect salt excretion in urine are standardized survey.
<b>NCD framework</b>	<p>Risk factor exposure</p> <ul style="list-style-type: none"><li>• Goal specific indicator for WHO voluntary target # 4: 30% relative reduction in mean population intake of salt/sodium</li><li>• Outcome indicator for:<ul style="list-style-type: none"><li>○ WHO’s global monitoring framework # 8</li><li>○ Regional NCD Action Plan 2013 – 2019 # 2.3.3</li><li>○ SP # 2.1.7</li></ul></li></ul>

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**Disaggregation** Age, sex, education level, residency and other relevant sociodemographic stratifiers where available.

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**Expected frequency of data collection** Every 5 years

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**Limitations** Potential limitation: measurement error; limited number of the countries collecting data frequently on salt consumption at the population level.

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**Data type** Mean (reported with 95% confidence interval)

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**References**

1. *Creating an enabling environment for population-based salt reduction strategies: report of a joint technical meeting held by WHO and the Food Standards Agency, United Kingdom.* Geneva, World health Organization, 2010.
  2. *Prevention of cardiovascular disease: pocket guidelines for assessment and management of cardiovascular risk.* Geneva, World Health Organization, 2007.
  3. Brown IJ et al. Salt intakes around the world: implications for public health. *International Journal of Epidemiology*, 2009, 38:791-813.
  4. Cappuccio F et al. Policy options to reduce population salt intake. *British Medical Journal*, 2011, 343:d499
  5. He FJ, MacGregor GA. A comprehensive review on salt and health and current experience of worldwide salt reduction programmes. *Journal of Human Hypertension*, 2009, 23:363-384.
- 

**Related links**

**Name abbreviated** **Behaviors towards Dietary Salt**

**Indicator name** Age-standardized prevalence of the adult population regularly limiting dietary salt intake.

**Rationale**

Reducing dietary salt has been recommended by the World Health Organization as a way to improve population health. Consequently, programs to reduce population salt intake have been identified as a cost-effective action that should be undertaken immediately to produce accelerated results in terms of lives saved, disease prevented, and costs avoided.

Population knowledge, attitudes, and behaviors are thought to influence salt consumption and are considered modifiable mediating factors (1). As such, salt reduction efforts often include interventions to raise consumer awareness. The objective of this indicator is to describe knowledge, attitudes, and behaviors towards salt so as to provide insight into the likely effectiveness of salt reduction efforts that are based primarily on health promotion and education.

**Definition** Percentage of respondents who attempted to control salt intake on a regular basis.

**Unit of measure** Respondents who attempted to control salt intake on a regular basis

**Method of measurement**

Self-report.

*Do you do anything of the following on a regular basis to control your salt intake?(2)(RECORD FOR EACH)*

Avoid/minimize consumption of processed foods	Yes	1
	No	2
Look at the salt or sodium labels on food	Yes	1
	No	2
Do not add salt on the table	Yes	1
	No	2



**Limitations** Potential limitations include:

- bias through self-report
- as with attitudes, intentions are not always a reliable predictor of behavior since actual actions may not be taken despite the intention

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**Data type** Prevalence (expressed as percentage with 95% confidence interval for the estimate)

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**References**

1. Sarmugam R, Worsley A, Wang W. An examination of the mediating role of salt knowledge and beliefs on the relationship between sociodemographic factors and discretionary salt use: a cross-sectional study. *Int J Behav Nutr Phys Act* 2013
2. Salt module questionnaire included into STEPwise approach to surveillance (STEPS) instrument 3.1 <http://www.who.int/chp/steps/instrument/en/>

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**Related links** The WHO STEPwise approach to Surveillance (STEPS)  
<http://www.who.int/chp/steps/en/index.html>

Name abbreviated	Saturated Fat
<b>Indicator name</b>	Age-standardized mean proportion of total energy intake from saturated fatty acids in persons aged 18+ years
<b>Rationale</b>	Excessive dietary fat intake has been linked to increased risk of obesity, coronary heart disease and certain types of cancer (1, 2, 3). High consumption of saturated-fatty acids (SFA) is widely considered a risk factor for cardiovascular disease. In 2002, the joint WHO/FAO expert consultation recommended that for the prevention of NCDs, SFA consumption should be less than 10 per cent of a person’s total emergency consumption. More recently, WHO recommended that SFA consumption should be less than 10 percent of a person’s total energy consumption for the reduction of cardiovascular disease (4).
<b>Definition</b>	Mean proportion of total energy intake from saturated fatty acids in persons aged 18+ years
<b>Unit of measure</b>	Total energy intake from saturated fatty acids (SFA)
<b>Method of measurement</b>	Self-report
<b>Method of estimation/ calculation</b>	<p>Numerator/denominator*100</p> <ul style="list-style-type: none"> <li>• Numerator: Daily energy intake from saturated fat among respondents aged 18+</li> <li>• Denominator: Total daily energy intake among respondents 18+</li> </ul> <p>To calculate the age-standardized mean proportion of total energy intake from saturated fatty acids in persons aged 18+ years requires application of age- specific mean proportion of total energy intake from saturated fatty acids to the WHO World Standard Population summed over all ages. The process of age-standardization is explained in Appendix 1</p>

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<b>Preferred data sources</b>	Population-based (preferably nationally representative) risk factor, health or nutrition surveys, which include method that provide direct or primary data on food consumption (e.g., 24-hour food intake recall).
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<b>Other possible data sources</b>	Household income and expenditure (budget) surveys FAO National Food Balance Sheets
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<b>NCD framework</b>	Risk factor exposure. WHO core indicator # 15 under Global Monitoring Framework.
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<b>Disaggregation</b>	Age, sex, residence, education level and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.
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<b>Expected frequency of data collection</b>	Every 5 years
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<b>Limitations</b>	Potential limitations include: <ul style="list-style-type: none"><li>• bias through self-report and recall bias, including over or underreporting of consumption</li><li>• misunderstanding/-interpretation of questions</li><li>• limited validity of survey instruments</li><li>• requires considerable analysis to categorize foods and extensive follow-up questions to ensure complete recalls</li><li>• expensive</li></ul>
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<b>Data type</b>	Mean (including 95% confidence interval)
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<b>References</b>	<ol style="list-style-type: none"><li>1. Alwan A et al. Monitoring and surveillance of chronic noncommunicable diseases: progress and capacity in high-burden countries. <i>The Lancet</i>, 2010, 376:1861-1868.</li><li>2. <i>Fats and fatty acids in human nutrition</i>. Report of an expert consultation (FAO Food and Nutrition Paper 91). Rome, Food and Agricultural Organization, 2011.</li></ol>
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3. *Diet, nutrition and the prevention of chronic diseases: report of a Joint WHO/FAO Expert Consultation*. Geneva, World Health Organization, 2003.
  4. *Prevention of cardiovascular disease: pocket guidelines for assessment and management of cardiovascular risk*. Geneva, World Health Organization, 2007.
- 

**Related links**



## Low Fruit and Vegetable Consumption

<b>Name abbreviated</b>	
<b>Indicator name</b>	Age-standardized prevalence of persons (aged >18 years) consuming less than five total servings (400 grams) of fruit and vegetables per day
<b>Rationale</b>	Approximately 16 million (1.0%) DALYs and 1.7 million (2.8%) of deaths worldwide are attributable to low fruit and vegetable consumption (1, 2). Adequate consumption of fruit and vegetables reduces the risk for cardiovascular diseases, stomach cancer and colorectal cancer (3, 4).
<b>Definition</b>	Percentage of population who eat less than five servings of fruit and/or vegetables on average per day.
<b>Unit of measure</b>	A serving of fruit and vegetables is equivalent to 80 grams.
<b>Method of measurement</b>	<p>Self-report</p> <p>The next questions ask about the fruits and vegetables that respondent usually eat. Interviewer has a nutrition card that shows some examples of local fruits and vegetables. Each picture represents the size of a serving.</p> <ul style="list-style-type: none"> <li>• <i>In a typical week, on how many days do you <b>eat fruit</b>?</i></li> <li>• <i>How many <b>servings</b> of fruit do you eat on <b>one</b> of those days?</i></li> <li>• <i>In a typical week, on how many days do you <b>eat vegetables</b>?</i></li> <li>• <i>How many <b>servings</b> of vegetables do you eat on one of those days?</i></li> </ul>
<b>Method of estimation/calculation</b>	<p>Numerator/denominator*100</p> <ul style="list-style-type: none"> <li>• Numerator: Number of respondents for whom the sum is less than 5' (Sum of total number of vegetable servings per day X days per</li> </ul>

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<p>week/7) + (sum of total number of fruit servings per day X days per week/7).</p> <ul style="list-style-type: none"> <li>• Denominator: Total of respondents 18+ years old for whom sum of above calculation is less than 5/total number of respondents</li> </ul> <p>To calculate the age-standardized prevalence of persons aged 18+ years consuming less than five total servings (400 grams) of fruit and vegetables per day requires application of age-specific consuming less than five total servings (400 grams) of fruit and vegetables per day prevalence rates to the WHO World Standard Population summed over all ages. The process of age-standardization is explained in Appendix 1</p>
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<b>Preferred data sources</b>	Population-based (preferably nationally representative) survey with the vegetable and fruit intake interview component
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<b>Other possible data sources</b>	The WHO STEPwise approach to Surveillance (STEPS) Pan American STEPS
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<b>NCD framework</b>	Risk factor exposure. Core WHO indicator # 16 under the WHO Global Monitoring Framework.
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<b>Disaggregation</b>	Age, sex, other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.
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<b>Expected frequency of data collection</b>	Every 5 years
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<b>Limitations</b>	<p>Potential limitations include:</p> <ul style="list-style-type: none"> <li>• recall bias and bias through self-report</li> <li>• misunderstanding/-interpretation of questions and/or size of a standard drink</li> <li>• limited validity of survey instruments</li> </ul>
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**Data type**

Prevalence (expressed as percentage including 95% confidence interval)

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**References**

1. *Diet, nutrition and the prevention of chronic diseases: report of a Joint WHO/FAO Expert Consultation*. Geneva, World Health Organization, 2003.
  2. *Global health risks: mortality and burden of disease attributable to selected major risks*. Geneva, World Health Organization, 2009.
  3. Bazzano LA, Serdula MK, Liu S. Dietary intake of fruits and vegetables and risk of cardiovascular disease. *Current Atherosclerosis Report*, 2003;5(6):492-499.
  4. Riboli E, Norat T. Epidemiologic evidence of the protective effect of fruit and vegetables on cancer risk. *American Journal Clinical Nutrition*, 2003;78(Suppl):559S-569
- 

**Related links**

- STEPwise approach to surveillance (STEPS)  
<http://www.who.int/chp/steps/en/index.htm>
- Antonio Agudo: Measuring intake of fruit and vegetables. WHO, 2004.  
[http://www.who.int/dietphysicalactivity/publications/f&v\\_intake\\_measurement.pdf](http://www.who.int/dietphysicalactivity/publications/f&v_intake_measurement.pdf)



**Name abbreviated**

**Tobacco Use in Adolescents**

**Indicator name**

Prevalence of current tobacco use among adolescents 13 to 15 years of age

### Rationale

This indicator allows monitoring the tobacco consumption in adolescents aged 13 to 15 years old in the Americas. The 13-15-year-old age group has been selected based on the need to understand the initiation of tobacco use and patterns of consumption in this young population<sup>19</sup>.

Risks to health from tobacco use result from direct consumption of both smokeless and smoking tobacco, and from exposure to secondhand smoke (1). There is no proven safe level of tobacco use. All current (daily and occasional) users of tobacco are at risk of a variety of diseases and deaths outcomes across the life-course and for NCDs. Almost six million people die from tobacco use each year, accounting for 6 per cent of all female and 12 per cent of all male deaths in the world (2). Of these deaths, 600,000 are attributable to secondhand smoke exposure (2) and more than five million to direct tobacco use (2, 3). Tobacco smoking is estimated to cause about 71 per

<sup>19</sup> Age range definition 13-15 years old:

*In the Region of the Americas, 32 of the 35 PAHO Member States have produced information through the Global Youth Tobacco Survey (GYTS). This survey is applied to the population aged 13-15 years old, and the methodology and questionnaire have been validated and applied by 180 countries worldwide. The age group of 13-15 years was selected based on the need to understand the initiation and pattern of consumption in this young population.*

*Extending the age range to 13-17 years, as presented in the May 2014 version of the Global Monitoring Framework (GMF), poses a challenge for countries reporting tobacco use for the following reasons:*

- 1. Few countries have produced current information for tobacco use for the population 13-17 years old. Given that only a few countries are able to report on this age range, it is, therefore, preferable to continue to report on the 13-15-year-old age group, so more countries can participate.*
- 2. The information in this age range [can be best captured through household surveys. In addition, collecting data through school-based surveys can be challenging, especially because in many countries of the Americas students tend to drop out of school at age 16 or 17.*
- 3. If most of the countries have gathered data for the 13-15-year-old group and the age range for reporting is widened to the 13-17-year-old group, it will be impossible to build the indicator.*

*For these reasons, PAHO and WHO's Technical Tobacco Control Area recommend that the tobacco use indicator for youth should report on the population aged 13 to 15 years old. PAHO Member States have requested that PAHO and WHO develop a methodology to collect data on the 16 and 17 age range in the future.*

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cent of lung cancer deaths, 42 per cent of chronic respiratory disease and nearly 10 per cent of ischemic heart disease deaths (2).

The risk for NCDs starts early in childhood and such behavior continues into adulthood. Tobacco is an addictive substance and smoking often starts in adolescence, before the development of risk perception. By the time the risk to health is recognized, addicted individuals find it difficult to stop tobacco use. Prevalence rates from youth surveys can be used assess initiation of tobacco use among the youth in a country and to accurately monitor and evaluate the impact of the implementation of the tobacco control measures over time.

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<b>Definition</b>	Estimate for prevalence of current tobacco use for the Region of the Americas. Population of 13 to 15 years olds reporting the use of any tobacco product (smoked and smokeless) during the 30 days prior to the survey. .
<b>Unit of measure</b>	Respondents who report they currently use any tobacco product (smoked or smokeless tobacco products)
<b>Method of measurement</b>	Self-report  <i>During the past 30 days, on how many days did you smoke cigarettes?</i> <ul style="list-style-type: none"><li>• 0 days</li><li>• 1 or 2 days</li><li>• 3 to 5 days</li><li>• 6 to 9 days</li><li>• 10 to 19 days</li><li>• 20 to 29 days</li><li>• All 30 days</li></ul> <i>During the past 30 days, did you use any form of smokeless tobacco products (such as FILL APPROPRIATE COUNTRY EXAMPLES)?</i> <ul style="list-style-type: none"><li>• Yes</li><li>• No</li></ul>
<b>Method of estimation/ calculation</b>	Percentage of the population of 13 to 15 years old reporting to use any tobacco product (smoking <sup>20</sup> and smokeless <sup>21</sup> ) during the 30 days prior to the survey, including daily and non-daily use.

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<sup>20</sup> Smoked tobacco products include manufactured cigarettes, bidis, cigars, pipes, waterpipes (narghile, hookah, shisha), hand rolled tobacco, kreteks, and any other form of smoked tobacco.

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Country calculation:

$$\begin{array}{l} \text{Calculation of the} \\ \text{prevalence rate for} \\ \text{13-15-year-olds for} \\ \text{country X} \end{array} = \frac{\begin{array}{l} \text{Total number of current tobacco users 13-15} \\ \text{years old in country X} \\ \text{-----} \\ \text{Total size of the surveyed population for} \\ \text{country X (tobacco users and non-users)} \end{array}}$$

Regional calculation:

$$\begin{array}{l} \text{Calculation of the} \\ \text{prevalence rate for} \\ \text{13-15-year-olds for} \\ \text{the Region} \end{array} = \frac{\begin{array}{l} \text{Total number of current tobacco users 13-15} \\ \text{years old for the Region} \\ \text{-----} \\ \text{Total number of 13-15-year-olds of the} \\ \text{surveyed population (tobacco users and} \\ \text{non-users) for the Region} \end{array}}$$

*This information comes from a survey that collects data through a sample that is weighted to represent the country's entire population.*

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**Preferred data sources**

Population-based (preferably nationally representative) survey or:

- Global Youth Tobacco Survey (GYTS)
- Global School Health Survey Global School-based Student Health Survey (GSHS)
- school-based drug abuse surveys

There is no hierarchy among the surveys. The criterion to use any of these is the last national data available. Eventually, Population-based surveys and National Household Surveys such as: National Health Surveys and National Drug Abuse Surveys will be used as a data source for this indicator.

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**Other possible data sources**

- WHO Global Report on the Tobacco Epidemic
- Statistical models producing estimates based on all available data related to tobacco use.

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**NCD framework** Risk factor exposure.

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<sup>21</sup> Smokeless tobacco is tobacco that is not burned and can be chewed, applied, or snuffed. Smokeless tobacco products include chewed or oral tobacco, spit or spitting tobacco, snuff, snus, chimó, and dip.

- Goal Specific Indicator for Voluntary Target # 5: 30% reduction in prevalence of current tobacco use
- Outcome indicator for:
  - WHO’s global monitoring framework # 9
  - Regional NCD Action Plan 2013 – 2019 # 2.1.1
  - SP # 2.1.1

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**Disaggregation** Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available.

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**Expected frequency of data collection** Every 5 years

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**Limitations** Potential limitations include:

- Different age ranges among different surveys;
- Representativeness of the sample (national, subnational)
- Different survey methodologies (household surveys, telephone surveys)
- Different survey questions
- Information for smokeless tobacco use is not always collected.
- Limited access to disaggregated data to produce the standardized estimates, as with all self-reported surveys, data is subject to limitations as respondents may under or over report their tobacco use. bias through self-report, including underreporting of consumption

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**Data type** Prevalence (expressed as percentage with 95% confidence interval)

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**References**

- 1) *Global estimate of the burden of disease from second-hand smoke*. Geneva, World Health Organization, 2010.
- (2) WHO Global Report on the Mortality Attributable to Tobacco, Geneva, World Health Organization, 2012
- (3) Oberg M et al. Worldwide burden of disease from exposure to second-hand smoke: a retrospective analysis of data from 192 countries. *The Lancet*, 2011, 377:139-146

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**Related links**

- Centers for Disease Control and Prevention. Global Tobacco Surveillance System. GTSS Data. Global Youth Tobacco Survey (GYTS). Atlanta, GA: CDC Available from: <http://nccd.cdc.gov/gtssdata/Ancillary/Documentation.aspx?SUID=1&DOCT=1>
- Centers for Disease Control and Prevention. Global Youth Tobacco Survey Collaborative Group. Global Youth Tobacco Survey (GYTS): Sample Design and Weights, Version 1.0. Atlanta, GA: CDC; 2013.
- Centers for Disease Control and Prevention. Global Youth Tobacco Survey Collaborative Group. Global Youth Tobacco Survey (GYTS): Implementation Instructions, Version 1.1. Atlanta, GA: CDC; 2012.
- Centers for Disease Control and Prevention. Global Youth Tobacco Survey Collaborative Group. Global Youth Tobacco Survey (GYTS): Indicator Definitions, Version 1.0. Atlanta, GA: CDC; 2013



**Name abbreviated**

**Tobacco Use in Adults**



**Indicator name**

Age-standardized prevalence of current tobacco use (18+ years of age)

**Rationale**

This indicator allows monitoring the tobacco consumption in the population aged 18 years and older in the Americas

to health from tobacco use result from direct consumption of both smokeless and smoking tobacco, and from exposure to secondhand smoke (1). There is no proven safe level of tobacco use. All current (daily and occasional) users of tobacco are at risk of a variety of outcomes across the life-course and for NCDs. Almost six million people die from tobacco use each year, accounting for 6 per cent of all female and 12 per cent of all male deaths in the world (2). Of these deaths, 600,000 are attributable to secondhand smoke exposure (3) and more than five million to direct tobacco use (2, 3). Tobacco smoking is estimated to cause about 71 per cent of lung cancer deaths, 42 per cent of chronic respiratory disease and nearly 10 per cent of ischemic heart disease deaths (2).

The Americas has the highest proportion of deaths attributable to tobacco where tobacco has been used for a longer period of time (2). Despite the progress made in several countries in the Region, the smoking epidemic will continue to spread in the Americas unless tobacco control policies were not implemented. The information produced by this indicator will support the evaluation of the impact of the tobacco control policies.

**Definition**

Age-standardized prevalence estimate for current tobacco use for the Region of the Americas. Population 18 years old and older that reports using any tobacco product (smoked and smokeless) during the 30 days prior to the survey, including daily and non-daily use.

**Unit of measure**

Prevalence of Respondents who report they currently use any tobacco product (smoked or smokeless tobacco products) on a daily basis or less than daily

**Method of measurement**

Self-report

*Do you currently smoke tobacco on a daily basis, less than daily, or not at all?*

- *Daily*
- *Less than daily*
- *Not at all*
- *Don't know*

*Do you currently use smokeless tobacco on a daily basis, less than daily, or not at all?*

- *Daily*
- *Less than daily*
- *Not at all*
- *Don't know*

**Method of estimation/calculation**

Percentage of the population 18 years old and older that reports using any tobacco product (smoked<sup>22</sup> and smokeless<sup>23</sup>) during the 30 days prior to the survey, including daily and non-daily use.

Country calculation:

Calculation of age-standardized

$$\text{prevalence rate for the population 18 years and older for country X} = \frac{\text{Total number of current tobacco users 18 years old and older for country X}}{\text{Total population for country X}}$$

Regional calculation:

Calculation of age-standardized

$$\text{prevalence rate for the population 18 years old and older+ for the Region} = \frac{\text{Total number of current tobacco users 18 years old and older}}{\text{World standard population aged 18 years and older}}$$

<sup>22</sup> Smoked tobacco products include manufactured cigarettes, bidis, cigars, pipes, waterpipes (narghile, hookah, shisha), hand rolled tobacco, kreteks, and any other form of smoked tobacco.

<sup>23</sup> Smokeless tobacco is tobacco that is not burned and can be chewed, applied or snuffed. Smokeless tobacco products include chewed or oral tobacco, spit or spitting tobacco, snuff, snus, chimó, and dip.

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To calculate the age-standardized prevalence of current tobacco use among persons aged 18+ years requires application of age-specific tobacco use prevalence rates to the WHO World Standard Population summed over all ages. The process of age-standardization is explained in Appendix 1.

To assist countries in their effort to monitor and report on their tobacco-related Global Monitoring Framework indicators and targets, WHO is currently developing a methodology to fit country collected data to a Bayesian hierarchical negative binomial model. The model is currently being tested and refined. A paper describing the methods will be submitted to a peer reviewed journal. The results will be shared with countries before publication. One of the outputs of this exercise will be age-specific rates for tobacco use. These rates will be needed to generate age-standardized prevalence summary estimates.

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**Preferred data sources**

Population-based (preferably nationally representative) survey

- National Risk Factors Surveys (STEPS or similar including TIQS)
- National Household Surveys such as: National Health Surveys, National Drug Abuse Surveys, Global Adult Tobacco Survey, etc.)
- Tobacco Questions for Surveys (TQS)

There is no hierarchy among the surveys. The criterion to use any of these is the last national data available

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**Other possible data sources**

WHO Global Report on the Tobacco Epidemic

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**NCD framework**

Risk factor exposure.

- Goal Specific Indicator for Voluntary Target # 5: 30% reduction in prevalence of current tobacco smoking
- Outcome indicator for:
  - WHO's global monitoring framework # 10
  - Regional NCD Action Plan 2013 – 2019 # 2.1.1
  - SP # 2.1.1

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**Disaggregation** Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.

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**Expected frequency of data collection** Every 5 years

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**Limitations**

- Lack of a surveillance system in place to monitor, systematically and periodically, the tobacco epidemic among the adult population in most of the Region’s countries.
- Different age ranges used in different surveys.
- Limited representativeness of the sample (national, subnational).
- Different survey methodologies (household surveys, telephone surveys).
- Different survey questions; not all surveys include all tobacco products, nor do all report daily and non-daily consumption.
- Limited access to disaggregated data for producing standardized estimates.
- As with all self-reported surveys, data is subject to limitations, as respondents may under- or over-report their tobacco use.

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**Data type** Prevalence (expressed as percentage with 95% confidence interval)

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**References**

- 1) *Global estimate of the burden of disease from second-hand smoke*. Geneva, World Health Organization, 2010.
- (2) WHO Global Report on the Mortality Attributable to Tobacco, Geneva, World Health Organization, 2012.
- (3) Oberg M et al. Worldwide burden of disease from exposure to second-hand smoke: a retrospective analysis of data from 192 countries. *The Lancet*, 2011, 377:139-146.

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**Related links**

1. Centers for Disease Control and Prevention. Global Tobacco Surveillance System. GTSS Data. Global Adult Tobacco Survey (GATS). Atlanta, GA: CDC. Available from: <http://nccd.cdc.gov/gtssdata/Ancillary/Documentation.aspx?SUID=4&DOCT=1>
2. Centers for Disease Control and Prevention. Global Adult Tobacco Survey Collaborative

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- Group. Tobacco Questions for Survey: A Subset of Key Questions from the Global Adult Tobacco Survey (GATS), 2nd edition. Atlanta, GA: CDC; 2011. Available from: <http://www.who.int/tobacco/publications/surveillance/tqs/en/>
3. Centers for Disease Control and Prevention. Global Adult Tobacco Survey Collaborative Group. Global Adult Tobacco Survey (GATS): Sample Design Manual, Version 2.0. Atlanta, GA: CDC; 2010.  
[http://www.who.int/tobacco/surveillance/en\\_tfi\\_gats\\_sampledesignmanual\\_v2\\_final\\_03nov2010.pdf](http://www.who.int/tobacco/surveillance/en_tfi_gats_sampledesignmanual_v2_final_03nov2010.pdf)
  4. Centers for Disease Control and Prevention. Global Adult Tobacco Survey Collaborative Group. Global Adult Tobacco Survey (GATS): Core Questionnaire with Optional Questions, Version 2.1. Atlanta, GA: CDC; 2014  
[http://www.who.int/tobacco/surveillance/en\\_tfi\\_gats\\_questionbyquestionspecifications\\_v2\\_final\\_24nov2010.pdf](http://www.who.int/tobacco/surveillance/en_tfi_gats_questionbyquestionspecifications_v2_final_24nov2010.pdf)
  5. Centers for Disease Control and Prevention. Global Adult Tobacco Survey Collaborative Group. Global Adult Tobacco Survey (GATS): Indicator definitions. Atlanta, GA: CDC; 2012.  
[http://www.who.int/tobacco/surveillance/en\\_tfi\\_gats\\_indicator\\_guidelines.pdf](http://www.who.int/tobacco/surveillance/en_tfi_gats_indicator_guidelines.pdf)



<b>Name abbreviated</b>	<b>Tobacco Smoking</b>
<b>Indicator name</b>	Current and past tobacco smoking status among persons aged 15+ years
<b>Rationale</b>	<p>Determines the current and past tobacco smoking status of the respondents.</p> <p>The indicator is constructed from the three questions, which assess tobacco smoking prevalence. The first question (Q1) measures current use, the second question (Q2a) measures past daily use for current less than daily smokers, and the third question (Q2b) measures past use for current non-smokers. It is imperative that these questions be included in any survey that wants to examine basic tobacco smoking prevalence rates. The question is one of the key questions from the Global Adult Tobacco Survey (GATS).</p>
<b>Definition</b>	<p>Daily means smoking at least one tobacco product every day or nearly every day over a period of a month or more.</p> <p>Rare instances of smoking or experimental smoking (tried once or twice in lifetime) should be counted in the NOT AT ALL category.</p>
<b>Unit of measure</b>	Current and past tobacco smoking on a daily basis, less than daily, or not at all
<b>Method of measurement</b>	<p>Self-report</p> <p>Q1. Current Tobacco Smoking Status <i>Do you <u>currently</u> smoke tobacco on a daily basis, less than daily, or not at all?</i></p> <ul style="list-style-type: none"><li>• <i>Daily</i></li><li>• <i>Less than daily</i></li><li>• <i>Not at all</i></li></ul>

- *Don't know*

Q2a. Past Daily Smoking Status

*Have you smoked tobacco daily in the past?*

*Yes*

*No*

*Don't know*

Q2b. Past Smoking Status

*In the past, have you smoked tobacco on a daily basis, less than daily, or not at all?*

- *Daily*
- *Less than daily*
- *Not at all*
- *Don't know*

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**Method of estimation/  
calculation**

Numerator/denominator\*100

Indicator 1

Current Tobacco Smokers: Percentage of respondents who currently smoke tobacco.

- Numerator: Number of current daily and less than daily tobacco smokers.
- Denominator: Total number of respondents surveyed. (“Don’t know” responses are excluded.)

Indicator 2

Current Daily Tobacco Smokers: Percentage of respondents who currently smoke tobacco daily.

- Numerator: Number of current daily tobacco smokers.
- Denominator: Total number of respondents surveyed. (“Don’t know” responses are excluded.)

Indicator 3

Former Daily Tobacco Smokers (Among All Adults): Percentage of respondents who are ever daily tobacco smokers and currently do not smoke tobacco.

- Numerator: Number of ever daily tobacco smokers who currently do not smoke tobacco.
- Denominator: Total number of respondents surveyed. (“Don’t know” responses are excluded.)

Indicator 4

Former Daily Tobacco Smokers (Among Ever Daily Smokers): Percentage of ever daily tobacco smokers who currently do not smoke tobacco.

- Numerator: Number of ever daily tobacco smokers who currently do not smoke tobacco.
- Denominator: Number of ever daily tobacco smokers. (“Don’t know” responses are excluded.)

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**Preferred data sources**

Global Adult Tobacco Survey (GATS)  
National Risk Factors Surveys (STEPS or similar that includes TIQS)

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**Other possible data sources**

WHO Global Report on the Tobacco Epidemic

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**NCD framework**

Risk factor exposure. Extended indicator.

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**Disaggregation**

Age, sex, residence, education level, and other relevant sociodemographic stratifiers where available

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**Expected frequency of data collection**

Every 5 years

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- Limitations**
- Lack of a national surveillance system in place to monitor in a systematic and periodically way the tobacco epidemic for adult population in most of the countries in the region
  - Different age ranges among different surveys. The age range of the surveys conducted in the region varies widely ( 12-65 years old, 15 years old and >18 years and >24 years old);
  - Representativeness of the sample (national, subnational)
  - Different survey methodologies (household surveys, telephone surveys)
  - Different survey questions
  - Limited access to disaggregated data to produce the standardized estimates, as with all self-reported surveys, data is subject to limitations as respondents may under or over report their tobacco use.
- 

**Data type** Prevalence (expressed as percentage with 95% confidence interval)

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- References**
- (1) World Health Organization 2010. Fourth Conference of the Parties to the WHO Framework Convention on Tobacco Control. FCTC/COP/4/12 Control and prevention of smokeless tobacco products and electronic cigarettes. Report by the Convention Secretariat, Punta del Este, Uruguay, September 15, 2010
  - (2) Tobacco Control Report for the Region of the Americas, 2013
- 

- Related links**
- Tobacco Questions for Survey (TQS)  
<http://www.who.int/tobacco/publications/surveillance/tqs/en/>
-

<b>Name abbreviated</b>	<b>Smokeless Tobacco Use</b>
<b>Indicator name</b>	Current smokeless tobacco use among persons aged +18± years
<b>Rationale</b>	Smokeless tobacco is consumed without burning, either through the nose (e.g., snuff) or mouth: chewed, sucked, or placed on the gums (e.g., chewing tobacco, chimo paste, snus, etc.). It is erroneously believed that smokeless tobacco is less harmful alternative to smoking, It is also less expensive and it is seen as an option where smoking is banned, For this reason it is important to monitor its use (1, 2) Questions 4, 5a, and 5b measure the prevalence of smokeless tobacco use. These questions mirror the smoking tobacco prevalence questions (Q1, Q2a, and Q2b). The question is one of the key questions from the Global Adult Tobacco Survey (GATS).
<b>Definition</b>	<p>The indicator measures the prevalence of smokeless tobacco use.</p> <p>Daily means using smokeless tobacco at least one time every day or nearly every day over a period of a month or more.</p> <p>Rare instances of using smokeless tobacco or experimental use (tried once or twice in lifetime) should be counted in the NOT AT ALL category.</p>
<b>Unit of measure</b>	Users of smokeless tobacco on a daily basis, less than daily, or not at all
<b>Method of measurement</b>	<p>Self-report</p> <p><i>Q4. Current Smokeless Tobacco Use</i> <i>Do you <u>currently</u> use smokeless tobacco on a daily basis, less than daily, or not at all?</i></p> <ul style="list-style-type: none"><li>• <i>Daily</i></li><li>• <i>Less than daily</i></li><li>• <i>Not at all</i></li><li>• <i>Don't know</i></li></ul> <p><i>Q5a. Past Daily Smokeless Tobacco Use</i> <i>Have you used smokeless tobacco daily in the past?</i></p>

- *Yes*
- *No*
- *Don't know*

*Q5b. Past Smokeless Tobacco Use*

*In the past, have you used smokeless tobacco on a daily basis, less than daily, or not at all?<sup>24</sup>*

- *Daily*
  - *Less than daily*
  - *Not at all*
  - *Don't know*
- 

**Method of estimation/calculation**

Numerator/denominator\*100

Indicator 1

Current Smokeless Tobacco Users: Percentage of respondents who currently use smokeless tobacco.

- Numerator: Number of current daily and less than daily smokeless tobacco users.
- Denominator: Total number of respondents surveyed. (“Don’t know” responses are excluded.)

Indicator 2

Current Daily Smokeless Tobacco Users: Percentage of respondents who currently use smokeless tobacco daily.

- Numerator: Number of current daily smokeless tobacco users.
- Denominator: Total number of respondents surveyed. (“Don’t know” responses are excluded.)

Indicator 3

Former Daily Smokeless Tobacco Users (Among All Adults): Percentage of respondents who are ever daily smokeless tobacco users and currently do not use smokeless tobacco.

- Numerator: Number of ever daily smokeless tobacco users who

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<sup>24</sup> *Interviewer: if respondent has done both “daily” and “less than daily” in the past, check “daily”*

- 
- currently do not use smokeless tobacco.
  - Denominator: Total number of respondents surveyed. (“Don’t know” responses are excluded.)

Indicator 4

Former Daily Smokeless Tobacco Users (Among Ever Daily Users):  
Percentage of ever daily smokeless tobacco users who currently do not use smokeless tobacco.

- Numerator: Number of ever daily smokeless tobacco users who currently do not use smokeless tobacco.
- Denominator: Number of ever daily smokeless tobacco users. (“Don’t know” responses are excluded.)

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**Preferred data sources**

Global Adult Tobacco Survey (GATS)  
National Risk Factors Surveys (STEPS or similar that includes TIQS)

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**Other possible data sources**

WHO Global Report on the Tobacco Epidemic

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**NCD framework**

Risk factor exposure. Extended indicator.

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**Disaggregation**

Age, sex, residence, education level, and other relevant sociodemographic stratifiers where available

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**Expected frequency of data collection**

Every 5 years

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**Limitations**

- Lack of a national surveillance system in place to monitor in a systematic and periodically way the tobacco epidemic for adult population in most of the countries in the region
- Different age ranges among different surveys. The age range of the surveys conducted in the region varies widely ( 12-65 years old, 15 years old and >18 years and >24 years old);

- Representativeness of the sample (national, subnational)
- Different survey methodologies (household surveys, telephone surveys)
- Different survey questions
- Limited access to disaggregated data to produce the standardized estimates, as with all self-reported surveys, data is subject to limitations as respondents may under or over report their tobacco use.

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**Data type**

Prevalence (expressed as percentage with 95% confidence interval)

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**References**

- (3) World Health Organization 2010. Fourth Conference of the Parties to the WHO Framework Convention on Tobacco Control. FCTC/COP/4/12 Control and prevention of smokeless tobacco products and electronic cigarettes. Report by the Convention Secretariat, Punta del Este, Uruguay, September 15, 2010
- (4) Tobacco Control Report for the Region of the Americas, 2013
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**Related links**

- Tobacco Questions for Survey (TQS)  
<http://www.who.int/tobacco/publications/surveillance/tqs/en/>
-

<b>Name abbreviated</b>	<b>Tobacco Smoking Consumption</b>
<b>Indicator name</b>	Number of tobacco products smoked per day
<b>Rationale</b>	Question 3 from GATS asks about the amount of tobacco being smoked by current smokers. This question (with item parts) measures usage of cigarettes and other specific tobacco products. The question is one of the key questions from the Global Adult Tobacco Survey (GATS).
<b>Definition</b>	Determines the number of tobacco products that the respondent smokes each day or week. (Note that the tobacco products should be adjusted for the specific survey/country.)
<b>Unit of measure</b>	
<b>Method of measurement</b>	Self-reported <i>Q3. Number of Tobacco Products Smoked Per Day\</i> <i>On average, how many of the following products do you currently smoke each (day/week)? Also, let me know if you smoke the product, but not every (day/week)<sup>25</sup>.</i>  <i>a. Manufactured cigarettes? .....</i> <input type="text"/> <input type="text"/> <input type="text"/> <i>PER DAY/WEEK*</i>  <i>b. Hand-rolled cigarettes? .....</i> <input type="text"/> <input type="text"/> <input type="text"/> <i>PER DAY/WEEK</i>  <i>c. Kreteks?.....</i> <input type="text"/> <input type="text"/> <input type="text"/> <i>PER DAY/WEEK</i>

<sup>25</sup> Interviewer: if respondent reports smoking the product but not every (day/week), enter 888

Core National Indicators – Behavioral Risk Factors

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d. Pipes full of tobacco?.....	<table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 33%;"></td> <td style="width: 33%;"></td> <td style="width: 33%;"></td> </tr> </table>				<i>PER</i> <i>DAY/WEEK</i>
e. Cigars, cheroots, or cigarillos? .....	<table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 33%;"></td> <td style="width: 33%;"></td> <td style="width: 33%;"></td> </tr> </table>				<i>PER</i> <i>DAY/WEEK</i>
f. Number of water pipe sessions? .....	<table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 33%;"></td> <td style="width: 33%;"></td> <td style="width: 33%;"></td> </tr> </table>				<i>PER</i> <i>DAY/WEEK</i>
g. Any others? (specify).....	<table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 33%;"></td> <td style="width: 33%;"></td> <td style="width: 33%;"></td> </tr> </table>				<i>PER</i> <i>DAY/WEEK</i>

*\*Int: verify this is  
# of cigarettes,  
not packs*

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**Method of estimation/ calculation**

**Indicator 1:** Current [*Product*] Smokers: Percentage of respondents who currently smoke [*product*].

- Numerator: Number of current daily and less than daily [*product*] smokers.
- Denominator: Total number of respondents surveyed.

**Indicator 2:** Number of Cigarettes Smoked Per Day (of daily cigarette smokers).

- Numerator: Daily cigarette smokers reporting an average of [less than 5, 5-9, 10-14, 15-24, 25+] cigarettes per day.
  - Denominator: Daily cigarette smokers.
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**Preferred data sources**

Global Adult Tobacco Survey (GATS)  
National Risk Factors Surveys (STEPS or similar that includes TIQS)

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**Other possible data sources**

WHO Global Report on the Tobacco Epidemic

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**NCD framework**

Risk factor exposure. Extended indicator.

**Disaggregation** Age, sex, residence, education level, and other relevant sociodemographic stratifiers where available

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**Expected frequency of data collection** Every 5 years

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**Limitations**

- Lack of a national surveillance system in place to monitor in a systematic and periodically way the tobacco epidemic for adult population in most of the countries in the region
- Different age ranges among different surveys. The age range of the surveys conducted in the region varies widely ( 12-65 years old, 15 years old and >18 years and >24 years old);
- Representativeness of the sample (national, subnational)
- Different survey methodologies (household surveys, telephone surveys)
- Different survey questions
- Limited access to disaggregated data to produce the standardized estimates, as with all self-reported surveys, data is subject to limitations as respondents may under or over report their tobacco use.

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**Data type** Prevalence (expressed as percentage with 95% confidence interval)

---

**References**

1. World Health Organization 2010. Fourth Conference of the Parties to the WHO Framework Convention on Tobacco Control. FCTC/COP/4/12 Control and prevention of smokeless tobacco products and electronic cigarettes. Report by the Convention Secretariat, Punta del Este, Uruguay, September 15, 2010
2. Tobacco Control Report for the Region of the Americas, 2013

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**Related links**

- Tobacco Questions for Survey (TQS)  
<http://www.who.int/tobacco/publications/surveillance/tqs/en/>

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<b>Name abbreviated</b>	<b>Smoking Cessation</b>
<b>Indicator name</b>	Attempting to quit smoking among persons aged 15+ years
<b>Rationale</b>	Determines if current smoker has tried to quit in the last 12 months. Tobacco users are victims of nicotine addiction. Three out of four smokers say they want to quit. For some tobacco users it is difficult to quit on their own, so access to counseling and cessation services are an important part of comprehensive tobacco control. It is important to measure the amount of smokers that are looking for support to quit tobacco to provide cessation service to them (1 2). The question is one of the key questions from the Global Adult Tobacco Survey (GATS).
<b>Definition</b>	<ul style="list-style-type: none"><li>• Percentage of current tobacco smokers who have tried to quit during the past 12 months.</li><li>• Percentage of current tobacco smokers who visited a doctor or health care provider during the past 12 months and were advised to quit smoking tobacco.</li></ul>
<b>Unit of measure</b>	Current tobacco smokers who have tried to quit during the past 12 months.
<b>Method of measurement</b>	Self-reported: Two concepts are measured with these questions: 1) Attempt of current smokers to quit (Q10), and 2) Receiving advice from healthcare providers to quit (Q11, Q12) <sup>26</sup> .  <i>Q10. Attempting to Quit Smoking</i>

<sup>26</sup> Q11 determines if the respondent went to a doctor or health care provider in the past 12 months for his/her health and if yes, Q12 determines whether the respondent was advised by a doctor or health care provider to quit smoking tobacco.

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*During the past 12 months, have you tried to stop smoking?*

- *Yes*
- *No*

*Q11. Visiting a Doctor*

*Have you visited a doctor or other health care provider in the past 12 months?*

- *Yes*
- *No*

*Q12. Receiving Cessation Advice from Doctor*

*During any visit to a doctor or health care provider in the past 12 months, were you advised to quit smoking tobacco?*

- *Yes*
- *No*

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**Method of estimation/  
calculation**

Administered to current smokers (Q1=1 or 2). Ask question and select only one answer.

Numerator/denominator\*100

Indicator: Smoking Quit Attempt in the Past 12 Months

- Numerator: Current tobacco smokers who tried to quit during the past 12 months.
- Denominator: Current tobacco smokers.

Indicator: Health Care Provider's Advice to Quit Smoking Tobacco:

- Numerator: Number of current tobacco smokers who were advised to quit smoking during a visit to a healthcare provider within the past 12 months.
- Denominator: Number of current tobacco smokers who visited a healthcare provider in the past 12 months.

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**Preferred data**

Global Adult Tobacco Survey (GATS)

*Core National Indicators – Behavioral Risk Factors*

<b>sources</b>	National Risk Factors Surveys (STEPS or similar that includes TIQS)
<b>Other possible data sources</b>	WHO Global Report on the Tobacco Epidemic
<b>NCD framework</b>	Risk factor exposure. Expanded indicator.
<b>Disaggregation</b>	Age, sex, residence, education level, and other relevant sociodemographic stratifiers where available.
<b>Expected frequency of data collection</b>	Every 5 years
<b>Limitations</b>	<p>Potential limitations include:</p> <ul style="list-style-type: none"><li>• Lack of a national surveillance system in place to monitor in a systematic and periodically way the tobacco epidemic for adult population in most of the countries in the region</li><li>• Different age ranges among different surveys. The age range of the surveys conducted in the region varies widely (12-65 years old, 15 years old, 18+ years old, and 24+ years old )</li><li>• Representativeness of the sample (national, subnational)</li><li>• Different survey methodologies (household surveys, telephone surveys)</li><li>• Different survey questions</li><li>• Limited access to disaggregated data to produce the standardized estimates, as with all self-reported surveys, data is subject to limitations as respondents may under or over report their tobacco use</li></ul>
<b>Data type</b>	Prevalence (expressed as percentage with 95% confidence interval)
<b>References</b>	<ol style="list-style-type: none"><li>1. Fiore MC, et al 2008. Treating tobacco use and dependence: 2008 update. Clinical practice guideline. Rockville MD, Department of Health and Human Services, 2008.</li><li>2. Tobacco Control Report for the Region of the Americas, 2013</li></ol>

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**Related links**

- The Global Adult Tobacco Survey (GATS)  
<http://www.who.int/tobacco/surveillance/survey/gats/en/>
  - Tobacco Questions for Survey (TQS)  
<http://www.who.int/tobacco/publications/surveillance/tqs/en/>
-

<b>Name abbreviated</b>	<b>Exposure to Secondhand Smoke</b> <a href="#">[</a>
<b>Indicator name</b>	Secondhand smoke exposure among persons aged <b>+18+</b> years: <ol style="list-style-type: none"><li>1. At home</li><li>2. In workplace</li></ol>
<b>Rationale</b>	<p>Risks to health from tobacco use result from direct consumption of both smokeless and smoking tobacco, and from exposure to secondhand smoke (1). There is no safe level of human exposure to tobacco. Research clearly shows that exposure to secondhand smoke cause cancer, as well as many serious respiratory and cardiovascular diseases. While half the people who smoke regularly will eventually be killed by tobacco, it should be emphasized that 600,000 people who do not smoke die each year from diseases caused by exposure to secondhand smoke</p> <p>These questions measure secondhand smoke exposure in the home (Q6) and in the workplace (Q7, Q8, Q9). These questions determine if anyone smoked in indoor areas at the respondent’s workplace. The first question (Q7) determines whether the respondent works outside of the home. The second question (Q8) determines if the respondent usually works inside or outside. The third question (Q9) determines if anyone smoked in indoor areas where the respondent worked in the past 30 days. The question is one of the key questions from the Global Adult Tobacco Survey (GATS).</p>
<b>Definition</b>	<ol style="list-style-type: none"><li>1. Percentage of respondents who report that smoking occurs inside their home.</li><li>2. Percentage of indoor workers who were exposed to tobacco smoke at work in the past 30 days</li></ol>
<b>Unit of measure</b>	Respondents who report that smoking occurs inside their home or/and in their workplace.

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**Method of measurement**

Self-report

*Q6. Frequency of Smoking in the Home<sup>27</sup>*

*How often does anyone smoke inside your home? Would you say daily, weekly, monthly, less than monthly, or never?*

- *Daily*
- *Weekly*
- *Monthly*
- *Less than monthly*
- *Never*
- *Don't know*

*Q7. Current Working Location*

*Do you currently work outside of your home?*

- *Yes*
- *No/don't work*

*Q8. Currently Working Indoors or Outdoors*

*Do you usually work indoors or outdoors?*

- *Indoors*
- *Outdoors*
- *Both*

*Q9. Smoking at the Workplace*

*During the past 30 days, did anyone smoke in indoor areas where you work?*

- *Yes*
- *No*
- *Don't know*

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**Method of estimation/calculation**

Numerator/denominator\*100

Indicator 1: Exposure to Secondhand Smoke at Home

- Numerator: Number of respondents who reported that smoking occurs inside their home on daily, weekly, or monthly basis
- Denominator: Total number of respondents surveyed. (“Don't know” responses are excluded.)

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<sup>27</sup> *This question is asking about inside the respondent's home. This only includes enclosed areas of the home – the respondent should not include areas outside of the home (such as patios, porches, etc.) that are not fully enclosed*

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Indicator 2: Exposure to Secondhand Smoke at Work.

- Numerator: Number of respondents who reported being exposed to smoke in indoor areas at work during the past 30 days.
  - Denominator: Number of respondents who work outside of the home who usually work indoors or both indoors and outdoors. (“Don’t know” responses to Q9 are excluded.)
- 

**Preferred data sources**

Global Adult Tobacco Surveillance System (GATS)  
National Risk Factors Surveys (STEPS or similar that includes TIQS)

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**Other possible data sources**

WHO Global Report on the Tobacco Epidemic.

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**NCD framework**

Risk factor exposure. Expanded indicator.

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**Disaggregation**

Age, gender, residence, and education status and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, by 10-year age groups.

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**Expected frequency of data collection**

Every 5 years

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**Limitations**

- Potential limitations include:
- bias through self-report, including underreporting of consumption
- 

**Data type**

Prevalence (expressed as percentage with 95% confidence interval)

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**References**

1. *Global estimate of the burden of disease from second-hand smoke*. Geneva, World Health Organization, 2010.
2. Oberg M et al. Worldwide burden of disease from exposure to second-hand smoke: a retrospective analysis of data from 192 countries. *The Lancet*, 2011, 377:139-146.

- 
3. U.S. Department of Health and Human Services 2006. The Health Consequences of Involuntary Exposure to Tobacco

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**Related links**

- The Global Adult Tobacco Survey (GATS)  
<http://www.who.int/tobacco/surveillance/survey/gats/en/>
  - Tobacco Questions for Survey (TQS)  
<http://www.who.int/tobacco/publications/surveillance/tqs/en/>
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## Biological Risk Factor Indicators

Target	Indicator	NCD Framework
<b>NCD target # 6:</b> <b>25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure, according to national circumstance</b> 	<b>Raised Blood Pressure:</b> Age-standardized prevalence of raised blood pressure among persons aged 18+ years, defined as systolic blood pressure >140 mmHg and/or diastolic blood pressure >90 mmHg	<b>GMF # 11</b> <b>NCD PoA # 3.3.5</b>
	<b>Mean Blood Pressure:</b> Mean systolic blood pressure among persons aged 18+ years	<b>GMF # 11</b>
	<b>Raised Total Cholesterol:</b> Age-standardized prevalence of raised total cholesterol among persons aged 18+ years, defined as total cholesterol $\geq$ 5.0 mmol/L or 190 mg/dl	<b>GMF # 17a</b>
	<b>Mean Total Cholesterol:</b> Age-standardized mean total cholesterol among persons aged 18+ years, defined as total cholesterol $\geq$ 5.0 mmol/L or 190 mg/dl	<b>GMF # 17b</b>
<b>NCD target # 7:</b> <b>Halt the rise in diabetes and obesity</b> 	<b>Raised Blood Glucose/Diabetes:</b> Age-standardized prevalence of raised blood glucose/diabetes among adults aged 18+ years (defined as fasting plasma glucose value $\geq$ 7.0 mmol/L raised blood glucose (126 mg/dl) or on medication for raised blood glucose	<b>GMF # 12</b> <b>NCD PoA # 3.3.1</b> <b>SP # 2.1.5</b>
	<b>Diabetes Mellitus Incidence (ICD10 E10-E14):</b> Population who report been diagnosed with diabetes during the last year	Expanded indicator # 29
	<b>Diabetes Mellitus Prevalence (ICD10 E10-E14):</b> Prevalence of people who have ever been diagnosed with diabetes	Expanded indicator # 30
	<b>Mean Blood Glucose:</b> Mean of fasting blood	Expanded indicator # 31

Core National Indicators – Biological Risk Factors

glucose in the population	
<p><b>Overweight and Obesity in Adolescents:</b> Prevalence of overweight and obesity in adolescents, defined according to the WHO Growth Reference, overweight- one standard deviation BMI for age and sex and obese-two standard deviations body mass index for age and sex.</p>	<p><b>GMF # 13</b>  <b>NCD PoA # 3.3.3</b>  <b>SP # 2.1.6</b></p>
<p><b>Overweight and Obesity in Adults:</b> Age-standardized prevalence of overweight and obesity in persons aged 18+ years , defined as body mass index greater than 25 kg/m for overweight or 30 kg/m for obesity</p>	<p><b>GMF # 14</b>  <b>NCD PoA # 3.3.2</b>  <b>SP # 2.1.2</b></p>
<p><b>Overweight in Children:</b> Prevalence of children less than five years of age who are overweight</p>	<p><b>SP # 2.1.5</b></p>
<p><b>Median Waist Circumference:</b> Median of waist circumference in adults (18+ years old).</p>	<p>Expanded indicator # 32</p>



**Name  
abbreviated**

**Raised Blood Pressure**

**Indicator name**

Age-standardized prevalence of raised blood pressure among persons aged 18+ years.

**Rationale**

Worldwide, raised blood pressure is estimated to cause 7.5 million deaths, about 12.8 per cent of the total of all deaths (1). This accounts for 57 million disability-adjusted life years (DALYS) or 3.7 per cent of total DALYS. Raised blood pressure is a major risk factor for coronary heart disease and ischemic as well as hemorrhagic stroke (2).

**Definition**

Systolic blood pressure  $\geq 140$  mmHg and/or diastolic blood pressure  $\geq 90$  mmHg among adults aged 18+ years.

**Unit of measure**

mmHG

**Method of  
measurement**

Blood pressure must be measured, not self-reported. Ideally three measures should be taken and mean systolic and mean diastolic blood pressure should be calculated as the average of the second and third measurements.

**Method of  
estimation/  
calculation**

Numerator/denominator\*100

- Numerator: Number of respondents with systolic blood pressure  $\geq 140$ mmHg or diastolic blood pressure  $\geq 90$ mmHg. Ideally three blood pressure measurements should be taken and the average systolic and diastolic readings of the second and third measures should be used in this calculation.
- Denominator: All respondents of the survey aged 18+ years with

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	measured blood pressure
	To calculate the age-standardized prevalence of raised blood pressure requires application of age-specific raised blood pressure prevalence rates to the WHO World Standard Population summed over all ages.
<b>Preferred data sources</b>	Population-based (preferably nationally representative) survey
<b>Other possible data sources</b>	The WHO STEPwise approach to Surveillance (STEPS) Pan American STEPS
<b>NCD framework</b>	Risk factor exposure <ul style="list-style-type: none"><li>• Goal specific indicator for WHO voluntary target # 6: 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure according to national circumstances</li><li>• Outcome indicator for:<ul style="list-style-type: none"><li>○ WHO's global monitoring framework # 11</li><li>○ Regional NCD Action Plan 2013 – 2019 # 3.3.5</li></ul></li></ul>
<b>Disaggregation</b>	Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.
<b>Expected frequency of data collection</b>	Every 5 years
<b>Limitations</b>	Potential limitations: measurement error

---

**Data type** Prevalence (expressed as percentage including 95% confidence interval for the estimate)

---

- References**
1. *Global health risks: mortality and burden of disease attributable to selected major risks*. Geneva, World Health Organization, 2009.
  2. *Diet, nutrition and the prevention of chronic diseases: report of a Joint WHO/FAO Expert Consultation*. Geneva, World Health Organization, 2003
- 

- Related links**
- STEPwise approach to surveillance (STEPS)  
<http://www.who.int/chp/steps/en/>
  - Pan Am STEPS Mapped Instrument & Dataset Structure  
[http://www.paho.org/hq/index.php?option=com\\_docman&task=doc\\_view&gid=16109&Itemid=](http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&gid=16109&Itemid=)



<b>Name abbreviated</b>	<b>Mean Blood Pressure</b>
<b>Indicator name</b>	Age-standardized mean of systolic blood pressure among persons aged 18+ years
<b>Rationale</b>	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. Research findings have suggested racial differences in the impact of elevated blood pressure on stroke risk (2, 3).
<b>Definition</b>	Average measured systolic blood pressure in the surveyed population age 18+ years
<b>Unit of measure</b>	Mean systolic blood pressure (mmHg)
<b>Method of measurement</b>	Blood pressure must be measured, not self-reported. Ideally three measures should be taken and mean systolic pressure should be calculated as the average of the second and third measurements.
<b>Method of estimation/ calculation</b>	<p>Numerator/denominator*100</p> <ul style="list-style-type: none"> <li>• Numerator: Sum of systolic blood pressure from all participants aged 18+ years. Ideally three blood pressure measurements should be taken and the average systolic reading of the second and third measures should be used in this calculation.</li> <li>• Denominator: Total number of respondents age 18+ years who had valid systolic blood pressure measurements</li> </ul> <p>To calculate the age-standardized mean systolic blood pressure requires application of age-specific mean systolic blood pressure to the WHO World</p>

Standard Population summed over all ages. The process of age-standardization is explained in Appendix 1.

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**Preferred data sources**

Population-based (preferably nationally representative) survey

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**Other possible data sources**

The WHO STEPwise approach to Surveillance (STEPS)  
Pan American STEPS

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**NCD framework**

Risk factor exposure.

- Goal specific indicator for WHO voluntary target # 6: 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure according to national circumstances
  - Outcome indicator for:
    - WHO’s global monitoring framework # 11
- 

**Disaggregation**

Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 5-year age groups.

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**Expected frequency of data collection**

Every 5 years

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**Limitations**

Data might be subject to measurement errors.

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**Data type**

Mean (expressed in mmHg including 95% confidence interval for the estimate)

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**References**

1. He J, Whelton PK. Elevated systolic blood pressure and risk of cardiovascular and renal disease: overview of evidence from observational epidemiologic studies and randomized controlled trials. *Am Heart J.* 1999 Sep;138(3 Pt 2):211-9.
2. Howard G et al. Racial differences in the impact of elevated systolic

- 
- blood pressure on stroke risk. *JAMA Intern Med.* (2013)
3. DG Beavers. Epidemiological, pathophysiological and clinical significance of systolic, diastolic and pulse pressure. *Journal of Human Hypertension* (2004) 18, 531–533
- 

**Related links**

- STEPwise approach to surveillance (STEPS)  
<http://www.who.int/chp/steps/en/>
- Pan Am STEPS Mapped Instrument & Dataset Structure  
[http://www.paho.org/hq/index.php?option=com\\_docman&task=doc\\_view&gid=16109&Itemid=](http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&gid=16109&Itemid=)
- Mean Systolic Blood Pressure (SBP), WHO  
[http://www.who.int/gho/ncd/risk\\_factors/blood\\_pressure\\_mean\\_t\\_ext/en/](http://www.who.int/gho/ncd/risk_factors/blood_pressure_mean_t_ext/en/)



<b>Name abbreviated</b>	<b>Raised Total Cholesterol</b>
<b>Indicator name</b>	Age-standardized prevalence of raised total cholesterol among persons aged 18+ years
<b>Rationale</b>	Raised cholesterol levels increase the risks of heart disease and stroke (1, 3). Globally, a third of ischemic heart disease is attributable to high cholesterol. Overall, raised cholesterol is estimated to cause 2.6 million deaths (4.5% of total) and 29.7 million DALYS, or 2 per cent of total DALYS (2). Raised total cholesterol is a major cause of disease burden in both the developed and developing world as a risk factor for ischemic heart disease and stroke (1, 3).
<b>Definition</b>	Defined as total cholesterol $\geq 5.0$ mmol/L or 190mg/dl\
<b>Unit of measure</b>	mmol/L or mg/dl
<b>Method of measurement</b>	Total cholesterol must be measured, not self-reported. There are two main blood chemistry screening methods- dry and wet chemistry. Dry chemistry uses capillary blood taken from a finger and used in a rapid diagnostic test. Wet chemistry uses a venous blood sample with a laboratory-based test. Most population-based surveys used dry chemistry rapid diagnostic tests to gather total cholesterol values.

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<b>Method of estimation/calculation</b>	<p>Numerator/denominator*100</p> <ul style="list-style-type: none"><li>• Numerator: Respondents with measured total cholesterol <math>\geq 5</math> mmol/L or 190mg/dl)</li><li>• Denominator: Respondents with a valid cholesterol measurement</li></ul> <p>To calculate the age-standardized prevalence of raised total cholesterol requires application of age-specific raised total cholesterol prevalence rates to the WHO World Standard Population summed over all ages. The process of age-standardization is explained in Appendix 1.</p>
<b>Preferred data sources</b>	Population-based (preferably nationally representative) survey
<b>Other possible data sources</b>	The WHO STEPwise approach to Surveillance (STEPS) Pan American STEPS
<b>NCD framework</b>	Risk factor exposure. WHO core indicator # 17 under the Global NCD Monitoring Framework.
<b>Disaggregation</b>	Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.
<b>Expected frequency of data collection</b>	Every 5 years. Every four-to-five years, coinciding with the risk factors survey. It is expected that countries will be able to report data on this indicator six months after the end of the survey
<b>Limitations</b>	Potential limitations include: <ul style="list-style-type: none"><li>• measurement error due to insufficient blood sample</li><li>• limited validity of measurement instruments</li></ul>
<b>Data type</b>	Prevalence (expressed as percentage including 95% confidence interval for the estimate)

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**References**

1. Ezzati M et al. Selected major risk factors and global and regional burden of disease. *The Lancet*, 2002, 360:1347-1360.
2. *Global health risks: mortality and burden of disease attributable to selected major risks*. Geneva, World Health Organization, 2009.
3. Stone NJ, Robinson et.al. ACC/AHA guideline on the treatment of blood cholesterol to reduce atherosclerotic cardiovascular risk in adults: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *Circulation*. 2013

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**Related links**

STEPwise approach to surveillance (STEPS)

<http://www.who.int/chp/steps/en/>

Pan Am STEPS Mapped Instrument & Dataset Structure

[http://www.paho.org/hq/index.php?option=com\\_docman&task=doc\\_view&gid=16109&Itemid=](http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&gid=16109&Itemid=)

<b>Name abbreviated</b>	<b>Mean Total Cholesterol</b>
<b>Indicator name</b>	Age-standardized prevalence of mean total cholesterol among persons aged 18+ years
<b>Rationale</b>	Raised cholesterol levels increase the risks of heart disease and stroke (1, 3). Globally, a third of ischemic heart disease is attributable to high cholesterol. Overall, raised cholesterol is estimated to cause 2.6 million deaths (4.5% of total) and 29.7 million DALYS, or 2 per cent of total DALYS (2). Raised total cholesterol is a major cause of disease burden in both the developed and developing world as a risk factor for ischemic heart disease and stroke (1, 3).
<b>Definition</b>	Mean total cholesterol.
<b>Unit of measure</b>	mmol/L or mg/dl
<b>Method of measurement</b>	Total cholesterol must be measured, not self-reported. There are two main blood chemistry screening methods- dry and wet chemistry. Dry chemistry uses capillary blood taken from a finger and used in a rapid diagnostic test. Wet chemistry uses a venous blood sample with a laboratory-based test. Most population-based surveys used dry chemistry rapid diagnostic tests to gather total cholesterol values.
<b>Method of estimation/ calculation</b>	<p>Numerator/denominator*100</p> <ul style="list-style-type: none"> <li>• Numerator: Total cholesterol measurements of respondents.</li> <li>• Denominator: Respondents with a valid cholesterol measurement</li> </ul> <p>To calculate the age-standardized prevalence of raised total cholesterol requires application of age-specific raised total cholesterol prevalence rates to the WHO World Standard Population summed over all ages. The process of age-standardization is explained in Appendix 1.</p>
<b>Preferred data sources</b>	Population-based (preferably nationally representative) survey

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<b>Other possible data sources</b>	The WHO STEPwise approach to Surveillance (STEPS) Pan American STEPS
<b>NCD framework</b>	Risk factor exposure. WHO core indicator # 17 under the Global NCD Monitoring Framework.
<b>Disaggregation</b>	Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.
<b>Expected frequency of data collection</b>	Every 5 years
<b>Limitations</b>	Potential limitations include: <ul style="list-style-type: none"><li>• measurement error due to insufficient blood sample</li><li>• limited validity of measurement instruments</li></ul>
<b>Data type</b>	Prevalence (expressed as percentage including 95% confidence interval for the estimate)
<b>References</b>	<ol style="list-style-type: none"><li>4. Ezzati M et al. Selected major risk factors and global and regional burden of disease. <i>The Lancet</i>, 2002, 360:1347-1360.</li><li>5. <i>Global health risks: mortality and burden of disease attributable to selected major risks</i>. Geneva, World Health Organization, 2009.</li><li>6. Stone NJ, Robinson et.al. ACC/AHA guideline on the treatment of blood cholesterol to reduce atherosclerotic cardiovascular risk in adults: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. <i>Circulation</i>. 2013</li></ol>
<b>Related links</b>	STEPwise approach to surveillance (STEPS) <a href="http://www.who.int/chp/steps/en/">http://www.who.int/chp/steps/en/</a>

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Pan Am STEPS Mapped Instrument & Dataset Structure

[http://www.paho.org/hq/index.php?option=com\\_docman&task=doc\\_view&gid=16109&Itemid=](http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&gid=16109&Itemid=)



<b>Name abbreviated</b>	<b>Raised Blood Glucose/Diabetes</b>
<b>Indicator name</b>	Age-standardized prevalence of raised blood glucose/diabetes among persons 18 + years of age
<b>Rationale</b>	<p>Expresses the prevalence of raised blood glucose/diabetes.</p> <p>Diabetes, impaired glucose tolerance and impaired fasting glycaemia are risk categories for future development of diabetes and cardiovascular disease (1). In 2008, diabetes was directly responsible for 1.3 million deaths (2). The two conditions represent a high risk of chronic complications such as cardiovascular disease, diabetic nephropathy, amputation, and blindness.</p>
<b>Definition</b>	<p>Percentage of persons 18 + years old, with raised blood glucose, diabetes or on medication for raised blood glucose/diabetes</p> <p>Fasting plasma glucose value <math>\geq 7.0</math> mmol/l (126mg/dl) or on medication for raised blood glucose among adults aged 18+ years.</p>
<b>Unit of measure</b>	mmol/L or mg/dl
<b>Method of measurement</b>	Fasting blood glucose must be measured, not self-reported, and measurements must be taken after the person has fasted for at least eight hours. There are two main blood chemistry screening methods- dry and wet chemistry. Dry chemistry uses capillary blood taken from a finger and used in a rapid diagnostic test. Wet chemistry uses a venous blood sample with a laboratory-based test. Most population-based surveys used dry chemistry rapid diagnostic tests to gather fasting blood glucose values.
<b>Method of estimation/</b>	

<b>calculation</b>	<p>Numerator/denominator * 100</p> <ul style="list-style-type: none"> <li>• Numerator: Number of respondents aged 18+ years with fasting plasma glucose value <math>\geq 7.0</math> mmol/L (126 mg/dl) or on medication for raised blood glucose. Fasting blood glucose must be measured, not self-reported, and measurements must be taken after the person has fasted for at least eight hours.</li> <li>• Denominator: Total number of respondents aged 18+ with measured fasting blood glucose \</li> </ul> <p>To calculate the age-standardized prevalence of raised blood glucose/diabetes requires application of age-specific raised blood glucose prevalence rates to the WHO World Standard Population summed over all ages. The process of age-standardization is explained in Appendix 1.</p>
<b>Preferred data sources</b>	<p>Population-based (preferably nationally representative) survey). It is expected that country use the STEPs-wide approach, which is a WHO methodology for NCD risk-factor surveillance</p>
<b>Other possible data sources</b>	<p>The WHO STEPwise approach to Surveillance (STEPS) Pan American STEPS</p>
<b>NCD framework</b>	<p>Risk factor exposure.</p> <ul style="list-style-type: none"> <li>• Goal specific indicator for WHO voluntary target # 7: Halt the rise in diabetes and obesity.</li> <li>• Outcome indicator for: <ul style="list-style-type: none"> <li>○ WHO’s global monitoring framework # 12</li> <li>○ Regional NCD Action Plan 2013 – 2019 # 3.3.1</li> <li>○ SP # 2.1.5</li> </ul> </li> </ul>
<b>Disaggregation</b>	<p>Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.</p>
<b>Expected frequency of data collection</b>	<p>Every 5 years</p>

**Limitations**

Potential limitations include:

- measurement error,
  - lack of fasting status,
  - limited validity of measurement instruments.
  - Lack of periodicity of the surveys
  - Depending of the quality of data and harmonization of methods of country estimates, PAHO can estimate a regional rate of control. Otherwise, PAHO will provide a control range for those countries that report by the established deadline.
- 

**Data type**

Prevalence (expressed as percentage including 95% confidence interval for the estimate)

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**References**

1. Levitan B et al. Is nondiabetic hyperglycemia a risk factor for cardiovascular disease? A meta-analysis of prospective studies. *Archives of Internal Medicine*, 2004, 164:2147-2155.
  2. *Global status report on noncommunicable diseases 2010*. Geneva, World Health Organization, 2011.
- 

**Related links**

World health Organization, International Diabetes Federation. Definition and diagnosis of diabetes mellitus and intermediate hyperglycemia: report of a WHO/IDF consultation Geneva: WHO; 2006. Available from:

[http://www.who.int/diabetes/publications/Definition%20and%20diagnosis%20of%20diabetes\\_new.pdf](http://www.who.int/diabetes/publications/Definition%20and%20diagnosis%20of%20diabetes_new.pdf)

STEPwise approach to surveillance (STEPS)

<http://www.who.int/chp/steps/en/>

Pan Am STEPS Mapped Instrument & Dataset Structure

[http://www.paho.org/hq/index.php?option=com\\_docman&task=doc\\_view&gid=16109&Itemid=](http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&gid=16109&Itemid=)

**Name abbreviated** **Diabetes Mellitus Incidence**

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**Indicator name** Incidence of diabetes mellitus (ICD10 E10-E14)

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**Rationale** 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 in order to inform screening interventions and policy actions.

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**Definition** Population who report having been diagnosed with diabetes during the last year

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**Unit of measure** An individual who reports having been diagnosed with diabetes during the last year by a health professional, or diabetes incidence as detected for the first time through the health care system.

Diabetes mellitus is defined as elevated fasting plasma glucose  $\geq 7$  mmol/l (126 mg/dl) or 2-h plasma glucose  $\geq 11.1$  mmol/l (200 mg/dl) (1). Fasting is defined as no caloric intake at least 8 hours prior to measurement.

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**Method of measurement** Retrospective analysis of the national diabetes registry system or self-reported in national or subnational risk factors surveys asking the following: [QUERY: Is this change (the identification of “the survey”) accurate? If not, give the correct description here, and review the use of “survey” for clarity and consistency in all of these Diabetes Mellitus Incidence pages.]

*Have you ever been told by a doctor or other health worker that you have raised blood sugar or diabetes?*

- *Yes*
- *No*

*Have you been told in the past 12 months?*

- *Yes*
  - *No*
- 

**Method of estimation/**

<b>calculation</b>	<p>Method of estimation from the national diabetes registry system:          New diabetic cases registered by the National Diabetes Registry in the past year, expressed as a percentage of the corresponding midyear population from World Population Prospect estimates, for a given year</p> <p>Calculation from survey data:          Numerator/denominator*100</p> <ul style="list-style-type: none"> <li>• Numerator: number of respondents who have reported been diagnosed with diabetes mellitus during the last year</li> <li>• Denominator: total number of respondents to the survey</li> </ul>
<b>Preferred data sources</b>	<ul style="list-style-type: none"> <li>• Properly constituted diabetes registers</li> <li>• National or subnational risk factors surveys</li> </ul>
<b>Other possible data sources</b>	<p>The WHO STEPwise approach to Surveillance (STEPS)          Pan American STEPS</p>
<b>NCD framework</b>	<p>Risk factor exposure. Expanded indicator.</p>
<b>Disaggregation</b>	<p>Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.</p>
<b>Expected frequency of data collection</b>	<p>Every 5 years</p>
<b>Limitations</b>	<p>There are several limitations with this indicator:</p> <ul style="list-style-type: none"> <li>• Approximately one third of cases of diabetes are undiagnosed. Therefore, the surveys and registries may underestimate the true incidence of diabetes.</li> <li>• Diabetes registries may not be national-level ones.</li> <li>• Because data from the surveys are cross-sectional, it is impossible to determine if an increase in new cases is due to a true increase in disease incidence, improved case ascertainment, or a combination of these factors.</li> <li>• Sample sizes for incidence cases of diagnosed diabetes in the surveys are not large enough to generate reliable incidence rates for racial or sex-age groups.</li> <li>• If information is used from self-reported sample surveys, data might be</li> </ul>

subject to systematic error resulting from non-coverage, non-response, or measurement error.

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**Data type**

Rate

- New cases of diabetes per 100,000 population
  - Survey results expressed as percentage with 95% confidence interval
- 

**References**

1. World Health Organization (WHO). Definition and diagnosis of diabetes mellitus and intermediate hyperglycemia: report of a WHO/IDF consultation. 2006
- 

**Related links**

- STEPwise approach to surveillance (STEPS)  
<http://www.who.int/chp/steps/en/>
  - Pan Am STEPS Mapped Instrument & Dataset Structure  
[http://www.paho.org/hq/index.php?option=com\\_docman&task=doc\\_view&gid=16109&Itemid=](http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&gid=16109&Itemid=)
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<b>Name abbreviated</b>	<b>Diabetes Mellitus Prevalence</b>
<b>Indicator name</b>	Prevalence of Diabetes Mellitus (ICD10 E10-E14)
<b>Rationale</b>	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.
<b>Definition</b>	The number of people in a population who have ever being diagnosed with diabetes.
<b>Unit of measure</b>	An individual who have ever being diagnosed with diabetes e.g., elevated fasting plasma glucose $\geq 7$ mmol/l (126 mg/dl) or in 2-h levels of plasma glucose $\geq 11.1$ 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
<b>Method of measurement</b>	<ul style="list-style-type: none"> <li>• Retrospective analysis of the National Diabetes Registry System</li> <li>• An individual who have ever being diagnosed with diabetes (1) e.g., elevated fasting plasma glucose e.g., elevated fasting plasma glucose <math>\geq 7</math> mmol/l (126 mg/dl) or in 2-h levels of plasma glucose <math>\geq 11.1</math> 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.</li> <li>• Self-reported from the survey: <i>Have you ever been told by a doctor or other health worker that you have raised blood sugar or diabetes? Yes/NO</i></li> </ul>

Method of estimation from the National Diabetes Registry System:

All diabetic cases registered by the National Diabetes Registry in the past year, expressed as a percentage of the corresponding midyear population

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from World Population Prospect estimates, for a given year

Calculation from survey data:

Numerator/denominator\*100

**Method of estimation/calculation**

- Numerator: number of people who report having ever being diagnosed with diabetes mellitus<sup>10</sup> e.g., elevated fasting plasma glucose  $\geq 7$  mmol/l (126 mg/dl) or 2-h plasma glucose  $\geq 11.1$  mmol/l (200 mg/dl)
- Total number of respondents of the survey

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**Preferred data sources**

National or subnational risk factors surveys

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**Other possible data sources**

The WHO STEPwise approach to Surveillance (STEPS)  
Pan American STEPS

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**NCD framework**

Risk factor exposure. Expanded indicator.

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**Disaggregation**

Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available, e.g., categories: male/female, rural/urban, by 10-year age groups.

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**Expected frequency of data collection**

Every 5 years

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**Limitations**

There are several limitations with this indicator:

- - Approximately one third of cases of diabetes are undiagnosed. Therefore, the surveys and registries may underestimate the true incidence of diabetes.
  - Diabetes registries may not be national level
  - Because data are cross-sectional from the surveys, it is impossible to determine if an increase of new cases is due to a true increase in disease incidence, improved case ascertainment, or a combination of these factors.
  - Sample sizes for incidence cases of diagnosed diabetes in the surveys are not large enough to generate reliable incidence rates for racial or sex-age
-

group

- 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 error.

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**Data type**

- New cases of diabetes per 100,000 population
- Survey results: Rate (expressed as percentage with 95% confidence interval for the estimate)

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**References**

1. World Health Organization (WHO). Definition and diagnosis of diabetes mellitus and intermediate hyperglycemia: report of a WHO/IDF consultation. WHO. Geneva 2006.

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**Related links**

- STEPwise approach to surveillance (STEPS)  
<http://www.who.int/chp/steps/en/>
- Pan Am STEPS Mapped Instrument & Dataset Structure  
[http://www.paho.org/hq/index.php?option=com\\_docman&task=doc\\_view&gid=16109&Itemid=](http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&gid=16109&Itemid=)

<b>Name abbreviated</b>	<b>Mean Blood Glucose</b>
<b>Indicator name</b>	Mean of fasting blood glucose in the population
<b>Rationale</b>	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.
<b>Definition</b>	Average of the levels of fasting blood glucose measured in the surveyed population
<b>Unit of measure</b>	Mean level of fasting blood glucose
<b>Method of measurement</b>	Measured, not self-reported
<b>Method of estimation /calculation</b>	<p>Numerator/denominator*100</p> <ul style="list-style-type: none"> <li>• Numerator: Sum of all the measurements of fasting blood glucose taken from the surveyed population</li> <li>• Denominator: Total number of adult respondents who had their fasting blood glucose taken</li> </ul>
<b>Preferred data sources</b>	National or subnational risk factors survey
<b>Other possible data sources</b>	The WHO STEPwise approach to Surveillance (STEPS) Pan American STEPS
<b>NCD framework</b>	Risk factor exposure. Expanded indicator.

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**Disaggregation** Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.

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**Expected frequency of data collection** Data might be subject to error resulting from measurement or variation depending on the test and the method used.

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**Limitations** Data might be subject to error resulting from measurement or variation depending on the test and the method used.

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**Data type** Mean (expressed as percentage with 95% confidence interval for the mean)

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**References**

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**Related links**

- STEPwise approach to surveillance (STEPS)  
<http://www.who.int/chp/steps/en/>
  - Pan Am STEPS Mapped Instrument & Dataset Structure  
[http://www.paho.org/hq/index.php?option=com\\_docman&task=doc\\_view&gid=16109&Itemid=](http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&gid=16109&Itemid=)
-



<b>Name abbreviated</b>	Overweight and Obesity in Adolescents	
<b>Indicator name</b>	Prevalence of overweight and obesity in adolescents (13-17 years)	
<b>Rationale</b>	The relationship between poor health outcomes/all-cause mortality and obesity is well- established. Worldwide, at least 2.8 million people die each year as a result of being overweight or obese, and an estimated 35.8 million (2.3 per cent) of global DALYs are caused by overweight or obesity (1).	
<b>Definition</b>	Percentage of adolescents 13-17 years of age who are overweight or obese.	
<b>Unit of measure</b>	kg/m <sup>2</sup>	
<b>Method of measurement</b>	Height and weight are measured.	
<b>Method of estimation/ calculation</b>	<p>Weight and height by age and sex in adolescents (13 to 17 years of age) measured according to WHO standards. According to the WHO growth reference for school-aged children and adolescents, overweight – one standard deviation body mass index for age and sex, and obese – two standard deviations body mass index for age and sex</p> <p>Body Mass Index (BMI): weight (Kg)/height (m<sup>2</sup>), according to WHO growth references for school-aged children and adolescents. Even though it has limitations, BMI is the easiest indicator to collect and is the most accepted for measuring body fat.</p> <p>Overweight: BMI for age &gt;+1 standard deviations (SD) of WHO’s 2007 reference median (equivalent to BMI 25 kg/m<sup>2</sup> at 19 years).</p>	

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Obesity: BMI for age  $>+2$  standard deviations (SD) of WHO's 2007 reference median (equivalent to BMI 30 kg/m<sup>2</sup> at 19 years).

WHO maintains the Global Database on Body Mass Index, which includes population-based surveys that fulfill a set of criteria. Data are checked for validity and consistency, and raw data sets are analyzed following a standard procedure to obtain comparable results.

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**Preferred data sources**

Population-based (preferably nationally representative) survey (including measurements according to WHO standard procedures)

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**Other possible data sources**

Global School-based Student Health Survey (GSHS)

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**NCD framework**

Risk factor exposure.

- Goal specific indicator for WHO voluntary target # 7: Halt the rise in diabetes and obesity.
  - Outcome indicator for:
    - WHO's global monitoring framework # 13
    - Regional NCD Action Plan 2013 – 2019 # 3.3.2
    - SP # 2.1.6
- 

**Disaggregation**

Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.

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**Expected frequency of data collection**

Every 5 years

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**Limitations**

Potential limitations include:

- Traditionally, the Global School-based Student Health Survey only included children 13-15 years old; it is expected that new surveys will include the group 13-17 years old.

- Nationally representative surveys are not available for all countries, and frequency varies depending on country policies and availability of funding.
- National surveillance systems are generally not reliable because of weak data collection procedures. Natural disasters may prevent surveys from being completed.
- There is a time lapse between data collection and publishing.
- Measurement error.

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**Data type**

Mean and standard deviation (SD) of measured BMI

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**References**

*Global health risks: mortality and burden of disease attributable to selected major risks.* Geneva, World Health Organization, 2009.

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**Related links**

1. World Health Organization. [Internet.] Global Database on Body Mass Index. Global database on body mass index. Available from:  
<http://apps.who.int/bmi/index.jsp>
2. World Health Organization. *Global health risks: mortality and burden of disease attributable to selected major risks*. Geneva: WHO; 2009. Available from:  
[http://www.who.int/healthinfo/global\\_burden\\_disease/GlobalHealthRisks\\_report\\_full.pdf](http://www.who.int/healthinfo/global_burden_disease/GlobalHealthRisks_report_full.pdf)
3. World Health Organization. Nutrition Landscape Information System (NLIS) country profile indicators: interpretation guide. Geneva: WHO; 2012. Available from:  
[http://www.who.int/nutrition/nlis\\_interpretationguide\\_isbn9789241599955/en/](http://www.who.int/nutrition/nlis_interpretationguide_isbn9789241599955/en/)
4. Pan American Health Organization. Plan of Action for the Prevention of Obesity of Obesity in Children and Adolescents. Washington, DC: PAHO; 2014. (Document CD53/9).



**Name  
abbreviated**

**Overweight and Obesity in Adults**



**Indicator name**

Age-standardized prevalence of overweight and obesity in adults aged 18+ years.

**Rationale**

The indicator will monitor trends in the prevalence of overweight and obesity in adult men and women 18 years of age and older. Even though it has limitations BMI is the easiest indicator to collect and is the most accepted one for measuring body fat

The relationship between poor health outcomes/all-cause mortality and obesity is well- established. Worldwide, at least 2.8 million people die each year as a result of being overweight or obese, and an estimated 35.8 million (2.3 per cent) of global DALYs are caused by overweight or obesity (1). In 2008, 9.8 per cent of men and 13.8 per cent of women in the world were obese (with a BMI  $\geq 30\text{kg/m}^2$ ), compared with 4. 8 per cent for men and 7.9 per cent for women in 1980 (2). An estimated 205 million men and 297 million women over the age of 20 were obese in 2008 – a total of more than half a billion adults worldwide (2).

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.

**Definition**

Percentage of adult men and women 18 years of age and older who are overweight or obese.

Defined as body mass index  $\geq 25\text{kg/m}^2$  for overweight and body mass index  $\geq 30\text{kg/m}^2$  for obesity in adults aged 18+ years.

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<b>Unit of measure</b>	kg/m <sup>2</sup>
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<b>Method of measurement</b>	Height and weight are measured.
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<b>Method of estimation/ calculation</b>	<p>Weight and height by age and sex in adult men and women 18 years of age and older, measured according to WHO standards.</p> <p>BMI= mass (kg)/(height (m))<sup>2</sup>, according to WHO references of growth for adults.</p> <p>Overweight is a person aged 18+ years measuring <math>\geq 25</math> kg/m<sup>2</sup> and obesity is persons aged 18+ years measuring <math>\geq 30</math> kg/m<sup>2</sup></p> <p>Numerator/denominator*100</p> <ul style="list-style-type: none"><li>• Numerator: Number of respondents who have a body mass index (BMI) between <math>\geq 25.00</math> and <math>\geq 30</math> kg/m<sup>2</sup> calculated from self-reported or measured weight and height.</li><li>• Denominator: Respondents for whom BMI can be calculated from their weight and height (excluding unknowns or refusals to provide weight or height).</li></ul> <p>To calculate the age-standardized prevalence of overweight and obesity requires application of age-specific overweight and obesity prevalence rates to the WHO World Standard Population summed over all ages. The process of age-standardization is explained in Appendix 1.</p> <p>WHO maintains the Global Database on Body Mass Index, which includes population-based surveys that fulfill a set of criteria. Data are checked for validity and consistency, and raw data sets are analyzed following a standard procedure to obtain comparable results.</p>
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<b>Preferred data sources</b>	Population-based (preferably nationally representative) survey
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<b>Other possible data sources</b>	The WHO STEPwise approach to Surveillance (STEPS) Pan American STEPS, other National Nutrition and Health surveys and Household expenditure surveys (making sure the measurements of height and
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weight follow standard WHO procedures)

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- NCD framework** Risk factor exposure.
- Goal specific indicator for WHO voluntary target # 7: Halt the rise in diabetes and obesity.
  - Outcome indicator for:
    - WHO's global monitoring framework # 14
    - Regional NCD Action Plan 2013 – 2019 # 3.3.2
    - SP # 2.1.6
- 

**Disaggregation** Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.

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**Expected frequency of data collection** Every 5 years

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- Limitations** Potential limitations: measurement error and representativeness of the sample
- Not all the countries in the Americas have measured nationally representative information on the prevalence of overweight and obesity in adult men and women (18 years of age and older).
  - Usually, nationally representative surveys are implemented every five years. However, such frequency varies depending on country policies and availability of funding.
  - National surveillance systems are generally not reliable because of weak data collection procedures. Natural disasters may prevent surveys from being completed.
  - There is also a time-lapse between data collection and publishing
- 

**Data type** Prevalence of  $\geq 25.00$  of measured BMI (expressed as percentage with 95% confidence interval for the estimate)

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## References

- *Global health risks: mortality and burden of disease attributable to selected major risks*. Geneva, World Health Organization, 2009.
- Finucane MM et al. National, regional, and global trends in body-mass index since 1980: systematic analysis of health examination surveys and epidemiological studies with 960 country-years and 9.1 million participants. *The Lancet*, 2011, 377:557-567

## Related links

- 
1. World Health Organization. NCD Global Monitoring Framework: Indicator Definitions and Specifications. [Internet]. Geneva: WHO
  2. Global database on body mass index. Available from:  
<http://apps.who.int/bmi/index.jsp>
  3. United States, Department of Health and Human Services, National Institutes of Health; National Health, Lung and Blood Institute; and North American Association for the Study of Obesity. *The Practical Guide Identification, Evaluation, and Treatment of Overweight and Obesity in Adults*. Bethesda, MD: NIH; 2000. (NIH Publication No. 00-4084). Available from:  
[https://www.nhlbi.nih.gov/files/docs/guidelines/prctgd\\_c.pdf](https://www.nhlbi.nih.gov/files/docs/guidelines/prctgd_c.pdf)
  4. de Onis M, Onyango AW, Borghi E, Siyam A, Nishida C, Siekmann J. Development of a WHO growth reference for school-aged children and adolescents. *Bulletin of the World Health Organization* 2007;85:660–667.
  5. World Health Organization. *Physical status: the use and interpretation of anthropometry: report of a WHO Expert Committee*. Geneva: WHO; 1995. (Technical report series 854).
  6. World Health Organization. *Global health risks: mortality and burden of disease attributable to selected major risks*. Geneva: WHO; 2009. Available from:  
[http://www.who.int/healthinfo/global\\_burden\\_disease/GlobalHealthRisks\\_report\\_full.pdf](http://www.who.int/healthinfo/global_burden_disease/GlobalHealthRisks_report_full.pdf)
  7. Nutrition Landscape Information System (NLIS) country profile indicators: interpretation guide. WHO. October 2012. Available from:  
[http://www.who.int/nutrition/nlis\\_interpretationguide\\_isbn9789241599955/en/](http://www.who.int/nutrition/nlis_interpretationguide_isbn9789241599955/en/)  
(please use same URL for Spanish version – only available in English))



**Name** **Overweight in Children**

**abbreviated**

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**Indicator name**

Percentage of children less than five years of age who are overweight

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**Rationale**

To monitor trends of obesity in children younger than 5 years of age.

Childhood obesity is one of the most serious public health challenges of the 21st century. The problem is global and is steadily affecting many low- and middle-income countries, particularly in urban settings. The prevalence has increased at an alarming rate. Globally, in 2010 the number of overweight children under the age of five is estimated to be over 42 million. Close to 35 million of these are living in developing countries (1).

Childhood overweight is associated with a higher probability of overweight in adulthood, which can lead to a variety of disabilities and diseases, such as diabetes and cardiovascular diseases. Overweight children are at risk of bullying and low self-esteem. Overweight and obesity, as well as their related diseases, are largely preventable. Prevention of childhood obesity therefore needs high priority (1).

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**Definition**

Percentage of children younger than 5 years of age who are overweight (with a body mass index (BMI) greater than two standard deviations (SD) from the median of the WHO Child Growth Standards). For consistency with clinical screening, prevalence-based data are commonly reported using a cut-off value, often  $<-2$  and  $>+2$  Z-scores. The rationale for this is the statistical definition of the central 95% of a distribution as the "normal" range, which is not necessarily based on the optimal point for predicting functional outcomes.

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**Unit of measure**

Body mass index (BMI), kg/m<sup>2</sup>

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**Method of measurement**

Measurements: weight and height in children 0 to 5 years of age. Children's weight and height is measured using the WHO recommended methodology, e.g., children under than 24 months of age are measured in a supine position, while children 24 months and older are measured while standing.

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**Method of estimation/calculation**

Overweight and obesity in children aged 0-5 years: weight-for-height greater than two standard deviations from the median weight-for-height of WHO's Child Growth Standards.

Country calculation: N/A<sup>28</sup>

Regional calculation: WHO maintains the Global Database on Child Growth and Malnutrition, which includes population-based surveys that meet a set of criteria. Data are checked for validity and consistency and raw data sets are analyzed following a standard procedure to obtain comparable results. Prevalence below and above defined cut-off points for weight-for-age, height-for-age, weight-for-height and body mass index (BMI)-for-age, in preschool children are presented using z-scores based on the WHO Child Growth Standards.

A detailed description of the methodology and procedures of the database, including data sources, criteria for inclusion, data quality control and database work-flow, are described in a paper published in 2003 in the International Journal of Epidemiology (de Onis & Blössner, 2003). Predominant type of statistics: adjusted.

A well-established methodology for deriving global and regional trends and forecasting future trends, have been published (de Onis. et al., 2004a, 2004b)

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**Preferred data sources**

National Surveys and national surveillance systems

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**Other possible data sources**

- Other population-based (preferably nationally representative) survey on children such as DHS, MICS National nutrition surveys, demographic and health surveys (DHS), multiple indicator cluster survey (MICS)

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<sup>28</sup> This indicator baseline is not applicable because it is a new indicator. New indicators are those being measured for the first time in the Strategic Plan and without current baseline data.

- Global Database on Child Growth and Malnutrition (WHO)

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**NCD framework** Risk factor exposure. Outcome indicator for PAHO Strategic Plan 2013 -2019.

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**Disaggregation**

Age, sex, and relevant sociodemographic stratifiers where available such as parental education and social economic status of a household and residence (urban/rural).

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**Expected frequency of data collection**

Every 5 years

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**Limitations**

Potential limitations include:

- Measurement error,
  - Nationally representative surveys are not performed in a systematic way,
  - National surveillance systems are generally not reliable because weak data collection procedures
  - Nationally representative surveys are not available for all countries.
  - While nationally representative surveys usually are carried out every five years, the frequency may vary depending on country policies and availability of funding.
  - National surveillance systems are generally not reliable because of weak data collection procedures. Natural disasters may prevent surveys from being completed.
  - There is also a time lapse between data collection and publishing.
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**Data type**

Percentage of 2 SD above median weight/height of measured BMI

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1. Population-based approaches to childhood obesity prevention, WHO 2012  
<http://www.who.int/dietphysicalactivity/childhood/approaches/en/>

References

**Related links**

1. de Onis, M. and Blössner M. The World Health Organization Global Database on Child Growth and Malnutrition: methodology and applications; *International Journal of Epidemiology* 2003; 32:518-26. Available from: <http://www.who.int/nutgrowthdb/publications/methodology/en/>
2. de Onis, M. Garza, et al. For the WHO Multicentre Growth Reference Study Group (2004a): The WHO Multicentre Growth Reference Study: Rationale, Planning, and Implementation. Available from: [http://www.sprs.com.br/templates/sprs/pdf/download/oms\\_curvas.pdf](http://www.sprs.com.br/templates/sprs/pdf/download/oms_curvas.pdf)
3. de Onis, M. Garza, et al. For the WHO Multicentre Growth Reference Study Group (2004b): The WHO Multicentre Growth Reference Study: Planning, study design, and methodology. Available from: <http://www.ingentaconnect.com/content/nsinf/fnb/2004/00000025/A00101s1/art00003>
4. World Health Organization. Nutrition. Global targets 2025. To improve maternal, infant and young child nutrition. Geneva: WHO. [Internet.] Available from: [http://www.who.int/nutrition/topics/nutrition\\_globaltargets2025/en/](http://www.who.int/nutrition/topics/nutrition_globaltargets2025/en/)
5. World Health Organization. Physical status: the use and interpretation of anthropometry: report of a WHO Expert Committee. Geneva: WHO; 1995. (Technical report series 854).
6. De Onis M, Onyango AW, Borghi E, Siyam A, Nishida C, Siekmann J. Development of a WHO growth reference for school-aged children and adolescents. *Bulletin of the World Health Organization* 2007; 85:660–667.
7. United Nations Children’s Fund, World Health Organization, The World Bank. UNICEF-WHO-World Bank Joint Child Malnutrition Estimates. (UNICEF, New York; WHO, Geneva; The World Bank, Washington, DC; 2012). Available from: [http://www.who.int/nutgrowthdb/jme\\_unicef\\_who\\_wb.pdf?ua=1](http://www.who.int/nutgrowthdb/jme_unicef_who_wb.pdf?ua=1)
8. World Health Organization. Nutrition Landscape Information System (NLIS) country profile indicators: interpretation guide. Geneva: WHO; October 2012. Available from: [http://apps.who.int/iris/bitstream/10665/44397/1/9789241599955\\_eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/44397/1/9789241599955_eng.pdf?ua=1)

<b>Name abbreviated</b>	<b>High-risk waist circumference</b>
<b>Indicator name</b>	Prevalence of high-risk waist circumference in adults 18+ years old.
<b>Rationale</b>	Changes in waist circumference reflect changes in risk factors for cardiovascular disease and other chronic diseases. Waist circumference is a more powerful determinant of subsequent risk of type 2 diabetes than is body mass index (BMI) (1).
<b>Definition</b>	Measure of abdominal obesity as a waist–hip ratio
<b>Unit of measure</b>	Size of waist circumference. WHO STEPS defines abdominal obesity as a waist–hip ratio above 90 cm for males and above 85 cm for females (or a BMI above 30.0) (2).
<b>Method of measurement</b>	Measured, not self-reported.  Arrange the levels of waist circumference in order according to their 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 an even number, the median will be the average of the two middle waist circumferences. The WHO STEPS protocol for measuring waist circumference instructs that the measurement be made at the approximate midpoint between the lower margin of the last palpable rib and the top of the iliac crest
<b>Method of estimation/calculation</b>	<ul style="list-style-type: none"><li>• Numerator: Number of adults 18+ years old with a waist–hip ratio above 90 cm for males and above 85 cm for females (or a BMI above 30.0)</li><li>• Denominator: Number of adults 18+ years old surveyed who have a waist–hip ratio measured</li></ul>

<b>Preferred data sources</b>	National or subnational risk factors survey that includes waist circumference measurement
<b>Other possible data sources</b>	The WHO STEPwise approach to Surveillance (STEPS) Pan American STEPS
<b>NCD framework</b>	Risk factor exposure. Expanded indicator.
<b>Disaggregation</b>	Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.
<b>Expected frequency of data collection</b>	Every 5 years
<b>Limitations</b>	Universal cut-off points or BMI and waist circumference are not appropriate for use worldwide, given ethnic or population-specific differences in disease risk for particular anthropometric measure. However, there may be general consistency in the cut-off points of waist–hip ratio for predicting CVD risk. Other potential limitations include measurement error, and limited validity of measurement instruments.
<b>Data type</b>	Prevalence of high-risk* waist circumference
<b>References</b>	<ol style="list-style-type: none"> <li>1. SirenR, Eriksson JG, Vanhanen H. Waist circumference a good indicator of future risk for type 2 diabetes and cardiovascular disease. <i>BMC Public Health</i>. 2012 Aug 9;12:631. doi: 10.1186/1471-2458-12-631.</li> <li>2. . World Health Organization. Waist circumference and waist–hip ratio: report of a WHO expert consultation, Geneva, 8–11 December 2008. Geneva: WHO; 2011.</li> </ol>

**Related links**

- STEPwise approach to surveillance (STEPS). World Health Organization  
<http://www.who.int/chp/steps/en/>

## National System Response: Indicators for Policies and Partnerships

Target	Indicator	NCD Framework
	<b>NCD Prevention Policies outside the Health Sector:</b> NCD prevention policies in at least three sectors outside the health sector (e.g., agriculture, trade, education, labor, development, finance, urban planning, environment, and transportation)	NCD PoA # 1.1.1
	<b>National Multisectoral Plan for NCD Prevention and Control:</b> Implementing a national multisectoral plan for NCD prevention and control	NCD PoA # 1.2.1
	<b>Social Protection Policies on NCD Interventions:</b> National social protection health schemes that address universal and equitable access to NCD interventions	NCD PoA # 1.3.1
	<b>Health Insurance Coverage:</b> Percentage of population covered with health insurance	Expanded # 34
	<b>Social Health Insurance Coverage:</b> Percentage of population covered with social health insurance	Expanded # 35
	<b>Model of Integrated Management for NCDs:</b> Implementing a model of integrated management for NCDs (e.g., Chronic Care Model, evidenced-based guidelines, clinical information system, self-care, community support)	NCD PoA #3.1.1
	<b>Use of the Strategic Fund to Procure Medicines and Health Technologies for NCDs:</b> Utilization of the PAHO Strategic Fund and/or sources of funding to procure essential medicines and other health technologies for CVD, cancer, diabetes and CKD	NCD PoA # 3.2.3
	<b>Expert Committee for the Selection and Use of Essential NCD Medicines and Technologies:</b> Official commission that selects, according to the best available evidence, and operating without conflicts of interest, NCD prevention, treatment, and palliative care medicines and technologies for inclusion in/exclusion from public sector services	NCD PoA # 4.1.1
	<b>Marketing to Children:</b> Policies to reduce the impact on children of marketing of foods and non-alcoholic beverages high in saturated fats, trans fatty acids, free sugars, or salt	GMF # 23
	<b>Food Labeling Policy:</b> Adoption of national policies on nutrition facts labels to help consumers make informed food choices and maintain healthy dietary practices	Expanded # 36
	<b>Utilization of Nutrition Labeling on Salt:</b> Percentage of respondents who look at labels to determine salt/sodium content in food products <a href="#">[</a>	Expanded # 37

	<b>Policies to Eliminate Trans Fats:</b> Adoption of national policies that limit saturated fatty acids and virtually eliminate partially hydrogenated vegetable oils in the food supply, as appropriate, within the national context and national programs.	<b>GMF # 21</b>
	<b>Anti-cigarette Information: Noticing Anticigarette Information in Newspapers/Magazines:</b> Percentage of respondents who have noticed information about the dangers of smoking cigarettes or that encourages quitting in newspapers or magazines in the last 30 days.	Expanded # 39 GATS
	<b>Anti-cigarette Information: Noticing Anticigarette Information on Television:</b> Percentage of respondents who have noticed health warnings on television in the last 30 days.	Expanded # 40 GATS
	<b>Anti-cigarette Information: Noticing Health Warning on Cigarette Packs:</b> Percentage of current smokers who noticed health warnings on cigarette packages in the last 30 days	Expanded #41 GATS
	<b>Anti-cigarette Information: Thinking About Quitting Smoking due to Warnings on Cigarette Packs:</b> Percentage of current smokers who thought about quitting smoking since they noticed health warnings on cigarette packages in the last 30 days.	Expanded # 42 GATS
	<b>Anti-cigarette Information: Cigarette Advertisement in Stores:</b> Number of respondents who have noticed cigarette advertisement and various cigarette promotions in the last 30 days	Expanded # 43 GATS
	<b>Cigarette Promotions:</b> Percentage of respondents who have noticed cigarette promotions in the last 30 days	Expanded # 44 GATS
	<b>Quantity and Cost of Last Cigarette Purchase:</b> Mean cost of manufactured cigarettes and cigarette affordability: Last cigarette purchase: quantity and cost	Expanded # 45 GATS
	<b>Road Safety: Use of Seatbelts:</b> Number of countries and territories with at least 70% use of seatbelts by all passengers	<b>SP # 2.3.1</b>



**Name abbreviated** **NCD Prevention Policies outside the Health Sector**

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**Indicator name** Number of countries with specific NCD prevention policies in at least three sectors outside the health sector (e.g., agriculture, trade, education, labor, development, finance, urban planning, environment, and transportation)

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**Rationale** The United Nations Declaration and Recommendation is for all Member States to develop national and regional “whole of government “approach with policies and plans guided by existing frameworks in order to address NCD prevention. National policies in sectors other than health have a major bearing on the risk factors and determinants for NCDs and injuries. Health gains can be achieved much more readily by integrating health into national strategies, as well as policies in sectors such as transport, trade, taxation, education, social planning and development, agriculture, urban planning, mass media, food and pharmaceutical production than through health policies alone. Such integrated approaches can be mutually beneficial to all sectors involved.

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**Definition** Policies: A specific official decision or set of decisions designed to carry out a course of action endorsed by political body, including a set of goals, priorities, and main directions for attaining these goals. The policy document can include strategy to give effect to policy.

Sectors out of health: legislature, ministries of trade and agriculture, industry, education, urban planning, energy, transport, social welfare, environment

Policy must be in active implementation/operational stage, e.g., has human resources and funding available to implement it.

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**Unit of measure** Number of countries who report they have specific NCD prevention policies in at least three sectors outside the health sector (e.g., agriculture, trade, education, labor, development, finance, urban planning, environment and transportation)

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**Method of** Self-report by countries through the periodic PAHO/WHO NCD Country

<b>measurement</b>	Capacity survey
<b>Method of estimation/calculation</b>	Number of countries that respond “yes” to the question: “Are NCDs or their key risk factors addressed by any other government ministry or department (e.g., ministry of sport, ministry of education)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don’t Know
<b>Preferred data sources</b>	PAHO/WHO Country Capacity Survey
<b>Other possible data sources</b>	Government reports and/or individual country health policy websites
<b>NCD framework</b>	National systems response. indicator for Regional NCD Action Plan 2013 – 2019 # 1.1.1
<b>Disaggregation</b>	None
<b>Expected frequency of data collection</b>	Every 2-5 years
<b>Limitations</b>	<p>Potential limitations include:</p> <ul style="list-style-type: none"> <li>• bias through self-report</li> <li>• misunderstanding/-interpretation of questions</li> <li>• limited validity of survey instruments</li> </ul>
<b>Data type</b>	Proportion
<b>References</b>	NCD Country Capacity Survey Questionnaire: Country Profile of Capacity and Response to Noncommunicable Diseases (NCDs). WHO, 2013

**Related links**

- Health system response and capacity to address and respond to NCDs  
[http://www.who.int/gho/ncd/health\\_system\\_response/surveillance\\_text/en/](http://www.who.int/gho/ncd/health_system_response/surveillance_text/en/)



**Name abbreviated** **National Multisectoral Plan for NCD Prevention and Control**

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**Indicator name** Number of countries implementing a national multisectoral plan for NCD prevention and control

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**Rationale** The health sector alone cannot adequately prevent and control NCD. There is a social, economic, cultural, environmental, and political context that influences NCDs, their risk factors, and the social determinants of health. Multisectoral action (MSA) is required to create enabling environments in homes, villages and cities so that healthy choices are the easy choices. Through the Political Declaration on NCDs, heads of state and governments committed to establish or strengthen by 2013 national multisectoral policies and plans for NCDs, taking into account the Global Strategy for the Prevention and Control of NCDs and the Regional NCD Action and Plan for the Americas.

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**Definition** Multisectoral: Concentrated action of few or all public sectors in the government which has been formed to take action to achieve health outcomes in a way which is more effective, efficient or sustainable than might be achieved by the health sector acting alone.

Plan: course of action which can correspond to policy or strategy, with defined activities, indicating who does what (type of activities and people responsible for implementation) when (time frame) how and with what resources to accomplish an objective.

National multisectoral plans for NCD prevention and control must be in the implementation or operational stage, e.g., has human resources and funding available to implement

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**Unit of measure** Number of countries who report implementation of a national multisectoral plan for NCD prevention and control.

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**Method of** Self-report by countries through the periodic PAHO/WHO NCD Country

<b>measurement</b>	Capacity survey
<b>Method of estimation/ calculation</b>	<p>Number of countries that respond “yes” to the question:  <i>Does your country have a national NCD policy, strategy or action plan which integrates several NCDs and their risk factors?</i></p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know</p> <p><i>If yes:</i>  <i>Is it a policy/strategy?</i> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know  <i>Is it an action plan?</i> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know</p> <p><i>Is it multisectoral?</i> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know  <i>Is it multi-stakeholder?</i> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know</p>
<b>Preferred data sources</b>	PAHO/WHO Country Capacity survey
<b>Other possible data sources</b>	National NCD reports
<b>NCD framework</b>	National systems response indicator for Regional NCD Action Plan 2013 – 2019 # 1.2.1
<b>Disaggregation</b>	None
<b>Expected frequency of data collection</b>	Every 2-5 years
<b>Limitations</b>	<p>Potential limitations include:</p> <ul style="list-style-type: none"> <li>• bias through self-report</li> <li>• misunderstanding/-interpretation of questions</li> </ul>

- limited validity of survey instruments

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**Data type**

Proportion

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**References**

NCD Country Capacity Survey Questionnaire: Country Profile of Capacity and Response to Noncommunicable Diseases (NCDs). WHO, 2013

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**Related links**

- Health system response and capacity to address and respond to NCDs  
[http://www.who.int/gho/ncd/health\\_system\\_response/surveillance\\_text/en/](http://www.who.int/gho/ncd/health_system_response/surveillance_text/en/)

<b>Name abbreviated</b>	<b>Social Protection Policies on NCD Interventions</b>
<b>Indicator name</b>	Number of countries with national social protection health schemes that address universal and equitable access to NCD interventions
<b>Rationale</b>	Although per capita health expenditure is relevant, no linear relationship exists between the amount spent and health outcomes. There are other variables that carry great weight, including social protection policies (or a lack of them), health system management and organization, health promotion activities, and regulation of the health market. Therefore, there is a need for NCD plans and programs that promote universal and equitable access.
<b>Definition</b>	A country can be considered as complying if: <ul style="list-style-type: none"><li>• There is explicit social protection policy with the focus on health promotion, prevention, diagnostics, treatment, rehabilitation, and palliative care in relation to NCDs.</li><li>• The policy/-ies have been implemented through plans and programs in at least one of the subsectors of the health system.</li><li>• There is information and data about the results of the activities under those plans and programs.</li></ul>
<b>Unit of measure</b>	Number of countries that report having national social protection health schemes that address universal and equitable access to NCD interventions.
<b>Method of measurement</b>	Self-report by countries
<b>Method of estimation/calculation</b>	Number of countries that respond “yes” to the question: “ <i>Does your country have national social protection health schemes that address universal and equitable access to NCD interventions?</i> ”
<b>Preferred data sources</b>	National health policies, plans, and programs led by Ministry of Health

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**Other possible data sources**

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**NCD framework** National systems response.  
Outcome indicator for regional NCD PoA 2013–2019 # 1.3.1

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**Disaggregation** None

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**Expected frequency of data collection** Every 2-5 years

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**Limitations** Potential limitations include:

- bias through self-report
- misunderstanding/-interpretation of questions
- limited validity of survey instruments
- plans and programs may not be widely implemented or cover the entire country
- populations and packages may vary among those who are insured

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**Data type** Proportion

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**References**

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**Related links** Health system response and capacity to address and respond to NCDs  
[http://www.who.int/gho/ncd/health\\_system\\_response/surveillance\\_text/en/](http://www.who.int/gho/ncd/health_system_response/surveillance_text/en/)

**Name abbreviated** **Health Insurance Coverage**

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<b>Indicator name</b>	Percentage of the population covered by health insurance
<b>Rationale</b>	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.
<b>Definition</b>	Percentage of population who report having any kind of health insurance, whether is private or social coverage
<b>Unit of measure</b>	Percentage of people who have social insurance, private insurance and prepaid plans
<b>Method of measurement</b>	Self-report by countries
<b>Method of estimation/ calculation</b>	<ul style="list-style-type: none"><li>• Numerator: Number of people who have any kind of health insurance (social, private, prepaid plans, etc.)</li><li>• Denominator: Midyear resident population</li></ul>
<b>Preferred data sources</b>	Obtained from national or subnational studies or health insurance data
<b>Other possible data sources</b>	
<b>NCD framework</b>	National systems response. Expanded indicator.

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**Disaggregation** Age, sex, residence, education level, and other relevant sociodemographic stratifiers where available.

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**Expected frequency of data collection** Every 5 years

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**Limitations** Potential limitations include:

- bias through self-report
- misunderstanding/misinterpretation of questions
- limited validity of survey instruments
- plans and programs may not be widely implemented or cover the entire country.

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**Data type** Prevalence

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**References**

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**Related links** .

<b>Name abbreviated</b>	<b>Social Health Insurance Coverage</b>
<b>Indicator name</b>	Percentage of the population covered by social health insurance
<b>Rationale</b>	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.
<b>Definition</b>	Percentage of population who report having government-mandated social health insurance
<b>Unit of measure</b>	An individual whose financing of health care costs are through a (government-mandated) social insurance program
<b>Method of measurement</b>	Self-report by countries
<b>Method of estimation/calculation</b>	<ul style="list-style-type: none"> <li>• Numerator: Number of residents whose financing of health care costs are through a (government-mandated) social insurance program</li> <li>• Denominator: Midyear resident population (18+ years) over the same calendar year UN Population Prospects, medium variant</li> </ul>
<b>Preferred data sources</b>	National or subnational health accounts
<b>Other possible data sources</b>	
<b>NCD framework</b>	National systems response. Expanded indicator.

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**Disaggregation** Age, sex, residence, education level, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 5-year age groups.

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**Expected frequency of data collection** Every 5 years

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**Limitations** Potential limitations include:

- bias through self-report
- misunderstanding/-interpretation of questions
- limited validity of survey instruments
- plans and programs may not be widely implemented or cover an entire country

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**Data type** Prevalence

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**References**

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**Related links** .



**Name abbreviated** **Model of Integrated Management for NCDs**

**Indicator name** Number of countries implementing a model of integrated management for NCDs (e.g., Chronic Care Model, evidenced-based guidelines, clinical information system, self-care, community support)

**Rationale** Care for noncommunicable diseases such as cardiovascular disease (CVD), diabetes, cancer, and chronic obstructive pulmonary disease (COPD) is a global problem. Research demonstrates that the vast majority of people with NCDs do not receive appropriate care. Only about half are diagnosed, and among those patients, only about half are treated. Among the quarter of people with NCDs who do receive care, only about half achieve the desired clinical treatment targets. Cumulatively, only about 1 in 10 people with chronic conditions are treated successfully (1). This is mainly the result of inadequate management, but also of insufficient access to care and the existence of numerous financial barriers (2).

Therefore, it is critical to integrate primary health care–based chronic care into existing services and programs and to consider chronic diseases not in isolation, but rather as one part of the health status of individuals, who may be susceptible to many other health risks.

Improving the health of chronic disease patients requires a change from essentially reactive health-care systems, primarily focused on treating people who are already sick, to proactive systems that are focused on keeping people as healthy as possible, the report says.

Care should be integrated across time, place, and conditions, and members of health-care team should collaborate with one another as well as with patients and their families to develop treatment goals, plans, and implementation strategies that are centered on patient needs, values, and preferences.

**Definition** Number of countries that report the implementation of a model of integrated management for NCDs (e.g., Chronic Care Model, evidenced-based guidelines, clinical information system, self-care, community support).

<b>Unit of measure</b>	Number of countries that report the implementation of a model of integrated management for NCDs
<b>Method of measurement</b>	Self-report by countries
<b>Method of estimation/ calculation</b>	Number of countries that respond “yes” to the question: “ <i>Does your country implement a model of integrated management for NCDs (e.g., Chronic Care Model, evidenced-based guidelines, clinical information system, self-care, community support?)</i> ”
<b>Preferred data sources</b>	National NCD programs
<b>Other possible data sources</b>	National health policies, plans and programs led by Ministry of Health
<b>NCD framework</b>	National systems response indicator for Regional NCD Action Plan 2013 – 2019 # 3.1.1
<b>Disaggregation</b>	None
<b>Expected frequency of data collection</b>	Every 2 years
<b>Limitations</b>	<p>Potential limitations include:</p> <ul style="list-style-type: none"> <li>• bias through self-report</li> <li>• misunderstanding/-interpretation of questions</li> <li>• limited validity of survey instrument</li> </ul>

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**Data type**

Proportion

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**References**

1. Hart JT.: Rule of halves: implications of increasing diagnosis and reducing dropout for future workload and prescribing costs in primary care. *Br J Gen Pract.* 1992;42(356):116–19.
  2. World Health Organization. Impact of out-of-pocket payments for treatment of non-communicable diseases in developing countries: a review of literature. Discussion Paper No. 2. Geneva: WHO; 2011. Available at [www.who.int/health\\_financing/documents/dp\\_e\\_11\\_02-ncd\\_finburden.pdf](http://www.who.int/health_financing/documents/dp_e_11_02-ncd_finburden.pdf). Accessed on 24 August 2012.
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**Related links**

- Innovative Care for Chronic Conditions: Organizing and Delivering High Quality Care for Chronic Noncommunicable Diseases in the Americas. 2013, PAHO.  
[http://www.paho.org/hq/index.php?option=com\\_content&view=article&id=8500&Itemid=39960](http://www.paho.org/hq/index.php?option=com_content&view=article&id=8500&Itemid=39960)



**Name abbreviated** **Use of the PAHO Strategic Fund to Procure Essential Medicines and Other Health Technologies for NCDs**

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**Indicator name** Utilization of the PAHO Strategic Fund to procure essential medicines and other health technologies for CVD, cancer, diabetes and CKD. [

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**Rationale** Purpose of the indicator is to assess use of the Strategic Fund

Many Latin American and Caribbean countries lack necessary funding to provide comprehensive care to patients with CVD, cancer, diabetes, or CKD. Additional funding is necessary to improve primary health care treatment among the population. As a procurement mechanism, the Strategic Fund allows participating members to utilize a common fund for payment of authorized purchases of essential public health commodities. Participation is voluntary and some countries prefer use their own procurement mechanism.

A study was done to review the use of the PAHO Strategic Fund and it found that Brazil had taken the most advantage of this resource opportunity. It concluded that the fund can contribute to increasing access to medicines and improving the management of the public health care system in Latin America (1) and the region as whole.

The PAHO Strategic Fund, also known as the Regional Revolving Fund for Strategic Public Health Supplies, was created by PAHO in September 2000 to assist PAHO Member States to promote access to quality essential public health supplies in the Americas. Drugs and supplies for following diseases are available through the Strategic Fund:

- Cancer: chemotherapy drugs, palliative care medicines, diagnostic imaging, radiotherapy
- CVD
- Diabetes
- Chronic Kidney Disease (CKD)
- HPV vaccine

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**Definition** Number of the countries that in the last two years have acquired essential medicines or other health technologies for CVD, cancer, diabetes or CKD

through the PAHO Strategic Fund.

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**Unit of measure**      Number of countries who report to utilizing the PAHO Strategic Fund and/or sources of funding to procure essential medicines and other health technologies for CVD, cancer, diabetes, and CKD in past two years.

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**Method of measurement**      Self-report by countries and/or review of purchase orders

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**Method of estimation/ calculation**      Number of countries that respond “yes” to the question: *“Does your country report to use of the PAHO Strategic Fund to procure essential medicines and other health technologies for CVD, cancer, diabetes and CKD?”*

*And/or*

Retrospective review of purchase orders by countries within the PAHO Strategic Fund

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**Preferred data sources**      National NCD programs and or the PAHO Strategic Fund records.

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**Other possible data sources**      Strategic Fund annual reports

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**NCD framework**      National systems response.  
Outcome indicator for Regional NCD Action Plan 2013 – 2019 # 3.2.3

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**Disaggregation**      None

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**Expected frequency of data collection**      Every 2-5 years

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**Limitations**

Potential limitations include:

- bias through self-report

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**Data type**

Proportion

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**References**

1. Myrza M. L. de L. Horst; Orenzio Soler: The PAHO Strategic Fund: a mechanism to facilitate access to medicines. *Rev Panam Salud Publica* vol.27 n.1 Washington Jan. 2010

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**Related links**

- The Regional Revolving Fund for Strategic Public Health Supplies  
[http://www.paho.org/hq/index.php?option=com\\_content&view=category&layout=blog&id=1159&Itemid=588](http://www.paho.org/hq/index.php?option=com_content&view=category&layout=blog&id=1159&Itemid=588)
- Health system response and capacity to address and respond to NCDs  
[http://www.who.int/gho/ncd/health\\_system\\_response/surveillance\\_text/en/](http://www.who.int/gho/ncd/health_system_response/surveillance_text/en/)



<b>Name abbreviated</b>	<b>Expert Committee for the Selection and Use of Essential Medicines and Technologies</b> <a href="#">↓</a>
<b>Indicator name</b>	Evaluation and selection of medicines and health technologies for NCDs for the public sector based on best current evidence and without conflict of interests
<b>Rationale</b>	<p>Purpose of this indicator is to measure countries’ capacity through an expert body to ensure optimal and rational use of essential medicines for NCDs, ensuring quality of care.</p> <p>Most countries have published a national essential medicine list. Most lists have been updated periodically; this exercise is crucial to reflect new therapeutic options and changing therapeutic needs (1). To best ensure the widest acceptance of the list, the selection process for essential medicines/technologies needs the involvement of an expert committee or a statutory body normally comprising a number of stakeholders, including prescribers, dispensers, academics, health facilities, civil society, professional organizations, and others.</p>
<b>Definition</b>	<p>Number of countries with an official commission/statutory body that selects NCD prevention, treatment and palliative care medicines/other health technologies for inclusion in/exclusion from public sector services, according to the best available evidence, and without conflicts of interest.</p> <p>Essential medicines are those that satisfy the priority health care needs of the population. They are selected with due regard to disease prevalence, evidence on efficacy and safety, and comparative cost-effectiveness. Essential medicines are intended to be available within the context of functioning health systems at all times, in adequate amounts, in the appropriate dosage forms, with assured quality, and at a price the individual and the community can afford. The implementation of the concept of essential medicines is intended to be flexible and adaptable to many different situations; exactly which medicines are regarded</p>

as essential remains a national responsibility (2).

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**Unit of measure** Number of countries who report having an official commission that selects NCD prevention, treatment and palliative care medicines and technologies for inclusion in/exclusion from public sector services., according to the best available evidence, and without conflicts of interest,

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**Method of measurement** Self-report by countries, National list of essential medicines, and list of the NCD medicines of the public sector.

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**Method of estimation/  
calculation** Number of countries that have an official commission that selects NCD prevention, treatment and palliative care medicines and technologies for inclusion in/exclusion from public sector services., according to the best available evidence, and without conflicts of interest.

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**Preferred data sources** National NCD programs

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**Other possible data sources** Pharmaceutical Sector Country Profiles Data and Reports

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**NCD framework** National systems response. Outcome indicator for Regional NCD Action Plan 2013 – 2019 #3.2.4

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**Disaggregation** None

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**Expected** Every 2 years

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**frequency of data collection**

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**Limitations**

Potential limitations include:

- bias through self-report
- misunderstanding/-interpretation of questions
- limited validity of survey instruments

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**Data type**

Proportion

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**References**

1. Laing R, Waning B, Gray A, Ford N, 't Hoen E. 25 years of the WHO essential medicines lists: progress and challenges. *Lancet* 2003 May 17;361(9370):1723-
2. World Health Organization. The selection and use of essential medicines. Report of the WHO Expert Committee, 2002 (including the 12th Model List of Essential Medicines). Technical Report Series No 914. Geneva: WHO,

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**Related links**

- Pharmaceutical Sector Country Profiles Data and Reports. Country data and full reports are listed by WHO region  
[http://www.who.int/medicines/areas/coordination/coordination\\_assessment/en/index1.html](http://www.who.int/medicines/areas/coordination/coordination_assessment/en/index1.html)
  - Essential medicines selection, WHO  
[http://www.who.int/selection\\_medicines/committees/en/](http://www.who.int/selection_medicines/committees/en/)
  - Health system response and capacity to address and respond to NCDs  
[http://www.who.int/gho/ncd/health\\_system\\_response/surveillance\\_text/en](http://www.who.int/gho/ncd/health_system_response/surveillance_text/en)
  - PAHO Resolution: CD45.R7 Access to Medicines. Washington, D.C., USA, 27 September-1 October 2004  
<http://iris.paho.org/xmlui/bitstream/handle/123456789/256/CD45.r7-e.pdf?sequence=1>
-



**Name abbreviated**                      **Marketing to Children**

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

**Rationale**                              Evidence from systematic reviews on the extent, nature and effects of food marketing to children concludes that advertising is extensive and other forms of food marketing to children are widespread across the world (1). Most of this marketing is for foods with a high content of fat, sugar or salt. Evidence also shows that television advertising influences children’s food preferences, purchase requests and consumption patterns (2). Television advertising is gradually being complemented by a mix of marketing communications that focus on branding and building relationships with consumers. Food marketing to children is now a global phenomenon and tends to be pluralistic and integrated, using multiple messages in multiple channels (2).

**Definition**                                Number of countries, which report they have a policy to reduce the impact on children of marketing of foods and non-alcoholic beverages high in saturated fats, trans fatty acids, free sugars, or salt

**Unit of measure**                      Number of countries, which report they have a policy to reduce the impact on children of marketing of foods and non-alcoholic beverages high in saturated fats, trans fatty acids, free sugars, or salt

**Method of measurement**            Self-report by countries through the periodic WHO NCD Country Capacity survey

**Method of**                                 Number of countries that respond “yes” to the question: “*Is your country*

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<b>estimation/ calculation</b>	<i>implementing any policies to reduce the impact on children of marketing of foods and non-alcoholic beverages high in saturated fats, trans fatty acids, free sugars, or salt? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know" (3)</i> “
<b>Preferred data sources</b>	PAHO/WHO NCD Country Capacity Survey 2015
<b>Other possible data sources</b>	National health policies, plans and programs led by Ministry of Health
<b>NCD framework</b>	National systems response. Outcome indicator for: · WHO's global monitoring framework # · Regional NCD Action Plan 2013 – 2019 # 2.3.1
<b>Disaggregation</b>	None
<b>Expected frequency of data collection</b>	Every 2 years
<b>Limitations</b>	Potential limitations include: <ul style="list-style-type: none"><li>• bias through self-report</li><li>• misunderstanding/-interpretation of questions</li><li>• limited validity of survey instruments</li></ul>
<b>Data type</b>	Proportion
<b>References</b>	<ol style="list-style-type: none"><li>1. <i>The extent, nature and effects of food promotion to children: a review of the evidence to December 2008</i>. Geneva, World Health Organization, 2009.</li><li>2. <i>Set of recommendations on the marketing of foods and non-alcoholic beverages to children</i>. Geneva, World Health Organization, 2010.</li><li>3. NCD Country Capacity Survey Questionnaire: Country Profile of Capacity and Response to Noncommunicable Diseases (NCDs). WHO, 2013</li></ol>

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4.

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**Related links**

- Assessing national capacity for the prevention and control of NCDs  
[http://www.who.int/chp/ncd\\_capacity/en/](http://www.who.int/chp/ncd_capacity/en/)
- Set of recommendations on the marketing of foods and non-alcoholic beverages to children  
<http://www.who.int/dietphysicalactivity/publications/recsmarketing/en/>

**Name abbreviated**                      **Food Labeling Policy**

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**Indicator name**                      Adoption of national policies on nutrition facts labels in line with international standards, in particular the Codex Alimentarius, for pre-packaged foods, in order to help consumers make informed food choices and maintain healthy dietary practices.

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**Rationale**                              Only a limited number of countries in the Region of the Americas have regulations requiring some form of nutrition labeling. Among the typical objectives of national labeling regulations are to provide consumers with information; to assist consumers in making healthy choices; and/ to encourage food manufacturers to develop healthy food products. In the greatest proportion of the countries in the Region, nutrition labeling is voluntary unless the food bears a nutrition claim and/or the food has a special dietary use. This is a reflection of the harmonizing influence of the *Codex Alimentarius*. There are, however, many differences between countries on the specifics of nutrition labeling. Cost-benefit analyses suggest that savings in health care costs are relatively greater than the costs incurred by mandatory labeling (1).

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**Definition**                              Number of countries that report they have adopted a national policy on nutrition facts labels in line with international standards, in particular the Codex Alimentarius, for pre-packaged foods, in order to help consumers make informed food choices and maintain healthy dietary practices.

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**Unit of measure**                      Number of countries that report that they have adopted a national policy on nutrition facts labels in line with international standards, in particular the Codex Alimentarius, for pre-packaged foods.

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**Method of measurement**                      Self-report by countries

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**Method of estimation/ calculation**                      Number of countries that respond “yes” to the question:  
  
21) Does your country have nutrition labelling, in line with international standards, in particular the Codex Alimentarius, for pre-packaged foods?  
 Yes    No    Don't  
  
Know

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IF NO: Skip to Module III

If yes:

21a) Does it have government regulation on front-of-package labelling?

Yes  No  Don't Know

21b) Does it have government regulation on health claims?

Yes  No  Don't Know

21c) Does it have regulation on health warnings?

Yes  No  Don't Know

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**Preferred data sources**

WHO Country Capacity Survey 2015

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**Other possible data sources**

National health policies, plans, and programs led by Ministry of Health

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**NCD framework**

National systems response. Expanded indicator.

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**Disaggregation**

None

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**Expected frequency of data collection**

Every 2-5 years

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**Limitations**

Potential limitations include:

- bias through self-report
- misunderstanding/-interpretation of questions
- limited validity of survey instruments

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**Data type**

Proportion

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**References**

1. Corinna Hawkes: Nutrition labels and health claims: the global regulatory environment. WHO, 2004.  
<http://whqlibdoc.who.int/publications/2004/9241591714.pdf>

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**Related links**

Assessing national capacity for the prevention and control of NCDs  
[http://www.who.int/chp/ncd\\_capacity/en/](http://www.who.int/chp/ncd_capacity/en/)

<b>Name abbreviated</b>	<b>Utilization of Nutrition Labeling on Salt</b>
<b>Indicator name</b>	Percentage of respondents who look at nutrition labeling to determine the salt or sodium content in food products
<b>Rationale</b>	<p>Through World Health Assembly resolution 66.10, the WHO Member States agreed on a voluntary global NCD target for a 30% relative reduction in mean population intake of salt, with the aim of achieving a target of less than 5 grams (approximately 2g sodium) per person per day by 2025. They also agreed on a voluntary global NCD target for a 25% relative reduction in the prevalence of raised blood pressure (defined as systolic blood pressure <math>\geq 140</math> mmHg and/or diastolic blood pressure <math>\geq 90</math> mmHg) by 2025.</p> <p>To help Member States progress on these targets, WHO is working on various efforts. One is assisting Member States to identify the population's salt consumption and major sources of sodium in their diet. Another initiative is working with the private sector to reformulate a set number of products available on the market. A third is developing health communication material to assist consumers increase awareness on salt/sodium and to inform consumers on how to read and interpret food labels.</p> <p>The purpose of this indicator is to assess the use of salt nutrition labeling among consumers.</p>
<b>Definition</b>	Percentage of respondents who look at labels to determine salt/sodium content in food products
<b>Unit of measure</b>	Respondents who look at nutrition labeling on the food packages to determine salt/sodium content in food products
<b>Method of measurement</b>	Self-report. <i>Do you look at the salt or sodium labels on food?(1)</i> <ul style="list-style-type: none"><li>• Yes</li><li>• No</li></ul>

**Method of estimation/calculation**

Numerator/denominator\*100

- Numerator: Number of respondents who look at labels to determine salt/sodium content in food products
  - Denominator: Number of respondents in the survey
- 

**Preferred data sources**

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**Other possible data sources**

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**NCD framework**

National system response. Expanded indicator.

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**Disaggregation**

Age, sex, residence, education level, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.

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**Expected frequency of data collection**

Every 5 years

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**Limitations**

Potential limitations include:

- bias in self-reporting
  - utilization of nutrition labels does not predict behavior change since actual salt reduction may not occur despite increased awareness
- 

**Data type**

Prevalence (expressed as percentage, with 95% confidence interval for the estimate)

**References**

1. Salt module of the WHO STEPwise approach to Surveillance (STEPS) instrument <http://www.who.int/chp/steps/instrument/en/>
- 

**Related links**



**Name** **Policies to Eliminate Trans Fats**

**abbreviated**

**Indicator name** Adoption of national policies that limit saturated fatty acids and virtually eliminate partial hydrogenated vegetable oils in the food supply, as appropriate, within the national context and national programs.

**Rationale** Trans fatty acids (TFA) negatively affect blood lipids and fatty acid metabolism, endothelial function and inflammation, thus increasing the risk of type 2 diabetes and cardiovascular diseases (1,2,3,4). TFA increase the risk for coronary heart disease through their negative affect on serum lipids, raising low-density lipoprotein (LDL) and decreasing high-density lipoprotein (HDL) in the blood, even more than saturated fat (5, 6, 4). In particular, the consumption of TFA from partially hydrogenated oils adversely affects multiple cardiovascular risk factors and contributes significantly to an increased risk of coronary heart disease events (5, 6, 4). TFA also worsen insulin resistance, particular among predisposed individuals with risk factors (e.g., raised blood glucose, overweigh obesity, or physical inactivity) (5, 4).

**Definition** Adoption of a policy to limit saturated fatty acids and virtually eliminate partially hydrogenated vegetable oils in the food supply

**Unit of measure** Number of countries who report they have adopted national policies that limit saturated fatty acids and virtually eliminate partially hydrogenated vegetable oils in the food supply

**Method of measurement** Self -report by countries through the periodic WHO NCD Country Capacity survey

**Method of estimation/ calculation** Number of countries that respond “yes” to the question: *Is your country implementing any national policies that limit saturated fatty acids and virtually eliminate industrially produced trans fats (i.e., partially hydrogenated vegetable oils) in the food supply?*

---

Yes  No  Don't Know

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**Preferred data sources** WHO NCD Country Capacity Survey

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**Other possible data sources** National health policies, plans and programs led by Ministry of Health

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**NCD framework** National systems response. Outcome indicator for:  
 · WHO's global monitoring framework #21  
 · Regional NCD Action Plan 2013 – 2019 # 2.3.2

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**Disaggregation** None

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**Expected frequency of data collection** Every 2 years

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**Limitations** Potential limitations include:

- bias through self-report
- misunderstanding/-interpretation of questions
- limited validity of survey instruments

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**Data type** Proportion

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**References**

1. Hu FB et al. Dietary fat intake and the risk of coronary heart disease in women. *New England Journal of Medicine*, 1997, 337:1491-1499.
2. Meyer KA et al. Dietary fat and incidence of type 2 diabetes in older Iowa women. *Diabetes Care*, 2001, 24:1528-1535.
3. Salmeron J et al. Dietary fat intake and risk of type 2 diabetes in women. *American Journal of Clinical Nutrition*, 2001, 73:1019-1026.
4. Nishida C and Uauy R. WHO Scientific Update on trans fatty acids (TFA). *European Journal of Clinical Nutrition*, 2009, 63 (Suppl 2): 1 - 75.
5. Fats and fatty acids in human nutrition. Report of an expert consultation (FAO Food and Nutrition Paper 91). Rome, Food and Agricultural

- Organization, 2011.
6. *Diet, nutrition and the prevention of chronic diseases: report of a Joint WHO/FAO Expert Consultation*. Geneva, World Health Organization, 2003

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**Related links**

- Assessing national capacity for the prevention and control of NCDs  
[http://www.who.int/chp/ncd\\_capacity/en/](http://www.who.int/chp/ncd_capacity/en/)

**Warn: Anti-Cigarette Information**

There are four important indicator measures from GATS that are included in this section to measure anti-cigarette information: 1) Awareness of anti-cigarette information in newspapers or magazines (Q13), 2) Awareness of anti-cigarette information on television (Q14), 3) Noticing health warnings on cigarette packs (Q15), and 4) Current smokers thinking about quitting because of the health warnings on cigarette packs (Q16).

<b>Name abbreviated</b>	<b>Anti-cigarette Information: Awareness of Anticigarette Information in Newspapers/Magazines</b>
<b>Indicator name</b>	Awareness of anti-cigarette smoking information in newspapers/magazines in the last 30 days
<b>Rationale</b>	To assess a country’s capacity to implement tobacco control measures effectively. WHO FCTC promotes and strengthen public awareness of tobacco control issues, using all available communication tools. Determines if the respondent noticed, in the past 30 days, any information in newspapers or magazines about the dangers of smoking cigarettes or that encourages quitting. The question is one of the key questions from the Global Adult Tobacco Survey (GATS).
<b>Definition</b>	Percentage of respondents who have noticed information about the dangers of smoking cigarettes or that encourages quitting in newspapers or magazines in the last 30 days.
<b>Unit of measure</b>	Percentage of respondents who have noticed information about the dangers of smoking cigarettes or that encourages quitting in newspapers or magazines in the last 30 days. (It is recommended that this indicator be reported for the overall population and separately among current tobacco smokers and non-smokers.)
<b>Method of measurement</b>	Self-report  Q13. Noticing Anti-Cigarette Information in Newspapers/Magazines

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*In the last 30 days, have you noticed information about the dangers of smoking cigarettes or that encourages quitting in newspapers or in magazines?*

- *Yes*
  - *No*
  - *Not applicable*
- 

**Method of estimation/calculation**

Numerator/Denominator \* 100

- Numerator: Number of respondents who have noticed information about the dangers of smoking cigarettes or that encourages quitting in newspapers or magazines in the last 30 days.
  - Denominator: Total number of respondents surveyed. (“Not applicable” responses are included)
- 

**Preferred data sources**

Global Adult Tobacco Survey, Global Adult Tobacco Surveillance System (GTSS)

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**Other possible data sources**

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**NCD framework**

National system response. Expanded indicator.

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**Disaggregation**

Age, sex, residence, education level, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.

It is recommended that this indicator be reported for the overall population and separately among current tobacco smokers and non-smokers.

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**Expected frequency of data collection**

Every 5 years

**Limitations**

Potential limitations include:

- bias through self-report, including underreporting of consumption
  - misunderstanding/-interpretation of questions
  - limited validity of survey instruments
- 

**Data type**

Prevalence (expressed as percentage with 95% confidence interval for the estimate)

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**References**

- The Global Adult Tobacco Survey (GATS)  
<http://www.who.int/tobacco/surveillance/survey/gats/en/>
  - The WHO STEPwise approach to Surveillance (STEPS)  
<http://www.who.int/chp/steps/en/index.html>
  - Tobacco Questions for Survey (TQS)  
<http://www.who.int/tobacco/publications/surveillance/tqs/en/>
  - WHO Framework Convention on Tobacco Control, 2003
- 

**Related links**

<b>Name abbreviated</b>	<b>Anti-cigarette Information: Awareness of Anticigarette Information on Television</b>
<b>Indicator name</b>	Awareness of anti-cigarette smoking information on television in the last 30 days.
<b>Rationale</b>	To assess a country's capacity to implement tobacco control measures effectively. WHO FCTC promotes and strengthen public awareness of tobacco control issues, using all available communication tools. The question is one of the key questions from the Global Adult Tobacco Survey (GATS).
<b>Definition</b>	Percentage of respondents who have noticed information about the dangers of smoking cigarettes or that encourages quitting on television in the last 30 days
<b>Unit of measure</b>	Awareness of Anti-Cigarette Smoking Information in Specific Channels: Percentage of respondents who have noticed information about the dangers of smoking cigarettes or that encourages quitting on television in the last 30 days. (It is recommended that this indicator be reported for the overall population and separately among current tobacco smokers and non-smokers).
<b>Method of measurement</b>	Self-report  <i>Q14. Noticing Anti-Cigarette Information on Television</i>  <i>In the last 30 days, have you noticed information about the dangers of smoking cigarettes or that encourages quitting on television?</i> <ul style="list-style-type: none"><li>• <i>Yes</i></li><li>• <i>No</i></li><li>• <i>Not applicable</i></li></ul>
<b>Method of estimation/</b>	

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<b>calculation</b>	<ul style="list-style-type: none"><li>• Numerator: Number of respondents who have noticed information about the dangers of smoking cigarettes or that encourages quitting on television in the last 30 days.</li><li>• Denominator: Total number of respondents surveyed. (“Not applicable” responses are included.)</li></ul>
<b>Preferred data sources</b>	<ul style="list-style-type: none"><li>• Tobacco Questions for Surveys (TQS)</li><li>• The Global Adult Tobacco Survey (GATS)</li></ul>
<b>Other possible data sources</b>	
<b>NCD framework</b>	National system response. Expanded indicator.
<b>Disaggregation</b>	<p>Age, sex, residence, education level, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.</p> <p>It is recommended that this indicator be reported for the overall population and separately among current tobacco smokers and non-smokers.</p>
<b>Expected frequency of data collection</b>	Every 5 years
<b>Limitations</b>	Potential limitations include: bias through self-report, including underreporting of consumption
<b>Data type</b>	Prevalence (expressed as percentage with confidence interval for the estimate)

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**References**

- The Global Adult Tobacco Survey (GATS)  
<http://www.who.int/tobacco/surveillance/survey/gats/en/>
  - The WHO STEPwise approach to Surveillance (STEPS)  
<http://www.who.int/chp/steps/en/index.html>
  - Tobacco Questions for Survey (TQS)  
<http://www.who.int/tobacco/publications/surveillance/tqs/en/>
  - WHO Framework Convention on Tobacco Control, 2003
- 

**Related links**

<b>Name abbreviated</b>	<b>Anti-cigarette Information: Noticing Health Warnings on Cigarette Packs</b>
<b>Indicator name</b>	Noticing Health Warnings on Cigarette Packs in the last 30 days
<b>Rationale</b>	To assess a country's capacity to implement tobacco control measures effectively. Despite conclusive evidence regarding the dangers of tobacco, relatively few tobacco users worldwide understand the full extent of the risk to their health. Health warning labels on cigarette and other tobacco package, and on all marketing materials, help inform consumers of these dangers. The question is one of the key questions from the Global Adult Tobacco Survey (GATS).
<b>Definition</b>	Noticing Health Warning Labels on Cigarette Packages: Percentage of current smokers who noticed health warnings on cigarette packages in the last 30 days.
<b>Unit of measure</b>	Respondents who have noticed health warnings on cigarette packages in the last 30 days.
<b>Method of measurement</b>	Self-report <i>Q15. Noticing Health Warnings on Cigarette Packs</i> <i>In the last 30 days, did you notice any health warnings on cigarette packages?</i> <ul style="list-style-type: none"><li>• <i>Yes</i></li><li>• <i>No</i></li><li>• <i>Did not see any cigarette packages</i></li></ul>
<b>Method of estimation/ calculation</b>	Numerator/Denominator*100 <ul style="list-style-type: none"><li>• Numerator: Number of current smokers who noticed health warnings on cigarette packages in the last 30 days.</li></ul>

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	<ul style="list-style-type: none"><li>• Denominator: Number of current smokers.</li></ul>
<b>Preferred data sources</b>	<ul style="list-style-type: none"><li>• Tobacco Questions for Surveys (TQS)</li><li>• The Global Adult Tobacco Survey (GATS)</li></ul>
<b>Other possible data sources</b>	
<b>NCD framework</b>	National system response. Expanded indicator.
<b>Disaggregation</b>	Age, sex, residence, education level, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 5-year age groups.
<b>Expected frequency of data collection</b>	Every 5 years
<b>Limitations</b>	Bias through self-report, including underreporting of consumption
<b>Data type</b>	Prevalence
<b>References</b>	Tobacco questions for surveys A subset of key questions from the Global Adult Tobacco Survey (GATS) 2 <sup>nd</sup> edition <a href="http://www.who.int/tobacco/publications/surveillance/tqs/en/index.html">http://www.who.int/tobacco/publications/surveillance/tqs/en/index.html</a>

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**Related links**

- The Global Adult Tobacco Survey (GATS)  
<http://www.who.int/tobacco/surveillance/survey/gats/en/>
- The WHO STEPwise approach to Surveillance (STEPS)  
<http://www.who.int/chp/steps/en/index.html>
- Tobacco Questions for Survey (TQS)  
<http://www.who.int/tobacco/publications/surveillance/tqs/en/>
- Tobacco Control Report for the Region of the Americas, PAHO 2013

**Name abbreviated** | **Anti-cigarette Information: Thinking About Quitting because of Health Warnings on Cigarette Packs**

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**Indicator name** | Thinking about quitting because of health warnings on cigarette packs in the last 30 days

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**Rationale** | To assess a country's capacity to implement tobacco control measures effectively. Despite conclusive evidence regarding the dangers of tobacco, relatively few tobacco users worldwide understand the full extent of the risk to their health. Health warning labels on cigarette and other tobacco package, and on all marketing materials, help inform consumers of these dangers. The question is one of the key questions from the Global Adult Tobacco Survey (GATS).

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**Definition** | Percentage of respondents who have noticed health warnings on cigarette packages in the last 30 days

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**Unit of measure** | Respondents who have noticed health warnings on cigarette packages in the last 30 days.

---

**Method of measurement** | Self-report. Administered if the respondent is a current smoker.

*Q16. Thinking About Quitting Because of Health Warnings on Cigarette Packs*

*In the last 30 days, have warning labels on cigarette packages led you to think about quitting?*

- *Yes*
  - *No*
  - *Don't know*
- 

**Method of**

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<b>estimation/ calculation</b>	Numerator/denominator*100 <ul style="list-style-type: none"><li>• Numerator: Number of current smokers who thought about quitting smoking in the last 30 days because of the warning labels on cigarette packages.</li><li>• Denominator: Number of current smokers. (“Don’t know” responses are included.)</li></ul>
<b>Preferred data sources</b>	<ul style="list-style-type: none"><li>• Tobacco Questions for Surveys (TQS)</li><li>• The Global Adult Tobacco Survey (GATS)</li></ul>
<b>Other possible data sources</b>	<ul style="list-style-type: none"><li>• The WHO STEPwise approach to Surveillance (STEPS)</li></ul>
<b>NCD framework</b>	National system response. Expanded indicator.
<b>Disaggregation</b>	Age, sex, residence, education level, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.
<b>Expected frequency of data collection</b>	Every 5 years
<b>Limitations</b>	Potential limitations include: bias through self-report, including underreporting of consumption
<b>Data type</b>	Prevalence (expressed as percentage with 94% confidence interval for the estimate)

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**References**

- The Global Adult Tobacco Survey (GATS)  
<http://www.who.int/tobacco/surveillance/survey/gats/en/>
  - The WHO STEPwise approach to Surveillance (STEPS)  
<http://www.who.int/chp/steps/en/index.html>
  - Tobacco Questions for Survey (TQS)  
<http://www.who.int/tobacco/publications/surveillance/tqs/en/>
  - Tobacco Control Report for the Region of the Americas, PAHO 2013
- 

**Related links**

Tobacco Free Initiative (TFI), WHO  
<http://www.who.int/tobacco/surveillance/survey/en/>

**Enforce: Cigarette Advertisements**

Following indicators from GATS measure respondents' exposure to cigarette advertising in stores (Q17) and various cigarette promotions (Q18).

**Name abbreviated** **Cigarette Advertisement in Stores**

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**Indicator name** Noticing cigarette advertisement and various cigarette promotions in the last 30 days

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**Rationale** To assess a country's capacity to implement tobacco control measures effectively. Enforce bans on Tobacco Advertising, Promotion and Sponsorship (TAPS) is described at WHO FCTC Article 13 and the MPOWER package as a measure to reduce the tobacco consumption. The question is one of the key questions from the Global Adult Tobacco Survey (GATS).

---

**Definition** Awareness of Cigarette Advertising in Specific Channels: Percentage of respondents who have noticed any advertisements or signs promoting cigarettes in stores in the last 30 days. (It is recommended that this indicator be reported for the overall population and separately among current tobacco smokers and non-smokers.)

---

**Unit of measure** Respondents who have noticed any advertisements or signs promoting in the last 30 days.

---

**Method of measurement** Self-report. Administered if the respondent is a current smoker.

*Q17. Cigarette Advertising in Stores*  
*In the last 30 days, have you noticed any advertisements or signs promoting cigarettes in stores where cigarettes are sold?*

- *Yes*
- *No*
- *Not applicable*

---

**Method of estimation/calculation**

Numerator/denominator\*100

- Numerator: Number of respondents who have noticed any advertisements or signs promoting cigarettes in stores in the last 30 days.
  - Denominator: Total number of respondents surveyed. (“Not applicable” responses are included.)
- 

**Preferred data sources**

- Tobacco Questions for Surveys (TQS)
  - The Global Adult Tobacco Survey (GATS)
- 

**Other possible data sources**

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**NCD framework**

National system response. Expanded indicator.

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**Disaggregation**

Age, sex, residence, education level, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.

It is recommended that this indicator be reported for the overall populations and separately among current tobacco smokers and non-smokers.

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**Expected frequency of data collection**

Every 5 years

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**Limitations**

Potential limitations include:

- bias through self-report, including underreporting of consumption

- misunderstanding/-interpretation of questions
- limited validity of survey instruments

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**Data type**

Prevalence (expressed as percentage with 95% confidence interval)

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**References**

- The Global Adult Tobacco Survey (GATS)  
<http://www.who.int/tobacco/surveillance/survey/gats/en/>
  - The WHO STEPwise approach to Surveillance (STEPS)  
<http://www.who.int/chp/steps/en/index.html>
  - Tobacco Questions for Survey (TQS)  
<http://www.who.int/tobacco/publications/surveillance/tqs/en/>
  - Tobacco Control Report for the Region of the Americas, PAHO 2013
- 

**Related links**

- Tobacco Free Initiative (TFI), WHO  
<http://www.who.int/tobacco/surveillance/survey/en/>

**Name abbreviated** **Cigarette Promotions**

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**Indicator name** Awareness of specific types of cigarette promotions in the last 30 days

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**Rationale** To assess a country’s capacity to implement tobacco control measures effectively. Enforce bans on Tobacco Advertising, Promotion and Sponsorship (TAPS) is described at WHO FCTC Article 13 and the MPOWER package as a measure to reduce the tobacco consumption. The question determine if the respondent has seen various cigarette promotions in the past 30 days. The question is one of the key questions from the Global Adult Tobacco Survey (GATS).

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**Definition** Awareness of Specific Types of Cigarette Promotions: Percentage of respondents who noticed [*free samples of cigarettes, cigarettes at sales prices, coupons for cigarettes, free gifts or discounts on other products when buying cigarettes, clothing or other items with a cigarette brand name or logo, cigarette promotions in the mail*] in the last 30 days. (It is recommended that this indicator be reported for the overall population and separately among current tobacco smokers and non-smokers.)

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**Unit of measure** Respondents who have noticed [*free samples of cigarettes, cigarettes ~~as~~ at sales prices, coupons for cigarettes, free gifts or discounts on other products when buying cigarettes, clothing or other items with a cigarette brand name logo, cigarette promotions in the mail*] in the last 30 days. Administered if the respondent is a current smoker.

---

**Method of measurement**

Self-report.

*Q18. Cigarette Promotions*

*In the last 30 days, have you noticed any of the following types of cigarette promotions?*

**READ EACH ITEM:** YES NO DON

*a. Free samples of cigarettes?* .....  1 .....  2 ..... [

*b. Cigarettes at sale prices?* .....  1 .....  2 ..... [

- c. Coupons for cigarettes? .....  1 .....  2..... [
- d. Free gifts or special discount offers on other products when buying cigarettes? .....  1 .....  2..... [
- e. Clothing or other items with a cigarette brand name or logo? .....  1 .....  2..... [
- f. Cigarette promotions in the mail?     1     2     7

**Method of estimation/calculation**

Numerator/Denominator\*100

- Numerator: Number of respondents who noticed [*free samples of cigarettes, cigarettes at sales prices, coupons for cigarettes, free gifts or discounts on other products when buying cigarettes, clothing or other items with a cigarette brand name or logo, cigarette promotions in the mail*] in the last 30 days
- Denominator: Total number of respondents surveyed. (“Don’t know” responses are included.)

**Preferred data sources**

- Tobacco Questions for Surveys (TQS)
- The Global Adult Tobacco Survey (GATS)

**Other possible data sources**

- The WHO STEPwise approach to Surveillance (STEPS)

**NCD framework**

National system response. Expanded indicator.

**Disaggregation**

Age, sex, residence, education level, and other relevant sociodemographic stratifiers where available.

It is recommended that this indicator be reported for the overall populations and separately among current tobacco smokers and non-smokers.

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**Expected frequency of data collection**

Every 5 years

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**Limitations**

Potential limitations include:

- bias through self-report, including underreporting of consumption
  - misunderstanding/-interpretation of questions
  - limited validity of survey instruments
- 

**Data type**

Prevalence (expressed as percentage with confidence interval)

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**References**

- The Global Adult Tobacco Survey (GATS)  
<http://www.who.int/tobacco/surveillance/survey/gats/en/>
  - The WHO STEPwise approach to Surveillance (STEPS)  
<http://www.who.int/chp/steps/en/index.html>
  - Tobacco Questions for Survey (TQS)  
<http://www.who.int/tobacco/publications/surveillance/tqs/en/>
  - Tobacco Control Report for the Region of the Americas, PAHO 2013,
- 

**Related links**

**Raise: Economics**

Data from the two following indicators (Q19, Q20) are from GATS and used with cigarette consumption data (Q3a) to create the economic indicators described below. Note that Q3a (previously detailed) must be selected along with Q19 and Q20 in order to properly administer these questions and calculate the indicators.

**Name abbreviated**                      **Quantity and Cost of Last Cigarette Purchase**

**Indicator name**                      Average cost of manufactured cigarettes and cigarettes affordability

**Rationale**                      To assess a country’s capacity to implement tobacco control measures effectively. Price and tax measures are an effective and important means of reducing tobacco use by various segments of the population, in particular young and disadvantaged people. It is considered one of the most of cost effective tobacco control measures. These two questions determine the quantity of cigarettes and how much money was paid the last time the respondent bought cigarettes for him/herself. Note that question Q3a is needed to administer these questions and to create the indicators. The question is one of the key questions from the Global Adult Tobacco Survey (GATS).

**Definition**                      Measures average cost of manufactured cigarettes and cigarette affordability

**Unit of measure**                      Manufactured cigarettes bought at last purchase

**Method of measurement**                      Self-report

*Q19. Last Cigarette Purchase - Quantity*

*The last time you bought cigarettes for yourself, how many cigarettes did you buy?*

**INTERVIEWER: RECORD NUMBER AND CHECK UNIT**

**CIGARETTES**.....  1

**PACKS**.....  2 → *How many cigarettes were in each pack?*

**CARTONS**.....  3 → *How many cigarettes were in each carton?*

---

OTHER SPECIFY: \_\_\_\_\_  4 → How many cigarettes were in each [FILL]?

NEVER BOUGHT CIGARETTES  5 → END SECTION

**Q20. Last Cigarette Purchase - Cost**

*In total, how much money did you pay for this purchase?*

INTERVIEWER: IF DON'T KNOW, ENTER 999

[FILL COUNTRY CURRENCY]

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**Method of estimation/  
calculation**

**Indicator 1**

Average Cost of a Pack of Manufactured Cigarettes (in local currency).

Calculation:

- 1) Using information on the number and unit of last purchase (e.g., 2 packs) and the number of cigarettes per unit (e.g., 20 cigarettes per pack), calculate the number of manufactured cigarettes bought at last purchase (2 packs x 20 cigarettes per pack = 40 cigarettes).
- 2) Divide the amount paid for the last purchase of manufactured cigarettes by the number of manufactured cigarettes bought at the last purchase to calculate the amount paid per cigarette (e.g., \$10/40 cigarettes = \$.25 per cigarette).
- 3) Multiply the amount paid per cigarette by 20 cigarettes/pack to calculate the amount paid per pack of manufactured cigarettes (e.g., \$.25 x 20 cigarettes/pack = \$5).
- 4) Calculate the number of manufactured cigarettes smoked per day for each individual (using Q3a).
- 5) Generate a new “manufactured cigarette weight”, equal to the product of the individual sampling weight and the number of manufactured cigarettes smoked per day.
- 6) Calculate the average amount paid per pack of manufactured cigarettes across all respondents, weighted by the new “manufactured cigarette weight”.

**Indicator 2**

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Cigarette Affordability: Average cost of 100 packs of manufactured cigarettes as a percentage of Gross Domestic Product (GDP) per capita.

Calculation:

- 1) Use the same approach as described above to calculate the consumption-weighted average cost per pack of 20 manufactured cigarettes.
  - 2) Multiply the average cost per pack by 100 to estimate the average cost of 100 packs.
  - 3) Divide the average cost of 100 packs by the per capita GDP and multiply by 100.
- 

**Preferred data sources**

- Tobacco Questions for Surveys (TQS)
  - The Global Adult Tobacco Survey (GATS)
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**Other possible data sources**

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**NCD framework**

National system response. Expanded indicator.

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**Disaggregation**

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**Expected frequency of data collection**

Every 5 years

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**Limitations**

- Potential limitations include:
- bias through self-report, including underreporting of consumption
  - misunderstanding/-interpretation of questions
  - limited validity of survey instruments
-

**Data type**      Mean

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**References**

- The Global Adult Tobacco Survey (GATS)  
<http://www.who.int/tobacco/surveillance/survey/gats/en/>
- Tobacco Questions for Survey (TQS)  
<http://www.who.int/tobacco/publications/surveillance/tqs/en/>
- Tobacco Control Report for the Region of the Americas, PAHO 2013,



**Name abbreviated**

**Road Safety: Use of Seatbelts**

**Indicator name**

Number of countries and territories with at least 70% use of seatbelts by all passengers

**Rationale**

Upon enactment of legislation for front seatbelt use in many countries in the Region, measuring rear seatbelt use indicates progress towards a comprehensive legislation. This indicator is in line with PAHO’s Plan of Action on Road Safety (2011), and it is a good advocacy tool for placing this issue on the public health agenda

**Definition**

Number of countries and territories with at least 70% use of seatbelts by all passengers

**Unit of measure**

Number of countries (Note: data is not available for the territories.)

**Method of measurement**

Self-reported by countries

**Method of estimation/calculation**

The indicator is calculated based on the percentage reported by the countries that responded to the questionnaire for WHO’s Global Status Report on Road Safety.

*What is the best ESTIMATE of seat-belt wearing rates in your country?*

*Percentage for ALL occupants (drivers, rear, front seats)<sup>29</sup>*

Regional calculation: the sum of the countries that have attained 70% or higher use of seatbelts by all passengers

<sup>29</sup> If no official figures are provided, please include any research or academic studies that may have been published on this issue. Please provide the date and source of this estimate and attach the relevant hard copies of this information).

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<b>Preferred data sources</b>	WHO Global Status Report on Road Safety; information gathered from national road safety questionnaires.
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**Other possible data sources**

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<b>NCD framework</b>	National systems response indicator for PAHO Strategic Plan 2013 – 2019 # 2.3.1
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**Disaggregation**

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<b>Expected frequency of data collection</b>	Data is collected every three years through a questionnaire at a national consensus meeting. The most recent data (2010) can be found in the Global Status Report on Road Safety 2013: ( <a href="http://www.who.int/violence_injury_prevention/road_safety_status/2013/en/">http://www.who.int/violence_injury_prevention/road_safety_status/2013/en/</a> ) ; the next data collection started in early 2014
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<b>Limitations</b>	Different methodologies have been used for the two WHO global reports on road safety to date, which makes the data not comparable. In addition, the questionnaires are based on the perception of the national team who fills them out and, therefore, the data is influenced by the background of the participants. Poor data quality has also been found in many countries
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<b>Data type</b>	Proportion
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<b>References</b>	Pan American Health Organization. Plan of Action on Road Safety. Washington, DC: 30 September 2011. (Document CD51/7, Rev. 1).
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<b>Related links</b>	<ul style="list-style-type: none"><li>• Global status report on road safety 2013 <a href="http://www.who.int/violence_injury_prevention/road_safety_status/2013/en/">http://www.who.int/violence_injury_prevention/road_safety_status/2013/en/</a></li></ul>
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## National System Response: Indicators for Health System Response

Target	Indicator	NCD Framework
<p><b>NCD target # 8:</b>  <b>At least 50% of eligible people receive drug therapy and counseling (including glycemic control) to prevent heart attacks and strokes</b></p> 	<p><b>Drug Therapy and Counseling to Prevent Heart Attacks and Stroke:</b> Proportion of eligible persons (defined as aged 40 years and over with a 10-year cardiovascular risk greater than or equal to 30%, including those with existing cardiovascular disease) receiving drug therapy and counseling (including glycemic control) to prevent heart attacks and strokes</p>	<p><b>GMF #18</b>  <b>NCD PoA #3.3.4</b></p>
<p><b>NCD target # 9:</b>  <b>80% availability of affordable basic technologies and essential medicines, including generics, required to treat major NCDs in both public and private facilities</b></p> 	<p><b>Essential Medicines and Technologies for NCDs:</b> Availability and affordability of quality, safe, and efficacious essential NCD medicines, including generics, and basic technologies in both public and private facilities</p>	<p><b>GMF #19</b>  <b>NCD PoA # 3.2.1</b></p>
	<p><b>Palliative Care:</b> Access to palliative care assessed by morphine-equivalent consumption of strong opioid analgesics (excluding methadone) per death from cancer</p>	<p><b>GMF # 20</b>  <b>NCD PoA # 3.2.2</b></p>
	<p><b>Affordable Treatment Plan for Chronic Kidney Disease (CKD):</b> Number of countries with a plan in place to increase access to affordable treatment options for patients affected by CKD, particularly end-stage renal disease</p>	<p><b>NCD PoA # 3.2.5</b></p>

	<b>Treatment for End-Stage Renal Disease (ESRD):</b> Number of countries and territories with a prevalence rate of treated end-stage renal disease of at least 700 patients per million population	<b>SP # 2.1.9</b>
	<b>Hypertension Control:</b> Percentage of persons with treated and controlled hypertension (<140/90mmHg) (ICD10 I10-I15)	<b>SP # 2.1.4</b>
	<b>HbA1C-based Diagnostic for Diabetes Control:</b> Percentage of patients who have received HbA1C-based diagnostic test for diabetes screening and/or control	Expanded # 46
	<b>Glycemic Control:</b> Percentage of adults who have ever their blood glucose checked	Expanded # 47
	<b>Diabetic Eye Examination:</b> Percentage of diabetics who had an eye exam	Expanded # 48
	<b>Diabetic Foot Examination:</b> Percentage of diabetics who had a foot exam	Expanded # 49
	<b>Hospital Discharges with Diagnosis of Diabetes:</b> Percentage of hospital discharges with diagnosis of diabetes (ICD10 E10-14)	Expanded # 50
	<b>Average Length of Stay in a Hospital because of Diabetes:</b> Average length of stay in a hospital because of diabetes (ICD10 E10-E14)	Expanded # 51
	<b>Amputations among Adults with Diabetes:</b> Percentage of amputations among adults with diabetes in a given year	Expanded # 52
	<b>Dialysis among Diabetic Patients:</b> Percentage of patients on dialysis among adults with diabetes in a given year.	Expanded # 53
	<b>Hospital Discharges with Diagnosis of COPD):</b> Percentage of hospital discharges with diagnosis of chronic obstructive pulmonary disease (COPD) (ICD10 J40-J47) in a given year	Expanded # 54
	<b>Average Length of Stay in a Hospital because of COPD:</b> Average length of stay in a hospital because of COPD (ICD10 J40-J47)	Expanded # 55
	<b>Breast Cancer Screening:</b> Proportion of women aged 50–69 years (and other age groups according to national programs or policies) in a three-year period with all positive cases found during screening provided effective and timely treatment	<b>NCD PoA # 3.3.7</b>
	<b>Cervical Cancer Screening:</b> Proportion of women between the ages of 30 and 49 screened for cervical cancer at least once, or more often, and for lower or higher age groups according to national programs or policies	<b>GMF # 25 NCD PoA # 3.3.6 SP # 2.1.8</b>

	<p><b>Vaccination for HPV:</b> Availability, as appropriate, if cost-effective and affordable, of vaccines against human papillomavirus, according to national programs and policies</p>	<p><b>GMF # 22</b> <b>NCD PoA # 3.3.8</b></p>
	<p><b>Vaccination for Hepatitis B:</b> Vaccination coverage against hepatitis B virus monitored by number of third doses of hepatitis B vaccine (HepB3) administered to infants</p>	<p><b>WHO # 24</b></p>



**Name abbreviated**      **Drug Therapy and Counseling to Prevent Heart Attacks and Stroke**

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**Indicator name**              Proportion of eligible persons who report receiving drug therapy and counseling (including glycemic control) to prevent heart attacks and strokes

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**Rationale**                      Population-based interventions alone will not be sufficient to prevent heart attacks and strokes for people with a 10 year cardiovascular risk of 30 per cent or higher. People at such risk level usually have modest elevations of multiple risk factors, such as smoking, raised blood pressure, raised cholesterol and/or diabetes. To prevent heart attacks and strokes in this population, cardiovascular risk needs to be lowered through counseling and appropriate drug therapy. Historic experience in high-income countries with declining cardiovascular mortality rates indicate that about 50 per cent of the decrease can be attributed to reduction of cardiovascular risk through treatment, including secondary prevention (1). The absolute risk approach, which is monitored by this indicator, provides the most cost effective way of achieving this objective.

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**Definition**                      Percentage of eligible persons (defined as aged 40 years and older with a 10-year cardiovascular disease (CVD) risk\*  $\geq 30\%$ , including those with existing CVD) receiving drug therapy\*\* and counseling\*\*\* (including glycemic control) to prevent heart attacks and strokes.

\*A 10-year CVD risk of  $\geq 30\%$  is defined according to Age, Sex, other relevant sociodemographic stratifiers where available, blood pressure, smoking status (current smokers OR those who quit smoking less than 1 year before the assessment), total cholesterol, and diabetes (previously diagnosed OR a fasting plasma glucose concentration  $>7.0$  mmol/l (126 mg/dl)).

\*\*Drug therapy is defined as taking medication for raised blood glucose/diabetes, raised total cholesterol, or raised blood pressure, or taking aspirin or statins to prevent or treat heart disease.

\*\*\*Counseling is defined as receiving advice from a doctor or other health worker to quit using tobacco or not start, reduce salt in diet, eat at least five servings of fruit and/or vegetables per day, reduce fat in diet, start or do more physical activity, maintain a healthy body weight or lose weight.

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**Unit of measure** Percentage of population

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**Method of measurement** Combination of self-reported data (age, sex, other relevant sociodemographic stratifiers where available, tobacco status, history of CVD, raised BP, raised TC, receiving drug therapy and counseling) and measured data (systolic blood pressure (SBP), fasting blood glucose and total cholesterol (TC))

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**Method of estimation/calculation**

- Numerator: Respondents who report receiving drug therapy or counseling is calculated by self-report from respondents reporting they are taking medication for raised blood glucose/diabetes, raised total cholesterol, or raised blood pressure, or taking aspirin or statins to prevent or treat heart disease; and receiving advice from a doctor or other health worker to quit using tobacco or not start, reduce salt in diet, eat at least five servings of fruit and/or vegetables per day, reduce fat in diet, start or do more physical activity, maintain a healthy body weight or lose weight.
- Denominator: Eligible people are either those people who currently self-report that they have existing CVD or who have a 10 year cardiovascular risk of 30 per cent or higher calculated by using the WHO/ISH Risk prediction charts for 14 WHO epidemiological sub-regions which provide the approximate estimates of cardiovascular disease (CVD) risk in people who do not have established coronary heart disease, stroke or other atherosclerotic disease, based on responses to the following: Age, gender, smoking status, SBP, TC and absence or presence of diabetes.

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**Preferred data sources**

- Population-based (preferably nationally representative) survey such as STEP surveys
- WHO/ISH cardiovascular risk prediction charts

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**Other possible data sources**

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**NCD framework** National system response. Goal specific indicator for WHO voluntary target # 8: At least 50% eligible people receive drug therapy and counseling (including glycemic control) to prevent heart attacks and strokes

- Outcome indicator for:
  - WHO’s global monitoring framework # 18
  - Regional NCD Action Plan 2013 – 2019 # 3.3.4

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**Disaggregation** .

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**Expected frequency of data collection** Every 5 years

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**Limitations** Potential limitations include:

- bias through self-report
- misunderstanding/-interpretation of questions
- limited validity of survey instruments
- measurement error due insufficient blood sample
- limited validity of measurement instruments

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**Data type** Prevalence (expressed as percentage with 95% confidence interval)

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**References** 1. *Guidelines for Primary Care in low resource settings*. Geneva, World Health Organization, 2012.

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**Related links**

- STEPwise approach to surveillance (STEPS)  
<http://www.who.int/chp/steps/en/>
- WHO/ISH Cardiovascular risk prediction charts  
[http://www.who.int/cardiovascular\\_diseases/publications/Chart\\_predictions/en/](http://www.who.int/cardiovascular_diseases/publications/Chart_predictions/en/)

<b>Name abbreviated</b>	<b>Essential Medicines and Technologies for NCDs</b>
<b>Indicator name</b>	Availability and affordability of quality, safe and efficacious essential noncommunicable disease medicines, including generics, and basic technologies in both public and private facilities
<b>Rationale</b>	Without effective medicines and essential diagnosing and monitoring equipment being available at health facilities to treat NCDs, patients will suffer short and long term adverse effects from their disease. WHO recommends drug treatment for high risk people, including those with diabetes, in order to prevent and control heart attacks, strokes, and complications from diabetes c. This set of technologies and medicines will enable these “best buy” interventions to be implemented in primary care (1).
<b>Definition</b>	<ul style="list-style-type: none"> <li>• Percentage of public and private primary health care facilities who have all of the following available:</li> <li>• Medicines - at least aspirin, a statin, an angiotensin converting enzyme inhibitors, thiazide diuretics, long acting calcium channel blockers, metformins, insulin, bronchodilators and steroid inhalants.</li> <li>• Technologies - at least functioning blood pressure measurement device, a functioning weighing scale, functioning devices for blood sugar and blood cholesterol measurement with required strips and urine strips for albumin assay</li> <li>• The <u>availability</u> of individual medicines is reported as the percentage of medicine outlets in which the medicine was found on the day of data collection. Summary data for availability is presented as either the median or mean availability of the medicines in the selected basket.</li> <li>• <u>Affordability</u> is the cost of treatment in relation to peoples’ income. In the WHO/HAI methodology, the measure is number of days of work by the lowest-paid unskilled national government worker to purchase a defined course of treatment for a specific condition.</li> </ul>
<b>Unit of measure</b>	Percentage of public and private primary health care facilities, which provide at least the minimum set of technologies and medicines for NCDs

<b>Method of measurement</b>	Facility assessment of availability against the minimum list of medicines and technologies
<b>Method of estimation/calculation</b>	Facilities must have the minimum list of essential medicines and basic technologies available during assessments. The minimum list is as follows: Medicines - at least aspirin, a statin, an angiotensin converting enzyme inhibitor, thiazide diuretic, a long acting calcium channel blocker, metformin, insulin, a bronchodilator and a steroid inhalant. Technologies - at least a functioning blood pressure measurement device, a weighing scale, height measuring equipment, blood sugar and blood cholesterol measurement devices with strips and urine strips for albumin assay
<b>Preferred data sources</b>	Nationally representative health facility assessment.
<b>Other possible data sources</b>	<ul style="list-style-type: none"> <li>• The WHO/HAI Project on Medicine Prices and Availability</li> <li>• The service availability and readiness assessment</li> </ul>
<b>NCD framework</b>	National systems response. Goal specific indicator for WHO voluntary target # 9: 80% availability of affordable basic technologies and essential medicines, including generics, required to treat major NCDs in both public and private facilities <ul style="list-style-type: none"> <li>• Outcome indicator for: <ul style="list-style-type: none"> <li>○ WHO's global monitoring framework # 19</li> <li>○ Regional NCD Action Plan 2013 – 2019 # 3.2.1</li> </ul> </li> </ul>
<b>Disaggregation</b>	Public and private facilities.
<b>Expected frequency of data collection</b>	Every 5 years
<b>Limitations</b>	<ul style="list-style-type: none"> <li>• Availability of survey results in the countries</li> </ul>

**Data type** Proportion

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**References** (1) *From burden to “best buys”: reducing the economic impact of non-communicable diseases in low-and middle-income countries*. Geneva, World Economic Forum, 2011.

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**Related links**

- Service availability and readiness assessment, WHO  
[http://www.who.int/healthinfo/systems/sara\\_introduction/en/](http://www.who.int/healthinfo/systems/sara_introduction/en/)

HAI Database of medicine prices, availability, affordability and price components

<http://www.haiweb.org/MedPriceDatabase/>



**Name  
abbreviated**

**Palliative Care**

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**Indicator name**

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

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**Rationale**

Every year, tens of millions of patients with noncommunicable diseases require palliative care to relieve suffering or, when curative treatment is no longer an option, ensure the highest possible quality of life until death. Although it is considered an integral part of health services for many noncommunicable diseases and although morphine is considered an essential medicine by the WHO and is on most national essential medicine lists, the vast majority of these patients do not have access to palliative care and pain relief and face unnecessary suffering as a result (1,2). The objective in the Americas is to ensure optimal and rational use of opioids for NCDs and increase access to palliative care by 50% by 2019.

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**Definition**

Consumption of morphine-equivalent strong opioid analgesics (excluding methadone) per death from cancer. Morphine-equivalent is a method of standardizing and combining volumes of opioids with differing potencies and is used as a measure of opioid consumption, which is used as the indicator for access to pain and palliation.

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**Unit of measure**

Number of cancer deaths, per 100,000 population and consumption of morphine-equivalent strong opioid analgesics (excluding methadone). Morphine-equivalent is a metric to standardize doses of opioids by potency and allow combination and comparison of different medicinal opioids and is taken from the ratios of the defined daily doses (DDD-oral dosing for all except fentanyl, which is trans-dermal) as described by the WHO Collaborating Centre for Drug Statistics Methodology. A morphine-equivalent kilogram of opioids expresses the volume of strong opioids consumed if all volumes are standardized against morphine. Because of methadone's widespread use as opioid substitution therapy, it is excluded from estimation of opioid

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consumption for pain relief and palliative care.

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**Method of measurement**

Morphine-equivalent volumes are calculated as:  
 $(1 * \text{morphine}) + (83.3 * \text{fentanyl}) + (5 * \text{hydromorphone}) + (1.33 * \text{oxycodone}) + (0.25 * \text{pethidine})$

Opioid consumption data are available from annual reports the International Narcotics Control Board (INCB) (2) and are reported as kilograms or grams (for fentanyl). Calculations of indicators of opioid consumption usually use an average of consumption of each strong opioid over the previous three years.

For number of cancer deaths, WHO obtains data on deaths by age, sex, other relevant sociodemographic stratifiers where available and cause of death, as reported annually by the mortality statistics (MS) from their death registration systems

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**Method of estimation/calculation**

Levels of consumption of opioid medicines in kilograms or grams (for fentanyl) are documented by the INCB on the basis of statistics on manufacture and trade provided by Governments. Consumed quantities include those distributed by wholesalers or manufacturers to retailers (mainly pharmacies and hospitals) plus quantities imported directly by retailers. In countries where the retailers obtain their supply from abroad, quantities declared as imported are considered to be destined for consumption. Therefore, the average reported consumption for the previous three-year period in many cases provides a more accurate estimate of actual consumption since volumes procured in one year may be consumed in the following year. Consumption is divided by the number of cancers deaths occurring in the population per year.

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**Preferred data sources**

Cancer deaths from vital registration systems which record deaths with sufficient completeness to allow estimation of all-cause death rates.

Consumption of opioids from International Narcotics Control Board annual reports for narcotics consumption.

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**Other possible data sources**

Opioid consumption data from national competent authorities

The American Cancer Society's Treat the Pain program publishes this indicator for all countries with available data, using opioid consumption data

from the International Narcotics Control Board and cancer mortality data from the World Health Organization at [www.TreatthePain.org/Data](http://www.TreatthePain.org/Data).

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<b>NCD framework</b>	National system response. <ul style="list-style-type: none"><li>• WHO's global monitoring framework core indicator # 20</li><li>• Regional NCD Action Plan 2013 – 2019 # 3.2.2</li></ul>
<b>Disaggregation</b>	None
<b>Expected frequency of data collection</b>	Annual
<b>Limitations</b>	Potential limitations include: <ul style="list-style-type: none"><li>• incomplete administrative records</li><li>• incomplete or unusable death registration data</li></ul>
<b>Data type</b>	Mean (consumption of morphine-equivalent strong opioid analgesics -excluding methadone- over the past three years per death from cancer)
<b>References</b>	1) Seya MJ et al. A first comparison between the consumption of and the need for opioid analgesics at country, regional and global level. <i>Journal of Pain and Palliative Care Pharmacotherapy</i> , 2011; 25(1): 6-18. (2) Lynch T et al. Mapping levels of palliative care development: a global update 2011. ( <a href="http://www.thewpca.org/resources/">http://www.thewpca.org/resources/</a> , accessed 18 July 2012). (3) WHO Collaborating Centre for Drug Statistics Methodology. ATC/DDD Index 2014 ( <a href="http://www.whocc.no/atc_ddd_index/">http://www.whocc.no/atc_ddd_index/</a> )
<b>Related links</b>	<ul style="list-style-type: none"><li>• Report of the International Narcotics Control Board on the Availability of Internationally Controlled Drugs: Ensuring Adequate Access for Medical and Scientific Purposes. International Narcotics Control Board, 2010. <a href="http://www.incb.org/documents/Publications/AnnualReports/AR2010/Supplement-AR10_availability_English.pdf">http://www.incb.org/documents/Publications/AnnualReports/AR2010/Supplement-AR10_availability_English.pdf</a></li></ul>

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- United Nations International Narcotics Control Board, Narcotic Drugs Technical Reports: [https://www.incb.org/incb/en/narcotic-drugs/Technical\\_Reports/narcotic\\_drugs\\_reports.html](https://www.incb.org/incb/en/narcotic-drugs/Technical_Reports/narcotic_drugs_reports.html)
- Treat the Pain program at the American Cancer Society, Data: <http://www.treatthepain.org/data>
- WHO CC on cancer policy and pain studies: <http://www.painpolicy.wisc.edu/sites/www.painpolicy.wisc.edu/files/amroME.pdf>



**Name abbreviated**

**Affordable Treatment Plan for Chronic Kidney Disease (CKD)**

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**Indicator name**

Number of countries with a plan in place, as appropriate, to increase access to affordable treatment options for patients affected by CKD, particularly end-stage renal disease

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**Rationale**

CKD significantly adds to the global burden of disease is often a co-morbidity with the leading chronic diseases; CVD, cancer, diabetes, and COPD. In addition CKD constitutes a major risk factor for development of CVD and for cardiovascular mortality. ESRD poses a significant threat to individuals, families, and health systems as it is expensive to treat, requires technology and specialized personnel. Prevention and early detection should be a focus in increasing access and affordability to care.

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**Definition**

CKD is defined as decreased kidney function and/or kidney damage persisting for at least 3 months yet it implies a permanent and often progressive renal damage. Kidney dysfunction is indicated by a glomerular filtration rate (GFR)  $<60$  mL/min per  $1.73$  m<sup>2</sup>. Kidney damage is most frequently manifested as increased urinary albumin excretion (e.g., urinary albumin–creatinine ratio  $>30$  g/g). CKD is categorized into 5 stages:

- Stage 1: Kidney damage with GFR  $\geq 90$  mL/min per  $1.73$  m<sup>2</sup>
- Stage 2: Kidney damage with GFR of 60–89 mL/min per  $1.73$  m<sup>2</sup>
- Stage 3: GFR of 30–59 mL/min per  $1.73$  m<sup>2</sup>
- Stage 4: GFR of 15–29 mL/min per  $1.73$  m<sup>2</sup>
- damage
- Stage 5: GFR  $<15$  mL/min per  $1.73$  m<sup>2</sup>, or
- kidney failure treated by dialysis or transplantation[1]

Definition of treatment:

A specific therapeutic and preventive plan must be in implementation for stages 3 to 5 and must show increase access to coverage for patients with CKD based on the clinical stage of the disease.

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**Unit of measure**

Number of countries with a plan in place to increase access to affordable

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treatment options for patients affected by stages 3 to 5 of CKD, particularly end-stage renal disease.

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**Method of measurement**

Self-report by countries

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**Method of estimation/ calculation**

Number of countries that respond “yes” to the question: “*Does your country have a plan in place to increase access to affordable treatment options for patients affected by CKD, particularly end-stage renal disease?*”

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**Preferred data sources**

N/A

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**Other possible data sources**

For renal replacement treatment, either dialysis or transplantation, a significant source is that provided by National Renal Replacement (dialysis and kidney transplantation) registries in countries where they are available. It is strongly encouraged to invite nations to create and keep specific transplantation and renal replacement registries in order to have reliable metrics.

For countries with appropriate programs for early detection of reduced renal function as defined as CKD 4 and 5 (eGFR <30 ml/min, predialysis) it would be desirable to have a report on this issue.

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**NCD framework**

National systems response.  
Outcome indicator for Regional NCD Action Plan 2013 – 2019 # 3.2.5

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**Disaggregation**

None

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**Expected frequency of data collection**

Every 2 years

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**Limitations**

Potential limitations include:

- Unavailability of reliable data due to absence of national renal replacement registries in some nations of the region.
- bias through self-report, including underreporting of events or actions
- misunderstanding/-interpretation of questions
- limited validity of survey instruments

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**Data type**

Proportion

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**References**

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**Related links**

Kidney disease | improving global outcomes

<http://kdigo.org/home/>

International Society of Nephrology.

<http://www.theisn.org/itemid-666>

Sociedad Latinoamericana de Nefrología e Hipertensión

<http://www.slanh2014.org/index.html>



**Name abbreviated**

**Treatment for End-Stage Renal Disease (ESRD)**

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**Indicator name**

Number of countries and territories with a prevalence rate of treated end-stage renal disease of at least 700 patients per million population

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**Rationale**

Expresses the level of access to services and treatment (dialysis, hemodialysis and transplantation) for patients with end-stage renal disease requiring replacement therapy or renal function.

There is an important association between the prevalence of diabetes, hypertension and the number of patients on renal replacement treatment (RRT), yet there is a diversity of causes leading to end-stage renal disease (1). Older people are at a higher risk of developing ESRD. Elevated prevalence of systemic hypertension as well as of obesity are important factors for CKD. In addition, the rapid aging of the population and an increasing prevalence of diabetes will translate into increasing burden of ESRD. It is to be hoped that political and economic stability in the region can ease to increase access to ESRD treatment in all Latin American and Caribbean countries, as is provided in the United States of America, Canada, Argentina, Chile, Uruguay, Brazil, Venezuela and some Caribbean Nations. (2,3,4).

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**Definition**

Treated ESRD is defined as all patients either with a functioning kidney graft or receiving dialytic treatment (hemodialysis or peritoneal dialysis).

Addition of the number of countries and territories with a prevalence rate of treated end-stage renal disease at least 700 patients per million population.

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**Unit of measure**

Number of countries and territories that report a prevalence rate of treated end-stage renal disease of at least 700 patients per million population.

Actual number of patients on RRT, specifying if it is dialysis or transplantation is desirable and will require reliable registries from all member nations.

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**Method of measurement**

Self-report by countries

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**Method of estimation/calculation**

Numerator/Denominator \* 1 million population

- Numerator: total number of patients in ESRD who are receiving RRT (dialysis, hemodialysis, or transplantation) at the end of each year
  - Denominator: total number of patients in ESRD recorded at the end of each year.
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**Preferred data sources**

National and regional renal and dialysis and transplantation registries

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**Other possible data sources**

Country or regional surveys, while reliable registries are implemented.

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**NCD framework**

National systems response  
indicator for PAHO Strategic Plan 2013 – 2019 # 2.1.9

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**Disaggregation**

None

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**Expected frequency of data collection**

Annually

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**Limitations**

Based on the current NCD Plan of Action, we can expect that countries will be able to construct RRT registries where they are not available and strengthen the quality of registries where present and therefore be able to report annually, although this situation has not happened in the past, where registries have been voluntary or non-existent until now. Data will require member nations that do not have registries to implement such instruments to quantitate the number of patients on RRT and will depend on quality, completion and updating of these national registries of dialysis and transplantation

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**Data type**Proportion

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**References**

1. U.S. Renal Data System, USRDS 2013 Annual Data Report: Atlas of Chronic Kidney Disease and End-Stage Renal Disease in the United States, National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, 2013
  2. Lugon JR, Strogoff de Matos JP. Disparities in end-stage renal disease care in South America. Clin Nephrol. 2010 Nov;74.
  3. Correa-Rotter R, Cusumano AM, Present, prevention, and management of chronic kidney disease in Latin America. Blood Purif. 2008;26(1):90-4.
  4. Dirks JH, Robinson S, Burdmann E, Correa-Rotter R, Mezzano S, Rodriguez-Iturbe B. Prevention strategies for chronic kidney disease in Latin America: a strategy for the next decade--a report on the Villarica Conference. Ren Fail. 2006;28(8):611-5
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**Related links**

International Society of Nephrology.  
<http://www.theisn.org/itemid-666>

Sociedad Latinoamericana de Nefrología e Hipertensión  
<http://www.slanh2014.org/index.html>

Kidney Disease Improving Global Outcomes (KDIGO)  
<http://kdigo.org/home/>

The United States Renal Data System (USRDS)  
<http://www.usrds.org/>

**Name  
abbreviated**

**Hypertension Control**

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**Indicator name**

Percentage of controlled hypertension at population level (<140/90mmHg) among persons 18+ years of age

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**Rationale**

This indicator measures the level of control of hypertension (the main risk factor for suffering and dying from a cardiovascular event) at the population level, as a measure of the effectiveness and efficiency of health system performance

The hypertension control clinical quality measure is designed to measure the ability of the health system to identify and effectively treat people with hypertension. Blood pressure reduction has been shown to reduce the risk for developing complications from hypertension, including myocardial infarction and stroke; hence, hypertension control is defined as an intermediate or outcome measure, or one of the proxy measures for assessing cardiovascular health in a community.

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**Definition**

Percentage of controlled hypertension at population level (<140/90mmHg) among persons 18 years of age and older

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**Unit of measure**

Treated and controlled hypertension: systolic blood pressure less than 140 mm Hg and the diastolic blood pressure less than 90 mm Hg and self-reported use of medication for high blood pressure.

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**Method of  
measurement**

Self-reported and measured

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**Method of  
estimation/  
calculation**

Numerator/denominator\*100

- The numerator is the total number of persons with controlled

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hypertension (persons with measured systolic blood pressure of < 140 mmHg and diastolic blood pressure of < 90 mmHg).

- The denominator is the total number of persons with hypertension (defined as persons who have measured systolic blood pressure  $\geq$  140 mmHg or diastolic blood pressure  $\geq$  90 mmHg, or who report having been diagnosed with hypertension by a health professional, or who report currently taking medication for the treatment of high blood pressure).

Calculation:  $(A/B) \times 100$  (age weighted prevalence expressed in percentage)

Regional calculation:

Depending on the quality of data and the harmonization of methods of country estimates, PAHO can estimate a regional rate of control. Otherwise, PAHO will provide a control range for those countries that report by the established deadline.

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**Preferred data sources**

Population-based (preferably nationally representative) survey

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**Other possible data sources**

WHO STEPwise approach to Surveillance (STEPS)  
Pan American STEPS.

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**NCD framework**

National system response. Outcome indicator for PAHO Strategic Plan 2014-2019, SP # 2.1.4

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**Disaggregation**

Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available; categories: e.g., male/female, rural/urban, by 10-year age groups.

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**Expected frequency of data collection**

Every four-to-five years, coinciding with the risk factors survey. It is expected that countries will be able to report data on this indicator six months after the end of the survey

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**Limitations**

- The indicator may not include persons with hypertension who have their blood pressure successfully controlled through lifestyle changes and without medication.
  - Data might be subject to measurement errors.
  - Based on the current NCD Plan of Action, countries are expected to conduct surveys every four-to-five years, although this has not been the case in the past
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**Data type**

Prevalence (expressed as a percentage including 95% confidence interval for the estimate)

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**References**

A global brief on hypertension: silent killer, global public health crisis. WHO April 2013.

[http://www.who.int/cardiovascular\\_diseases/publications/global\\_brief\\_hypertension/en/](http://www.who.int/cardiovascular_diseases/publications/global_brief_hypertension/en/)

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**Related links**

- STEPwise approach to surveillance (STEPS)  
<http://www.who.int/chp/steps/en/>
- Pan Am STEPS Mapped Instrument & Dataset Structure  
[http://www.paho.org/hq/index.php?option=com\\_docman&task=docview&gid=16109&Itemid](http://www.paho.org/hq/index.php?option=com_docman&task=docview&gid=16109&Itemid)

<b>Name abbreviated</b>	<b>HbA1C-based Diagnostic for Diabetes Control</b>
<b>Indicator name</b>	Percentage of patients who have received two A1C-based diagnostic tests for diabetes control in the past year
<b>Rationale</b>	<p>A1C is the single best test to monitor overall blood glucose control in diabetes. The HbA1C test measures what percentage of hemoglobin — a protein in red blood cells that carries oxygen — is coated with sugar (glycated). (The value is alternatively expressed as mmol glycated hemoglobin per mole total hemoglobin). The higher the A1C level, the poorer the blood sugar control and the higher the risk of diabetes complications that a patient has. Moreover, use of point-of-care testing for A1C provides an opportunity for more timely treatment changes.</p> <p>For optimal diabetic control, the recommended target for most people with diabetes is an A1C level no greater than 7%. It is hoped that achieving this target would help prevent serious diabetes-related complications, including nephropathy, neuropathy, retinopathy, and gum disease. In general, A1C values exceeding 9% indicate poor glycemic control.</p>
<b>Definition</b>	A patient who reports having received an A1C-based diagnostic test for diabetes control.
<b>Unit of measure</b>	An A1C score of 5.7% to 6.4% indicates pre-diabetes, and an A1C level of 6.5% or higher indicates the presence of diabetes. For optimal diabetic control, the recommended target for most people with diabetes is an A1C level no greater than 7%, according to the American Diabetes Association.
<b>Method of measurement</b>	<p>Self-reported.</p> <p><i>Have you received at least two HbA1C (glycated hemoglobin) tests in the past year as part of diabetes control?</i></p> <ul style="list-style-type: none"> <li>• Yes</li> </ul>

- *No*
- *Don't know*

---

**Method of estimation /calculation**

Numerator/denominator\*100

- Numerator: Number of respondents with stable glycemic control who received at least two HbA1C tests in the past year
- Denominator: Number of respondents with stable glycemic control and medical visits in the past year.

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**Preferred data sources**

National or subnational risk factors survey

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**Other possible data sources**

Pan American Version of STEPS Instrument 3.1

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**NCD framework**

National system response. Expanded indicator.

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**Disaggregation**

Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 5-year age groups.

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**Expected frequency of data collection**

Every 3 months for testing among patients; population-based surveys to assess coverage every 5 years.

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**Limitations**

Access to HbA1c testing is limited, in part because of cost.

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**Data type** Prevalence (expressed as percentage with 95% confidence interval)

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**References** 1. Diabetes care, Volume 36, Supplement 1, January 2013.

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**Related  
links**

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**Name abbreviated**      **Glycemic Control**

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**Indicator name**      Percentage of adults who have ever had their blood glucose checked by a doctor or health worker

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**Rationale**      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 who undergo blood glucose checkup.

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**Definition**      Population who report having their blood glucose ever checked by a doctor or health worker, expressed as percentage of all population surveyed.

---

**Unit of measure**      An individual who reports having had his or her blood glucose ever checked by a doctor or other health worker

---

**Method of measurement**      Self-report  
*Have you ever had your blood sugar measured by a doctor or other health worker?*

- *Yes*
- *No*

---

Numerator/denominator\*100

**Method of estimation/calculation**

- Numerator: Number of respondents who report ever having his or her blood glucose checked
- Denominator: Total number of respondents

---

**Preferred data**      STEPwise approach to surveillance (STEPS)

<b>sources</b>	Pan Am STEPS
<b>Other possible data sources</b>	National or subnational studies, reports done by NGOs or other partners
<b>NCD framework</b>	National system response. Expanded indicator.
<b>Disaggregation</b>	Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.
<b>Expected frequency of data collection</b>	Every 5 years
<b>Limitations</b>	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
<b>Data type</b>	Prevalence (expressed as percentage with 95% confidence interval)
<b>References</b>	
<b>Related links</b>	

<b>Name abbreviated</b>	<b>Diabetic Eye Examination</b>
<b>Indicator name</b>	Percentage of diabetics who had an eye examination within the past two years prior to the survey
<b>Rationale</b>	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 (1). This indicator is useful for developing strategies and prevention programs to increase quality of care among adults with diabetes.
<b>Definition</b>	Population of diabetics who report having received at least one clinical eye examination within the past two years prior to the survey, expressed as percentage of diabetics in the population surveyed.
<b>Unit of measure</b>	An individual with diabetes who reports having a clinical eye examination within the past two years prior to the survey
<b>Method of measurement</b>	<p>Self-report</p> <p><i>When was the last time your eyes were examined as part of your diabetes control?</i></p> <ul style="list-style-type: none"> <li>• <i>Within the past 2 years</i></li> <li>• <i>More than 2 years ago</i></li> <li>• <i>Never</i></li> <li>• <i>Don't know</i></li> </ul>
<b>Method of calculation/estimation</b>	<p>Numerator/denominator*100</p> <ul style="list-style-type: none"> <li>• Numerator: Number of diabetics who report having an eye exam within the past two years prior to the survey</li> <li>• Denominator: Total number of diabetic respondents</li> </ul>
<b>Preferred data sources</b>	Obtained from national or subnational risk factor surveys

<b>Other possible data sources</b>	STEPwise approach to surveillance (STEPS) Pan Am STEPS
<b>NCD framework</b>	National system response. Expanded indicator.
<b>Disaggregation</b>	Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 5-year age groups.
<b>Expected frequency of data collection</b>	. Every 5 years
<b>Data type</b>	Rate (expressed with 95% confidence interval)
<b>References</b>	. 1. Resnikoff S. et al. Global data on visual impairment in the year 2002. Bulletin of the World Health Organization, 2004, 52:844-851.
<b>Related links</b>	<ul style="list-style-type: none"> <li>• STEPwise approach to surveillance (STEPS) <a href="http://www.who.int/chp/steps/en/">http://www.who.int/chp/steps/en/</a></li> <li>• Pan Am STEPS Mapped Instrument &amp; Dataset Structure <a href="http://www.paho.org/hq/index.php?option=com_docman&amp;task=doc_view&amp;gid=16109&amp;Itemid=">http://www.paho.org/hq/index.php?option=com_docman&amp;task=doc_view&amp;gid=16109&amp;Itemid=</a></li> </ul>

<b>Name abbreviated</b>	<b>Diabetic Foot Examination</b>
<b>Indicator name</b>	Percentage of diabetics who had a foot exam in the last year
<b>Rationale</b>	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
<b>Definition</b>	Population of diabetics who reports having received a foot exam in the last year prior to the survey, expressed as percentage of population surveyed who are diabetics.
<b>Unit of measure</b>	A person with diabetes who had a foot exam in the last year, prior to the survey
<b>Method of measurement</b>	<p>Self-report</p> <p><i>When was the last time your feet were examined as part of your diabetes control?</i></p> <ul style="list-style-type: none"> <li>• <i>Within the past year</i></li> <li>• <i>More than 1 year ago</i></li> <li>• <i>Never</i></li> <li>• <i>Don't know</i></li> </ul>
<b>Method of estimation /calculation</b>	<p>Numerator/denominator*100</p> <ul style="list-style-type: none"> <li>• Numerator: Number of diabetics who report having a foot exam in the last year, prior to the survey</li> <li>• Denominator: Total number of diabetic respondents</li> </ul>

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**Preferred data sources** National risk factors surveys such as STEPwise approach to surveillance (STEPS)/Pan Am STEPS

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**Other possible data sources** Subnational risk factors surveys

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**Other possible data sources**

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**NCD framework** National system response. Expanded indicator.

---

**Disaggregation** Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.

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**Expected frequency of data collection** Every 5 years

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**Limitations** 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 and inappropriate data weighting.

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**Data type** Rate (expressed with 95% confidence interval)

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**References**

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**Related links**

- STEPwise approach to surveillance (STEPS)  
<http://www.who.int/chp/steps/en/>
- Pan Am STEPS Mapped Instrument & Dataset Structure  
[http://www.paho.org/hq/index.php?option=com\\_docman&task=doc\\_view&gid=16109&Itemid](http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&gid=16109&Itemid)

<b>Name abbreviated</b>	<b>Hospital Discharges with Diagnosis of Diabetes</b>
<b>Indicator name</b>	Percentage of hospital discharges with diagnosis of diabetes (ICD10 E10-14)
<b>Rationale</b>	Hospitalization is common in patients with diagnosed diabetes (1). 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.
<b>Definition</b>	Hospitalized cases with a principal or contributing diagnosis of diabetes, expressed as a percentage of all hospitalizations in a given year
<b>Unit of measure</b>	A case discharged from the hospital with a diagnosis of diabetes in a given year
<b>Method of measurement</b>	Retrospective review of hospital registries
<b>Calculation method</b>	<p>Numerator/denominator*100</p> <ul style="list-style-type: none"> <li>• Numerator: Number of cases from the hospital with diagnosis diabetes in a given year</li> <li>• Denominator: Total number of hospitalization in a given year</li> </ul>
<b>Preferred data sources</b>	Hospital registries
<b>Other possible data source</b>	Medical abstract, Patient Administration System, Electronic Health Records

**NCD framework** National system response. Expanded indicator.

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**Disaggregation**

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**Expected frequency of data collection** Every 5 years.

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**Limitations** .

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**Data type**

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**References**

1. Fu H, Curtis BH, Xie W, Festa A, Schuster DP, Kendall DM. Frequency and causes of hospitalization in older compared to younger adults with type 2 diabetes in the United States: A retrospective, claims-based analysis J Diabetes Complications. 2014 Feb 26.

.

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**Related links**

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<b>Name abbreviated</b>	<b>Average Length of Stay in a Hospital Because of Diabetes</b>
<b>Indicator name</b>	Average length of stay in a hospital because of diabetes (ICD10 E10-E14)
<b>Rationale</b>	Hospital bed utilization can be obtained 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.
<b>Definition</b>	Mean of hospital day bed occupancy in a given year with cases of diabetes
<b>Unit of measure</b>	Hospital stay because of diabetes
<b>Method of measurement</b>	Retrospective review of hospital registries/disease-specific registries.
<b>Calculation method</b>	<p>Numerator/denominator*100</p> <ul style="list-style-type: none"> <li>• Numerator: sum of all the bed days used by cases of diabetes in a given year</li> <li>• Denominator: number of cases of diabetes discharged in a given year</li> </ul>
<b>Preferred data sources</b>	Hospital registries

<b>Other possible data sources</b>	Medical abstract, Patient Administration System, Electronic Health Records
<b>NCD framework</b>	National system response. Expanded indicator.
<b>Disaggregation</b>	None
<b>Expected frequency of data collection</b>	
<b>Limitations</b>	<ul style="list-style-type: none"> <li>• Incomplete hospitals records</li> <li>• Because there are two different ways to calculate average length of stay, it is important to note that there may be significantly different results depending on the type of facility for which average length of stay is being calculated. Average length of stay here is calculated by dividing the sum of inpatient days by the number of patients discharged.</li> </ul>
<b>Data type</b>	Mean
<b>References</b>	
<b>Related links</b>	

**Name abbreviated** Amputations among Adults with Diabetes

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**Indicator name** Percentage of adults with diabetes who have an amputation in a given year [QUERY: I propose this wording as a more-accurate expression of the idea (“Definition” and “Calculation method” below) of this indicator. What do you think? The original wording seems to compute this percentage: (# of diabetics with an amputation)/(# of all persons with amputations). Compare a vs. b: a) In country X last year, 5% of all amputations were among adult diabetics. b) In country X last year, 10% of all adult diabetics had an amputation.]

---

**Rationale** Diabetics are 8 to 24 times more likely than non-diabetics to have a lower-limb amputation. It has been suggested that a large share of those amputations could be avoided by an early diagnosis and a multidisciplinary approach (1). Routine and periodic foot examination can enable early detection of peripheral vascular complications. Diabetes is the leading cause of nontraumatic amputation, so it is important to keep track of the percentage of amputations among adults with diabetes in order to improve disease management and to decrease the number of amputations.

---

**Definition** Number of amputations among adults with diabetes, expressed as percentage of all diabetics in a given year

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**Unit of measure** An amputation due to diabetic complications

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**Method of measurement** Retrospective review of hospital registries/disease-specific registries

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Numerator/denominator\*100

**Calculation method**

- Numerator: Number of amputations with underlying cause of diabetes in a given year
- Denominator: Total number of population diagnosed with diabetes in a given year

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**Preferred data sources** Obtained from hospital registries/records such as patient administration systems or electronic health records.

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**Other possible data sources**

Disease-specific registries

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**NCD framework**

National system response. Expanded indicator.

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**Disaggregation**

Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.

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***Expected frequency of data collection***

Every 5 years

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**Limitations of indicators and data sources**

Incomplete hospitals records

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**Data type**

Rate

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**References**

1. Ricco JB, Thanh Phong L, Schneider F, Illuminati G, Belmonte R, Valagier A, et al. The diabetic foot: a review. J Cardiovasc Surg (Torino). 2013 Dec;54(6):755-62.
- 

**Related links**

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<b>Name abbreviated</b>	<b>Dialysis among Diabetic Patients</b>
<b>Indicator Name</b>	Percentage of patients on dialysis (hemodialysis or peritoneal dialysis) among adults with diabetes in a given year.
<b>Rationale</b>	Persons with improper management of their diabetes are at increased risk for progression to CKD. Diabetes is the leading cause of RRT in many countries in the region, and constitutes a severe economic burden for the countries' economy. It is important to keep track of the percentage of dialysis patients who are diabetic, which may motivate improvement of disease management and a decrease in the number of diabetics with ESRD and CKD (1).
<b>Definition</b>	Number of diabetics on dialysis, expressed as percentage of all diabetics in a given year.
<b>Unit of measurement</b>	RRT (dialysis and kidney transplantation) due to diabetic complications
<b>Method of measurement</b>	<ul style="list-style-type: none"> <li>• National Dialysis and Transplant Registry</li> <li>• Retrospective <a href="#">revision-review</a> of hospital registries/disease-specific registries.</li> </ul>
<b>Method of estimation/calculation</b>	<p>Numerator/denominator*100</p> <ul style="list-style-type: none"> <li>• Numerator: Number of diabetics on dialysis in a given year</li> <li>• Denominator: Total number of population diagnosed with diabetes in a given year</li> </ul>
<b>Preferred data sources</b>	Medical abstract, Patient Administration System, Electronic Health Records
<b>Other possible data sources</b>	Hospital registries or disease-specific registries
<b>NCD framework</b>	National system response. Expanded indicator.

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**Disaggregation** Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.

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**Expected frequency of data collection** Every 5 years

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**Limitations** .

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**Data type** Rate

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**References**

1. Ligon JR, Strogoff de Matos JP. Disparities in end-stage renal disease care in South America. Clin Nephrol. 2010 Nov;74 Suppl 1:S66-71.

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**Related links** .

<b>Name abbreviated</b>	<b>Hospital Discharges with Diagnosis of COPD</b> [QUERY: OK form for this name, so it follows same format as: a) other “Hospital Discharges with Diagnosis of XXX” items and b) use of commonly known abbreviations in other Indicator names (e.g., PYLL, NCD/NCDs, HPV?)]
<b>Indicator name</b>	Percentage of hospital discharges with diagnosis of chronic obstructive pulmonary disease (COPD) (ICD10 J40-J47) in a given year
<b>Rationale</b>	<p>The COPD burden in Latin American countries has been high, especially for men and older persons, but few of these individuals have had severe disease. COPD patients have often received inappropriate treatment and have had high exacerbation and hospitalization rates, leading to high economic costs (1).</p> <p>If preventive programs are developed to modify risk factors, it should be possible to see a decrease in the number of COPD hospitalizations (2).</p>
<b>Definition</b>	Hospital cases with a principal diagnosis of COPD, expressed as percentage of overall hospitalizations in the given year
<b>Unit of measurement</b>	Hospital case discharged with a principal diagnosis of COPD during a given year.
<b>Method of measurement</b>	Retrospective review of hospital registries
<b>Method of estimation/calculation</b>	<p>Numerator/denominator*100</p> <ul style="list-style-type: none"> <li>• Numerator: Number of cases discharged from the hospital with a diagnosis of COPD during a given year</li> <li>• Denominator: Total number of cases hospitalized during a given year</li> </ul>
<b>Preferred data sources</b>	Medical abstract, patient administration system, electronic health records

<b>Other possible data sources</b>	Hospital registries
<b>NCD framework</b>	National system response. Expanded indicator.
<b>Disaggregation</b>	Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.
<b>Expected frequency of data collection</b>	Every 5 years
<b>Limitations</b>	.
<b>Data type</b>	Rate
<b>References</b>	<ol style="list-style-type: none"> <li>1. Agustín C, Alison L, Agustina M, Demián G, Silvana C, Edgardo S. The Epidemiology and Burden of COPD in Latin America and the Caribbean: Systematic Review and Meta-Analysis. COPD. 2014 Jun;11(3):339-50.</li> <li>2. World Health Organization (WHO). World health report 2002. 2002, op. cit.</li> </ol>
<b>Related links</b>	.

## Average Length of Stay in a Hospital Because of COPD

<b>Name abbreviated</b>	
<b>Indicator Name</b>	Average length of stay in a hospital because of COPD (ICD10 J40-J47)
<b>Rationale</b>	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.
<b>Definition</b>	Mean of hospital day bed occupancy in a given year with cases of COPD
<b>Unit of measurement</b>	Hospital stay because of COPD
<b>Method of measurement</b>	Retrospective <a href="#">revision review</a> of hospital registries
<b>Method of estimation/calculation</b>	<p>Numerator/denominator*100</p> <ul style="list-style-type: none"><li>• Numerator: Sum of all the bed days used by cases of COPD in a given year</li><li>• Denominator: number of cases of COPD discharged in a given year</li></ul>
<b>Preferred data sources</b>	Medical abstract, Patient Administration System, Electronic Health Records
<b>Other possible data sources</b>	Hospital registries
<b>NCD framework</b>	National system response. Expanded indicator.
<b>Disaggregation</b>	Age, sex, education level, residence, and other relevant sociodemographic stratifiers where available. Categories: e.g., male/female, rural/urban, by 10-year age groups.

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**Expected frequency of data collection**

Every 5 years

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**Limitations**

- Incomplete hospitals records
  - Because there are two different ways to calculate average length of stay, it is important to note that there may be significantly different results depending on the type of facility for which average length of stay is being calculated. Average length of stay here is calculated by dividing the sum of inpatient days by the number of patients discharged.
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**Data type**

Mean

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**References**

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**Related links**

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**Name  
abbreviated**

**Breast Cancer Screening**

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**Indicator name**

Proportion of women aged 50–69 years (and other age groups according to national programs or policies) in a three-year period with all positive cases found during screening provided effective and timely treatment.

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**Rationale**

Breast cancer is the most common cancer among women, and high population coverage of breast cancer screening followed by a timely and accurate diagnosis, with effective and timely treatment can significantly improve survival. Continued progress in the control of breast cancer will require sustained and increased efforts to provide high-quality screening, diagnosis, and treatment to all segments of the population (1).

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**Definition**

Female population of ages 50-69 who reports having a mammogram over a three year period, and reports to be treated if found positive

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**Unit of measure**

Proportion of women aged 50–69 years (and other age groups according to national programs or policies) over a three-year period that report to have positive result found during screening and provided effective and timely treatment.

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**Method of  
measurement**

- Retrospective analysis of the health records or cancer registries
- Self-report from risk-factor surveys:

*When was the last time you had a mammogram?*

- *1 year or less*
  - *Between 1 and 3 years*
  - *More than 3 years*
  - *Never*
  - *Don't know*
- 

**Method of**

<b>estimation/ calculation</b>	<p>Numerator/Denominator*100</p> <ul style="list-style-type: none"> <li>• Numerator: All women (ages 50-69) who reports having a mammogram over a three year period, and reports to be treated if found positive</li> <li>• Denominator: All women patients aged 50 to 69 years of age in past three year period</li> </ul>
<b>Preferred data sources</b>	<ul style="list-style-type: none"> <li>• National Health Information System</li> <li>• National or subnational risk factors survey</li> <li>•</li> </ul>
<b>Other possible data sources</b>	<p>Pan Am STEPS Cancer registries</p>
<b>NCD framework</b>	<p>National systems response. Outcome indicator for Regional NCD Action Plan 2013 – 2019 # 3.3.7</p>
<b>Disaggregation</b>	<p>Age, residence, education level, ethnicity and other relevant sociodemographic stratifiers where available. Categories: e.g., rural/urban, by 10-year age groups.</p>
<b>Expected frequency of data collection</b>	<p>Every 5 years</p>
<b>Limitations</b>	<p>Potential limitations include:</p> <ul style="list-style-type: none"> <li>• bias through self-report</li> <li>• misunderstanding/-interpretation of questions</li> <li>• limited validity of survey instruments</li> </ul>
<b>Data type</b>	<p>Prevalence (from the survey data expressed as 95% percentage with confidence interval for the estimate)</p>

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**References**

1. DeSantis C, Ma J, Bryan L, Jemal A. Breast cancer statistics, 2013. CA Cancer J Clin. 2014 Jan-Feb; 64(1):52-62.
- 

**Related links**

- STEPwise approach to surveillance (STEPS)<http://www.who.int/chp/steps/en/>
- Pan Am STEPS Mapped Instrument & Dataset Structure [http://www.paho.org/hq/index.php?option=com\\_docman&task=doc\\_view&gid=16109&Itemid](http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&gid=16109&Itemid)



<b>Name abbreviated</b>	<b>Cervical Cancer Screening</b>
<b>Indicator name</b>	Proportion of women between the ages of 30–49 screened for cervical cancer at least once, or more often, and for lower or higher age groups according to national programs or policies
<b>Rationale</b>	<p>There were an estimated 530,000 global cases of cervical cancer and 270,000 global deaths from the disease in 2008, with over 80 per cent of these in low- and middle-income countries. Cervical cancer is the most common female cancer in low- and middle-income countries (1). The widespread use of screening in high-income countries has resulted in a dramatic decline in cervical cancer mortality over the last three decades.</p> <p>Latin America and the Caribbean have one of the highest incidence and mortality rates from cervical cancer in the world. In this region, age-adjusted incidence rates range from 20 to 80 per 100,000 women per year. Overall, the mortality rates are extremely high in spite of the availability of Pap screening in several countries. Women from lower socioeconomic status, often less educated, are unaware of cervical cancer screening or have no access to it. Despite the efforts to reorganize screening programs in the region, in a few countries, only a slight decrease in cervical cancer mortality has been observed (2).</p>
<b>Definition</b>	Proportion of women aged 30 - 49 who report they were screened for cervical cancer using any of the following methods: Visual Inspection with Acetic Acid/vinegar (VIA), pap smear and Human Papillomavirus (HPV) test
<b>Unit of measure</b>	Proportion of women aged 30–49
<b>Method of measurement</b>	Self-report <i>The next question asks about cervical cancer prevention. Screening tests for cervical cancer prevention can be done in different ways, including Visual Inspection with Acetic Acid/vinegar (VIA), pap smear and Human Papillomavirus (HPV) test. VIA is an inspection of the surface of the uterine cervix after acetic acid (or vinegar) has been applied to it. For both pap smear and HPV test, a doctor or nurse uses a swab to wipe from inside your</i>

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*vagina, take a sample and send it to a laboratory. It is even possible that you are given the swab yourself and asked to swab the inside of your vagina. The laboratory checks for abnormal cell changes if a pap smear is done and for the HPV virus if an HPV test is done.*

*Have you ever had a screening test for cervical cancer, using any of these methods described above?*

- *Yes*
- *No*
- *Don't know*

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**Method of estimation/calculation**

Respondents who report they ever had a screening test for cervical cancer, using any of these methods: Visual Inspection with Acetic Acid/vinegar (VIA), pap smear and Human Papillomavirus (HPV) test.

Numerator/denominator\*100

- Numerator: total number of women, in the age group specified in the national screening policy (which may vary among countries), who receive a screening test, within the time period specified by the national policy
- Denominator: total number of women in that age group responding in the survey

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**Preferred data sources**

- National Health Information System
- Population-based (preferably nationally representative) survey

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**Other possible data sources**

STEPwise approach to surveillance (STEPS)  
Pan Am STEPS

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**NCD framework**

National systems response. Outcome indicator for:

- Additional indicator under the WHO's global monitoring framework
- Regional NCD Action Plan 2013 – 2019 # 3.3.6
- SP # 2.1.8

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**Disaggregation**

Age, residence, education level, ethnicity and other relevant

sociodemographic stratifiers where available. Categories: e.g., rural/urban, by 5-year age groups.

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**Expected frequency of data collection**

Every 5 years

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**Limitations**

Potential limitations include:

- bias through self-report, including mistakenly assuming any pelvic exam was a test for cervical cancer
  - limited validity of survey instruments
  - There is no systematic reporting system established, and the frequency varies widely in the Region, with some countries measuring this indicator annually, but others not measuring it at all. Each country independently monitors its own cervical cancer screening coverage, either through the national program's monitoring and evaluation system, or through population-based surveys
  - The quality and completeness of screening coverage measurement is challenging, in that it requires an information system and a systematic and well-defined method to capture information on women screened (vs. tests performed). Perhaps the greatest limitation is that most countries do not routinely, nor systematically, track their screening coverage. Potential limitations for self-reported data include:
    - bias through self-reporting, including mistakenly assuming any pelvic exam was a test for cervical cancer; and
    - limited validity of survey instruments
- 

**Data type**

Prevalence (expressed as percentage with 95% confidence interval for the estimate)

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**References**

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-

## Related links

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<b>Name abbreviated</b>	<b>Vaccination for HPV</b>
<b>Indicator name</b>	Availability, as appropriate, if cost-effective and affordable, of vaccines against human papillomavirus, according to national programs and policies
<b>Rationale</b>	<p>Almost half a million women develop cervical cancer per year (1, 2). Cervical cancer is caused by high-risk oncogenic human papillomavirus (HPV) and is the most common cancer affecting women in developing countries (1, 3). Two HPV vaccines have been approved for use in many countries. Clinical trial results show that both vaccines are safe and effective in preventing infections with the two types of HPV (16 and 18) that cause most cervical cancer and precancerous cervical lesions (4).</p> <p>HPV prophylactic vaccines were approved in most Latin American countries, but only few are considering its implementation in national immunization programs. Besides cost and other logistical issues, lack of recommendation by policy makers or lawmakers is deterring the introduction of HPV vaccines in the region. Furthermore, studies conducted in the region have indicated that HPV vaccination only or vaccination supplemented with screening may be considered a cost-effective strategy to reduce mortality by cervical cancer (5).</p>
<b>Definition</b>	Availability of HPV vaccines as part of a national immunization schedule
<b>Unit of measure</b>	Number of countries who report they have included HPV vaccine as part of their national immunization schedule
<b>Method of measurement</b>	Self-report by countries through a standard questionnaire (the Joint Reporting Form) sent to all Member States annually
<b>Method of</b>	

<b>estimation/ calculation</b>	WHO and UNICEF report on how many countries have added HPV vaccine to their national immunization program based on their responses to the Joint Reporting Form
<b>Preferred data sources</b>	WHO-UNICEF Joint Reporting Form (JRF)
<b>Other possible data sources</b>	
<b>NCD framework</b>	National system response. Outcome indicator for: <ul style="list-style-type: none"> <li>• WHO's global monitoring framework # 24</li> <li>• Regional NCD Action Plan 2013 – 2019 # 3.3.8</li> </ul>
<b>Disaggregation</b>	By the World Bank's main criterion for classifying economies is gross national income (GNI) per capita: low-income, middle-income (subdivided into lower-middle and upper-middle), or high-income.
<b>Expected frequency of data collection</b>	Annual
<b>Limitations</b>	Potential limitations include: <ul style="list-style-type: none"> <li>• bias through self-report</li> <li>• misunderstanding/-interpretation of questions</li> </ul>
<b>Data type</b>	Prevalence
<b>References</b>	<ol style="list-style-type: none"> <li>1. Ferlay J et al. GLOBOCAN 2008 v1.2, Cancer Incidence and Mortality Worldwide. IARC <i>CancerBase No. 10</i>. (<a href="http://globocan.iarc.fr">http://globocan.iarc.fr</a>, accessed on 18 July, 2012).</li> <li>2. de Martel C et al. Global burden of cancers attributable to infections in 2008: a review and synthetic analysis. <i>Lancet Oncology</i>, 2012, Jun; 13(6):607-15.</li> <li>3. Lehtinen M et al. Overall efficacy of HPV-16/18 AS04-adjuvanted vaccine against grade 3 or greater cervical intraepithelial neoplasia: 4-</li> </ol>

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**Related links**

HPV Vaccine Introduction Clearing House

<http://www.who.int/immunization/hpv/en/index.html>

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**Name abbreviated**

**Vaccination for Hepatitis B**

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**Indicator name**

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

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**Rationale**

Globally there were an estimated 694 000 deaths from liver cancer in 2008 (477 000 in men, 217 000 in women) and because of its high fatality (overall ratio of mortality to incidence of 0.93), liver cancer is the third most common cause of death from cancer worldwide (1). HBV is a major cause of liver cancer accounting for 54 per cent of liver cancer cases worldwide (59% of liver cancers in developing countries) (2). In addition, HBV results in liver cirrhosis and in total it is estimated that 600,000 people die each year from chronic HBV infections, mainly from cirrhosis and liver cancer. People with chronic HBV infection have a 15 - 25 per cent risk of dying prematurely from HBV-related cirrhosis and liver cancer (3). A safe effective vaccine to prevent chronic infection with HBV is available and is recommended by WHO to be included in national infant immunization programs. The key strategy for achieving the goal is universal infant immunization with 3 doses of hepatitis B vaccine, with the first dose delivered within 24 hours of birth (4).

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**Definition**

Percentage of one-year-olds who have received three doses of hepatitis B vaccine in a given year.

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**Unit of measure**

Doses of hepatitis B vaccine (HepB3) administered to infants

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**Method of measurement**

Service/facility reporting system ("administrative data"): Reports of vaccinations performed by service providers (e.g., district health centers, vaccination teams, physicians) are used for estimates based on service/facility records. The estimate of immunization coverage is derived by dividing the total number of vaccinations given by the number of children in the target population, often based on census projections.

Household surveys; survey items correspond to children's history in

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coverage surveys. The principle types of surveys are the Expanded Program on Immunization (EPI) 30-cluster survey, the UNICEF Multiple Indicator Cluster Survey (MICS), and the Demographic and Health Survey (DHS). The indicator is estimated as the percentage of children ages 12–23 months who received three doses of hepatitis B vaccine either any time before the survey.

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**Method of estimation/calculation**

Distinction is made between situations where data reported by national authorities accurately reflect immunization system performance and those where the data are likely compromised and may present a misleading view of immunization coverage. While there are frequently general trends in immunization coverage levels, no attempt is made to fit data points using smoothing techniques or time series methods. The estimates are informed and constrained by the following heuristics:

Country-specific: Each country's data are reviewed individually; data and information are not "borrowed" from other countries. If national data are available from a single source, the estimates are based solely on that source, supplemented with linear interpolation to impute values for years where data are not available. If no data are available for the most recent estimation period, the estimate remains the same as the previous year's. If new data or information subsequently becomes available, the relevant portion of the time series is updated.

Consistent trends and patterns: If survey data tend to confirm (e.g., within +/- 10% points) reported data, the estimates are based on reported data. If multiple survey points show a fairly consistent relationship with the trend in reported data and the survey data are significantly different from reported data, the estimates are based on reported data calibrated to the level established by the survey data. If survey data are inconsistent with reported data and the survey data appear more reliable, coverage estimates are based on survey data and interpolation between survey data points for intervening years. If multiple data points are available for a given country, vaccine/dose, and year data points are not averaged; rather potential biases in each of the sources are considered and an attempt to construct a consistent pattern over time, choosing data with the least potential for bias consistent with temporal trends and comparisons between vaccines is made. If coverage patterns are inconsistent between vaccines and dose number, an attempt to identify and adjust for possible biases is made. If inconsistent patterns are explained by programmatic (e.g., vaccine shortage) or contextual events (e.g., "international incidences") the estimates reflect the impact of these events.

When faced with situations where several estimates are possible, alternative explanations that appear to cover the observed data are constructed and treated as competing hypotheses, local information is considered, potential biases in the data identified and the more likely hypothesis identified.

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Recall bias adjustment: In instances where estimates are based primarily on survey data and the proportion of vaccinations based on maternal recall is high, survey coverage levels are adjusted to compensate for maternal recall for multidose antigens (e.g., DTP, POL, HepB, and Hib) by applying the dropout between the first and third doses observed in the documented data to the vaccination history reported by the child's caretaker. No coverage greater than 100%: Coverage levels in excess of 100% are occasionally reported. While such coverage levels are theoretically possible, they are more likely to be the results of systematic error in the ascertainment of the numerator or the denominator, a midyear change in target age groups, or inclusion of children outside the target age group in the numerator. The highest estimate of coverage is 99%.

Local knowledge incorporated: By consulting local experts an attempt to put the data in a context of local events - those occurring in the immunization system (e.g., vaccine shortage for parts of the year, donor withdrawal, change in management or policies, etc.) as well as more widely-occurring events (e.g., international incidences, civil unrest, etc.) is made. Information on such events is used to support (or challenge) sudden changes in coverage levels. Description and dissemination of results: For each country, year and vaccine/dose the WHO and UNICEF estimates are presented in both graphic and tabular forms along with the data upon which they are based. The estimates are "thickened", by providing a description of the assumptions and decisions made in developing the specific estimates.

Description and dissemination of results: For each country, year and vaccine/dose the WHO and UNICEF estimates are presented in both graphic and tabular forms along with the data upon which they are based. The estimates are "thickened", by providing a description of the assumptions and decisions made in developing the specific estimates

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**Preferred data sources**

Annual WUENIC reports (which are derived from the administrative coverage and the household survey data)

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**Other possible data sources**

Facility reporting system

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**NCD framework**

National system response indicator. Outcome indicator of WHO's global monitoring framework # 2

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**Disaggregation**      None

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**Expected frequency of data collection**      Annually

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**Limitations**      One of the perceived weaknesses of the estimates is related to the subjective nature of our methods. Subjectivity arises primarily in 1) the choice of rules, and 2) the decision to which rule should apply in a given circumstance. We have no theoretical foundation for our selection of rules and no validation of their reliability; the choices have been based on appeals to rationality, consistency and the lack of alternatives that produce more reasonable estimates. We are currently formalizing the rules to provide more explicit, consistent and replicable grounds for our estimates.

A serious limitation of the current estimates is the absence of any articulation of uncertainty; as presented, the estimates appear equally precise and certain. The uncertainty in the estimates is rooted in the accuracy and precision of the empirical data (described above) and in the choice and application of the heuristics (model-based uncertainty)

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**Data type**      Prevalence

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**References**      Immunization surveillance, assessment and monitoring  
[http://www.who.int/immunization\\_monitoring/data/data\\_subject/en/index.html](http://www.who.int/immunization_monitoring/data/data_subject/en/index.html)  
1

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**Related links**

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## National System Response: Indicators for Surveillance and Research

Target	Indicator	NCD Framework
	<b>Nationally Representative Population Surveys on NCD Risk Factors:</b> Number of countries with at least two repeated nationally representative population surveys of NCD risk factors, in adults and youth, that include behaviors: tobacco use, alcohol use, physical activity, salt and fat intake anthropometry, blood pressure, fasting glucose, and cholesterol.	<b>NCD PoA # 4.1.4</b>
	<b>National Health Reporting System on NCDs:</b> Number of countries that produce and disseminate regular reports with analysis on NCDs and risk factors, including demographic, socioeconomic, and environmental determinants and social distribution to contribute to global NCD monitoring process and have research agenda that includes operational research studies on NCDs and risk factors aiming to strengthen evidence-based policies, program development, and implementation.	<b>NCD PoA # 4.2.1</b>
	<b>High-Quality Mortality Data:</b> Number of countries with high-quality mortality data (based on international criteria for underregistration and ill-defined or unknown causes of death) for the four main NCDs and other NCDs of national priority	<b>NCD PoA # 4.1.2</b>
	<b>NCD Research Agenda:</b> Number of countries that have research agendas that include operational research studies on NCDs and risk factors aiming to strengthen evidence-based policies, program development, and implementation	<b>NCD PoA# 4.2.2</b>



**Name abbreviated** **Nationally Representative Population Surveys of NCD Risk Factors**

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**Indicator name** Number of countries with **at least two** repeated nationally representative population surveys of NCD risk factors, in adults and youth that include behaviors: tobacco use, alcohol use, physical activity, salt and fat intake anthropometry, blood pressure, fasting glucose, and cholesterol.

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**Rationale** The importance of surveillance and monitoring of progress made in the prevention and control of NCDs was emphasized Resolution 66/2 on the Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-Communicable Diseases. It calls upon the Member States to consider the development of national targets and monitoring mechanisms for NCD prevention and control and improve quality and access to information and data to support that.

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**Definition** National NCD and risk-factor surveys: A fixed or unfixed time interval survey on the main chronic diseases, or major risk factors common to chronic diseases, including the following data:

- *Tobacco use: prevalence of current tobacco use among persons aged 18+ years and prevalence of current tobacco use adolescents*
- *Alcohol use: prevalence of underage drinking among adolescents and prevalence of heavy episodic drinking among adults\**
- *Fruits and vegetable intake: age-standardized prevalence of persons aged 18+ years consuming less than five total servings (400 grams) of fruit and vegetables per day\**
- *Anthropometry*
- *Blood pressure among persons 18+*
- *Fasting glucose among persons aged 18+ years\**
- *Cholesterol: total cholesterol among persons aged 18+ years (defined as total cholesterol  $\geq 5.0$  mmol/l or 190mg/dl)*
- *Creatinine*
- *Sodium in urine*
- *Albumin in urine*

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**Unit of measure**      Number of countries with **at least two** repeated nationally representative population surveys of NCD risk factors

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**Method of measurement**      Self-report by countries

*Have surveys of risk factors (may be a single RF or multiple) been conducted in your country for any of the following:*

Yes    No    Don't Know

- *Alcohol use*
  - *Low fruit and vegetable consumption*
  - *Physical inactivity*
  - *Tobacco use*
  - *Raised blood glucose/diabetes*
  - *Raised total cholesterol*
  - *Raised blood pressure/Hypertension*
  - *Overweight and obesity*
  - *Salt/Sodium intake*
- 

**Method of estimation/calculation**      Number of countries that respond “yes” to the question: “*Does your country have implemented with **at least two repeated** nationally representative population surveys of NCD risk factors?*”

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**Preferred data sources**      National NCD programs and reports through WHO Country capacity study

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**Other possible data sources**      Population-based RF studies using national or international methodology of STEP-wise approach to surveillance, Global Tobacco Surveillance System, Global Information System on Alcohol and Health, Global School-based Student Health Survey

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**NCD framework** National systems response indicator for Regional NCD Action Plan 2013 – 2019 # 4.1.4

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**Disaggregation** None

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**Expected frequency of data collection** Every 2 years

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**Limitations**

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**Data type** Proportion

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**References**

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**Related links** .



<b>Name abbreviated</b>	<b>National Health Reporting System on NCDs</b>
<b>Indicator name</b>	Number of countries that produce and disseminate regular reports with analysis on NCDs and risk factors, including demographic, socioeconomic and environmental determinants and social distribution to contribute to global NCD monitoring process and have research agenda that includes operational research studies on NCDs and risk factors aiming to strengthen evidence-based policies, program development and implementation
<b>Rationale</b>	Paragraph 63 of the Political Declaration urges Member States to consider the development of national targets based on national situations, building on the guidance provided by WHO and regional office, to assess the progress they are making in prevention and control of NCDs and their risk factors and determinants. This can only be obtained if there is long-term investment in NCD surveillance, so regular reporting is maintained to contribute to the goal of good quality data and analysis on NCDs impact to health of the population.
<b>Definition</b>	<p>National health reporting system: The process where a ministry of health produces annual reports that summarize data on, e.g., national health human resources, population demographics, health expenditures, health indicators such as mortality and morbidity and RF. The reporting system also includes the process of collecting data from various health information sources.</p> <p>Regular reports on health situation that include information on main causes of death, e.g., specific mortality, addressing premature mortality and its consequences, morbidity, survival, RF and economic and social impact of NCDs to the society</p>
<b>Unit of measure</b>	Number of countries that produce and disseminate regular reports with analysis on NCDs and risk factors
<b>Method of measurement</b>	Self-report by countries.

<b>Method of estimation/calculation</b>	Number of countries that respond “yes” to the question: <i>“Does your country produce and disseminate regular reports with analysis on NCDs and risk factors, including demographic, socioeconomic and environmental determinants and social distribution to contribute to global NCD monitoring process and have research agenda that includes operational research studies on NCDs and risk factors aiming to strengthen evidence-based policies, program development and implementation?”</i>
<b>Preferred data sources</b>	National NCD programs
<b>Other possible data sources</b>	<ul style="list-style-type: none"> <li>• Civil registration</li> <li>• Disease registers or hospital admitting and discharges population-based RF studies</li> <li>• STEP-wise approach to surveillance, Global Tobacco Surveillance System, Global Information System on Alcohol and Health, Global School-based Student Health Survey</li> <li>• IARC GLOBOCAN 2008</li> <li>• National research agenda reports</li> </ul>
<b>NCD framework</b>	National systems response indicator for Regional NCD Action Plan 2013 – 2019 # 3.2.1
<b>Disaggregation</b>	None
<b>Expected frequency of data collection</b>	Every 2 years
<b>Limitations</b>	
<b>Data type</b>	

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**References**

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**Related links** .



**Name abbreviated** **High-Quality Mortality Data**

**Indicator name** Number of countries with high-quality mortality data (based on international criteria for underregistration and ill-defined or unknown causes of death) for the four main NCDs and other NCDs of national priority

**Rationale** The United Nations Resolution of Political Declaration of the High Level Meeting of General Assembly on Prevention and Control of NCDs recommends to strengthen as appropriate, information systems for health planning and management, including through the collection, disaggregation, analysis, interpretation, and dissemination of data and the development of population-based national registries and surveys, where appropriate, to facilitate appropriate and timely interventions for the entire population. This recommendation can be applied for the monitoring of the national indicator and global NCD targets.

**Definition** Mortality data: a measure of the number of deaths attributed to the four main NCDs in a population, scaled to the size of the population, per unit of time. NCD refers to the 4 major group of diseases (Cardiovascular disease: all deaths whose underlying cause was coded in ICD 10 – I00-I99; Malignant neoplasm (C00-C97); Chronic respiratory diseases (J30-J98); Diabetes mellitus (E10-E14) and other NCDs of national priority, e.g., CKD

Mortality underregistration is determined by subtracted by 1 the total cumulative deaths registered in country per period divided by corresponding total cumulative estimated deaths, obtained after applying the UN estimated crude deaths rates to the corresponding population estimates by the UN.

Ill defined or unknown conditions refer to deaths certificates issued in the given year for which the underlying cause of death was symptoms, signs, and ill-defined and unknown conditions (ICD-10 codes R00-R99)

The criteria for quality:

Quality of mortality data is measured by means of composite index composed of” proportion of underregistered deaths “and proportion of deaths due to ill-defined and unknown conditions”.

Index: 0.7 proportion of underregistered deaths (0.7%) + 0.3 Proportion of

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certified deaths due to ill-defined or unknown causes (%)

Good quality data: index < or =10.

Medium: quality 11-20%

Poor quality 21-40%

Very poor quality >41%

Source: PAHO/WHO Technical information system: Regional mortality Data base. Pan American Health Organization, Health Information and analysis, Health situation in Americas, Basic indicators 2008, Washington DC 2008.

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**Unit of measure**

Number of countries with high-quality mortality data

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**Method of measurement**

Self-report by countries

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**Method of estimation/  
calculation**

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**Preferred data sources**

National civil registration, e.g., vital statistics on specific cause of death of 4 NCDs and of national priority.

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**Other possible data sources**

Verbal autopsy

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**NCD framework**

National systems response indicator for Regional NCD Action Plan 2013 – 2019 # 4.1.2

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**Disaggregation**

None

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**Expected frequency of data collection**

Every 5 years

**Limitations**

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**Data type**

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**References**

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**Related links**

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<b>Name abbreviated</b>	<b>NCD Research Agenda</b>
<b>Indicator name</b>	Number of countries that have research agendas that include operational research studies on NCDs and risk factors aiming to strengthen evidence-based policies, program development and implementation
<b>Rationale</b>	
<b>Definition</b>	
<b>Unit of measure</b>	Number of countries that have research agendas that include operational research studies on NCDs and risk factors aiming to strengthen evidence-based policies, program development and implementation
<b>Method of measurement</b>	Self-report by countries
<b>Method of estimation/calculation</b>	Number of countries that respond “yes” to the question: <i>“Does your country have research agendas that include operational research studies on NCDs and risk factors aiming to strengthen evidence-based policies, program development and implementation?”</i>
<b>Preferred data sources</b>	National NCD programs
<b>Other possible data sources</b>	
<b>NCD framework</b>	National systems response indicator for Regional NCD Action Plan 2013 –

2019 # 4.1.4

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**Disaggregation**

None

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**Expected frequency of data collection**

Every 2 years

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**Limitations**

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**Data type**

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**References**

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**Related links**

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## **Socioeconomic and Context Indicators**

### **Total Population (Male/female ratio)**

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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.

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### **Urban Population**

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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 influencing the rising prevalence of risk factors for NCDs.

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### **Gross National Income**

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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), and less similar payments made to other countries. This information is very useful and is often used as the main criteria for classifying economies. The gross national income (GNI) provides a rough measure of the 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.

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### **Population below Poverty Line**

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It refers to the percentage of the population (in 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 USD 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.

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### **Income Ratio (highest 20%/lowest 20%)**

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The gross national product (GNP) per capita is only a crude measure of the 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 is commonly measured by comparing GNP/capita.

This can not only affect the access to health care and quality of services provided but it can also affect the access to services and affordability of selected essential medicines for chronic diseases. This information can be obtained from the World Bank data.

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### **Production of Fruits**

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Fruits are very important for a healthy diet. To increase and assure its availability and production are of high priority for governments. 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 like the provision of inputs, production incentives, capacity building, marketing infrastructure and trade. The data can be expressed as the percentage of global market share in the world or in metric tons (in thousands). Metric tons are preferred as the unit to measure quantity. The information to fill in this indicator can be obtained from the national statistics from various ministries or international sources, as FAO.

A healthy diet is important to prevent obesity and several chronic diseases such as diabetes and cardiovascular disease. 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.

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### **Import of Fruits**

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The fruit industries in many Latin American and Caribbean countries have continued to expand. Fruit and vegetables are very important to ensure the nutritional and overall well-being, and decrease the risk for chronic diseases. For governments, it is important to increase and assure fruit and vegetables' availability throughout 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. The data can be expressed as Quantity, Unit or Value. Metric tons are preferred as the unit to measure quantity. The information to fill in this indicator can be obtained from the national statistics from various ministries or international sources, as FAO.

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### **Export of Fruits**

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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 fruit and vegetable sector. Fruit export volumes have grown enormously and there is an effort to expand and diversify fruit and vegetables availability for consumption worldwide. In countries where production is limited (e.g., due to season changes), imports are especially important to assure the availability and variety among the population. The data can be expressed as Quantity, Unit or Value. Metric tons are preferred as the unit to measure quantity. The information to fill in this indicator can be obtained from the national statistics from various ministries or international sources, as FAO.

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### **Production of Vegetables**

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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, such as the provision of inputs, production incentives, capacity building, marketing infrastructure and trade. The data can be expressed in the percentage of global market share in the world or in metric tons (in thousands).

Metric tons are preferred as the unit to measure quantity. The information to fill in this indicator can be obtained from the national statistics from various ministries or international sources, as FAO.

A healthy diet is important to prevent obesity and several chronic diseases such as diabetes and cardiovascular disease. 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.

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### **Import of Vegetables**

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For governments it is important to assure the fruit and vegetable availability throughout 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. The data can be expressed as Quantity, Unit or Value. Metric tons are preferred as the unit to measure quantity. The information to fill in this indicator can be obtained from the national statistics from various ministries or international sources, as FAO.

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### **Export of Vegetables**

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Trade is a very important part of the economy. The vegetable industry in many Latin American and Caribbean countries has continued to expand vegetable export volumes. These have grown enormously and there is an effort to expand and diversify fruit and vegetables availability for consumption. In countries where production is limited (e.g., due to season changes) exports are especially important to assure availability and variety among the population. The data can be expressed as Quantity, Unit or Value. Metric tons are preferred as the unit to measure quantity. The information to fill in this indicator can be obtained from the national statistics from various ministries or international sources, as FAO.

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### **Production of Alcohol**

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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 makers 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. In order to be able to calculate the 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. The data can be expressed as Quantity, Unit or Value. Metric tons are preferred as the unit to measure quantity. The information to fill in this indicator can be obtained from the national statistics from various ministries or international sources, as FAO.

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### **Import and Export of Alcohol**

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Only approximately 10% of alcoholic beverage production enters the 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. The data can be expressed as Quantity, Unit or Value. Metric tons are preferred as the unit to measure quantity. The information to fill in this indicator can be obtained from the national statistics from various ministries or international sources, as FAO.

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### **Unrecorded Alcohol**

Unrecorded alcohol refers to alcohol that is not taxed and is outside the usual system of governmental control, because it is produced, distributed and sold outside formal channels. Unrecorded alcohol consumption in a country includes consumption of homemade or informally produced alcohol (legal or illegal), smuggled alcohol, alcohol intended for industrial or medical uses, alcohol obtained through cross-border shopping (which is recorded in a different jurisdiction), as well as consumption of alcohol by tourists. Homemade or informally produced alcoholic beverages are mostly fermented beverages made from sorghum, millet, maize, rice, wheat or fruit.

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### **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 morbidity 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 tons are preferred as the unit to measure quantity. The information to fill in this indicator can be obtained from the national statistics from various ministries or international sources, as FAO.

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### **Import and 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 (Rome, 2003). The data can be expressed as Quantity, Unit or Value. Metric tons are preferred as the unit to measure quantity. The information to fill in this indicator can be obtained from the national statistics from various ministries or international sources, as FAO.

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## Annex 1: External Peer Reviewers for Compendium

<b>Name</b>	<b>Organization</b>
Marianne Gee	The Chronic Disease Surveillance and Monitoring Division Public Health Agency of Canada
Ali Mokdad	Professor of Global Health The Institute for Health Metrics and Evaluation (IHME) The University of Washington
Bob Brewer	Epidemiologist - Lead, Alcohol Program, Division of Adult and Community Health, NCCDPHP
Carlos Castillo Salgado	Professor, John Hopkins Bloomberg School of Public Health
Daniel Ferrante	Director CVD and surveillance, Ministry of Health, Argentina
Deborah Carvalho Malta	Department of Non-Communicable Disease Surveillance and Health Promotion, Ministry of Health, Brazil
Glennis Andall-Brereton	Senior technical advisor on non-communicable diseases, Caribbean Public Health Agency (CARPHA)
Hsiao-ye Yi	Project Director, Alcohol Epidemiologic Data System, NIH/NIAAA, CSR, Incorporated
Ian Hambleton	Chief statistician, Chronic Disease Research Centre (CDRC) Barbados
Jeannine Ritchot	Senior Director, Surveillance and Analysis Division Public Health Agency of Canada
Meg O'Brien	Program Director, American Cancer Society
Mick Ballesteros	Senior Scientist, Center for Global Health, Center for Disease Control and Prevention CDC
Neiman Andrea	Division for Heart Disease and Stroke Prevention National Center for Chronic Disease Prevention and Health Promotion, Center For Disease Control and Prevention CDC

Paul Ricketts	Head epidemiologist Ministry of Health & Social Security, Commonwealth of Dominica
Pedro Zitko	Epidemiologist Ministry of Health, Chile
Ricardo Correa-Rotter	Head Department of Nephrology and Mineral Metabolism, National Institute for Medical Science and Nutrition Salvador Zubiran, Mexico Professor of Medicine and Nephrology of the National Autonomous University of Mexico
Sonia Agel	Chief of the Noncommunicable Disease Unit and Senior Advisor for Global Noncommunicable Diseases, Division of Global health Protection in the Center for Global Health, Centers for Disease Control and Prevention (CDC).
Tamu Davidson	Director, Chronic Diseases & Injuries Prevention Unit Ministry of Health, Jamaica
K. M. Venkat Narayan	Professor of Epidemiology and Medicine, Hubert Department of Global Health The Emory University Rollins School of Public Health