INTERACADEMYMEDICALPANEL

Prevention and Control of Cardiovascular Diseases COLOMBIA

MORTALITY BY NON COMMUNICABLE DISEASES 2008

- Non Communicable Diseases (NCDs) are the leading cause of death in the world, responsible for 63% of the 57 million deaths that occurred in 2008.
- The majority of these deaths - 36 million or 57% - in 2008 were attributed to cardiovascular diseases and diabetes, cancers and chronic respiratory diseases.

Source: WHO NCDs Country Profiles 2011, pp. 5-7

MORTALITY BY NON COMMUNICABLE DISEASES (2008)

- In most middle- and high-income countries NCDs are responsible for **more deaths than all other causes of death combined**, with almost all high-income countries reporting the proportion of NCDs deaths to total deaths to be **more than 70%.**

- Age-standardized death rates are highest in countries with **low incomes.**

Source: WHO NCDs Country Profiles 2011, pp. 5-7

MORTALITY BY NON COMMUNICABLE DISEASES (2008)

- In lower and middle income countries the proportion of premature NCDs deaths under 60 years rose to 28%, more than double the proportion in high-income countries.

- In low-income countries the proportion of premature NCDs deaths under 60 years was 41% or three times the proportion in high-income countries.

Source: WHO NCDs Country Profiles 2011, pp. 5-7

GLOBAL MORTALITY BY NON COMMUNICABLE DISEASES (2008)

RISK FACTOR	NUMBER OF DEATHS (Millions)	(%)
RAISED BLOOD PRESSURE	7.5	13.0
TOBACCO USE	6.0	9.0
RAISED BLOOD GLUCOSE	3.2	6.0
PHYSICAL INACTIVITY	3.2	6.0
OVERWEIGHT AND OBESITY	2.8	5.0

Source: WHO Global Status Report on Non Communicable diseases 2010, pp.1-3

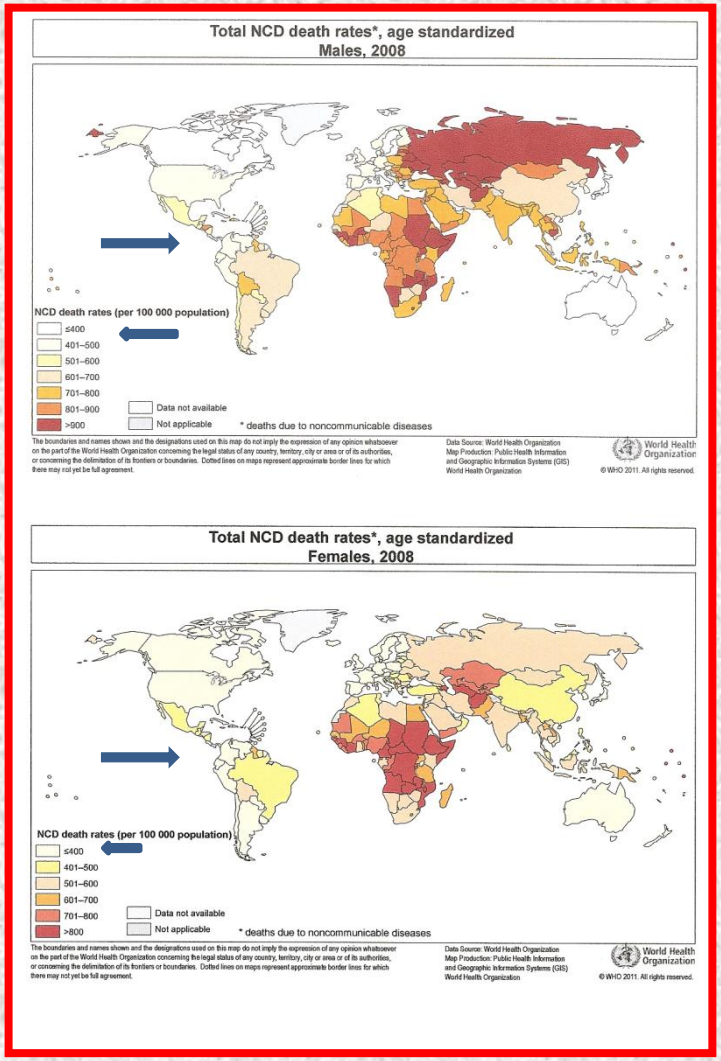
TRENDS IN RISK FACTORS (2008)

- The prevalence of insufficient physical activity is correlated to the level of income:

- High income countries had more than double the prevalence compared with low-income countries for both men and women, with 41% of men and 48% of women insufficiently physically active in high-income countries compared with 18% of men and 21% of women in low income countries

Source: WHO NCDs Country Profiles 2011, pp. 5-7

MORTALITY BY NON COMMUNICABLE DISEASES: AGE STANDARDIZED RATES PER 100 000 (2008)



Source: WHO Global Status Report on Non Communicable Diseases 2010 p. 95

LEADING CAUSES OF DEATH, COLOMBIA 1990

DISEASE	NUMBER OF CASES
Ischemic heart disease	15 853
Cerebrovascular diseases	9 459
Heart failure	6 052
Pneumonia	5 198
Hypertensive disease	4 794
Motor transport accidents	4 410
Malignant neoplasms of the stomach	3 605

Source: Departamento Administrativo Nacional de Estadísticas (DANE),Vital Statistics Group.

LEADING CAUSES OF DEATH, COLOMBIA 2003

DISEASE	NUMBER OF CASES
Ischemic heart disease	23 532
Cerebrovascular diseases	13 949
Heart failure	6 052
Pneumonia	5 198
Hypertensive disease	5 576
Malignant neoplasms of the stomach	3 605
Malignant neoplasms of the trachea, bronchus, and lung	3 324

Source: Departamento Administrativo Nacional de Estadísticas (DANE),Vital Statistics Group.

MORTALITY BY NON COMMUNICABLE DISEASES COLOMBIA, 2008

	MEN	WOMEN
TOTAL NCDs DEATHS (000)	66.3	68.2
NCD DEATHS UNDER AGE 60 (%)	30.7	26.8
AGE STANDARDIZED DEATH RATES PER 100 000: ALL NCDs	437.6	351.3
AGE STANDARDIZED DEATH RATES PER 100 000: ALL NCDs (in Low and Middle income countries)	756.0	565.0
AGE STANDARDIZED DEATH RATES PER 100 000: CANCERS	112.9	92.1
AGE STANDARDIZED DEATH RATES PER 100 000: CARDIOVASCULAR DISEASES AND DIABETES	205.9	166.7

Source: WHO NCDs Country Profiles 2011: COLOMBIA, p. 51

PREVALENCE OF BEHAVIOURAL AND METABOLIC RISK FACTORS
COLOMBIA, 2008

RISK FACTOR	MEN (%)	WOMEN (%)
PHYSICAL INACTIVITY	38.1	47.1
RAISED BLOOD PRESURE	40.4	33.8
RAISED BLOOD GLUCOSE	6.0	5.7
OVERWEIGHT	43.5	52.7
OBESITY	11.3	22.9
RAISED CHOLESTEROL	40.8	41.8

Source: WHO NCDs Country Profiles 2011: COLOMBIA, p. 51

TRENDS IN RISK FACTORS: GLOBAL PREVALENCE OF DIABETES 1980-2008

	AGE-STANDARIZED PREVALENCE RATE PER 100 000	
	MEN (%)	WOMEN (%)
1980	8.3	7.5
2008	9.8	9.2

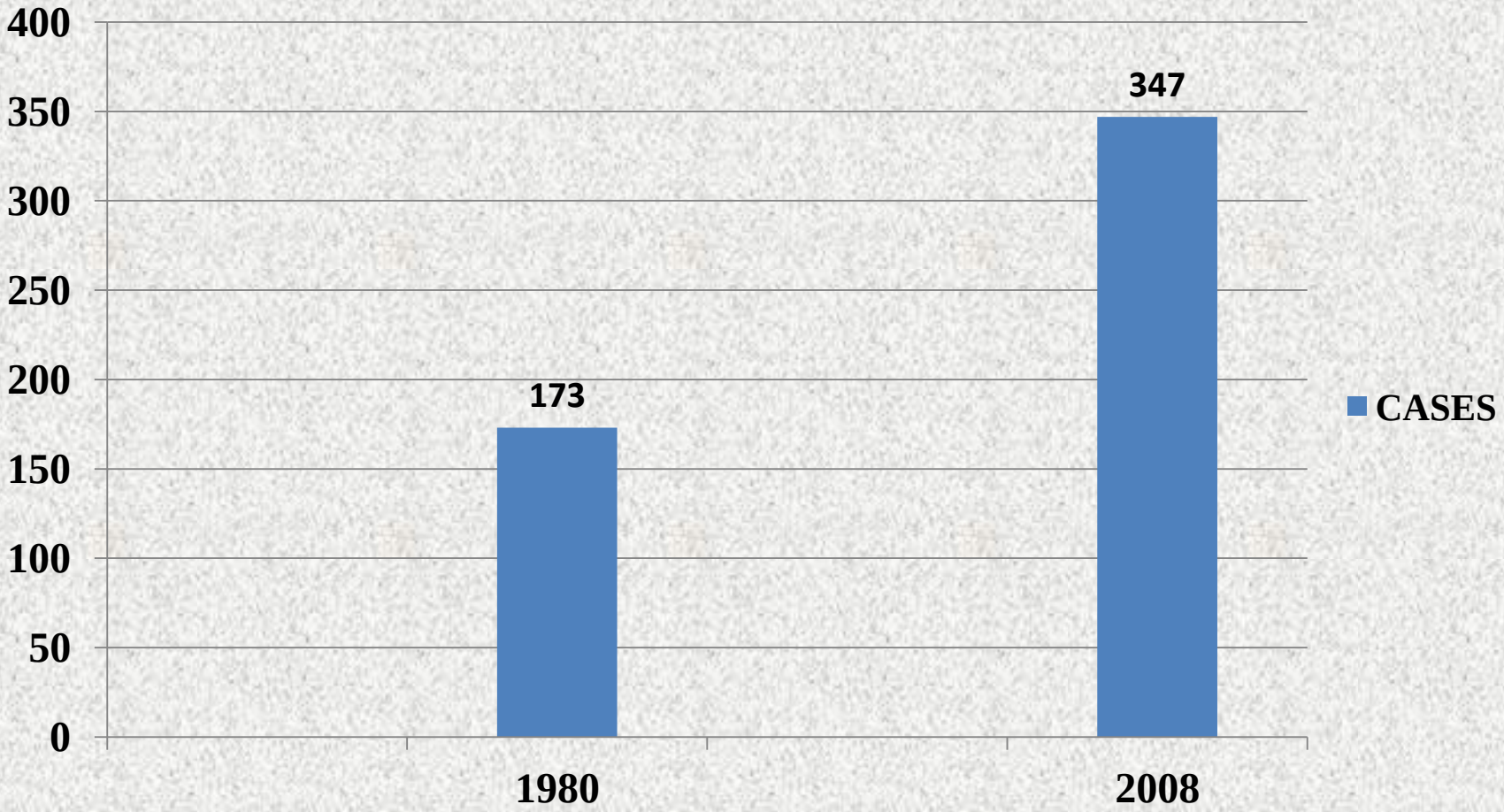
Source: WHO NCDs Country Profiles 2011, pp. 5-7

TRENDS IN RISK FACTORS: GLOBAL PREVALENCE OF DIABETES 1980-2008

	NUMBER OF CASES
1980	173 000 000
2008	347 000 000

Source: WHO NCDs Country Profiles 2011, pp. 5-7

TRENDS IN RISK FACTORS: GLOBAL PREVALENCE OF DIABETES (Millions of Cases) 1980-2008



CARDIOVASCULAR DISEASES (*)

Cardiovascular disease is caused by disorders of the heart and blood vessels, and includes coronary heart disease (heart attacks), cerebrovascular disease (stroke), raised blood pressure (hypertension), peripheral artery disease, rheumatic heart disease, congenital heart disease and heart failure. The major causes of cardiovascular disease are tobacco use, physical inactivity, an unhealthy diet and harmful use of alcohol.

(*) WHO Definition

MORTALITY BY CARDIOVASCULAR DISEASES
COLOMBIA 1999 - 2011
Rates x 100 000

	99	00	01	02	03	04	05	06	07	08	09	11
IHD > 45y	52.7							262.3		263.7		
CVD > 45y	121.1							136.6		130.0		

IHD: Ischaemic Heart Disease
CVD: Cerebrovascular Diseases

Source: Ministerio de Salud, Colombia, PAHO Colombia 2010

CARDIOVASCULAR DISEASES: PREVALENCE OF SMOKERS COLOMBIA 1993 - 2007 (%)

	93		98		07	REDUCTION (%)
MEN			26.8		19.5	- 33.0
WOMEN			11.3		7.4	- 35.0
BOTH	21.4		18.9		12.8	- 41.0

Source: PROFAMILIA, Ministerio de Salud, Colombia, Encuesta Nacional de Nutrición y Salud, 2010 p.152

CARDIOVASCULAR DISEASES
PREVALENCE OF SMOKERS (18-69 yr) BY LEVEL OF EDUCATION
COLOMBIA 2010

LEVEL OF EDUCATION	PREVALENCE (%)
None	15.7
Primary	14.3
Secondary	12.2
Technician	10.9
University	11.0
Postgraduate	9.7

Source: PROFAMILIA, Ministerio de Salud, Colombia, Encuesta Nacional de Nutrición y Salud, 2010 p.152

CARDIOVASCULAR DISEASES (*)

Cardiovascular disease is caused by disorders of the heart and blood vessels, and includes coronary heart disease (heart attacks), cerebrovascular disease (stroke), raised blood pressure (hypertension), peripheral artery disease, rheumatic heart disease, congenital heart disease and heart failure. The major causes of cardiovascular disease are tobacco use, physical inactivity, an unhealthy diet and harmful use of alcohol.

(*) WHO Definition

PHYSICAL ACTIVITY PROMOTION IN BOGOTA, 2005

- Less than 50% of colombian adults aged 18 – 64 years exercises the minimal recommended physical activity that generates a beneficial impact for their health.
- Less than one tenth of the above population exercises physical activity during their free time in a regular way.
- Less than one fifth of the above population has a regular routine of walking as a means of transportation.

Source: ICBF, Colombia, Encuesta de la situación nutricional 2005 p.362

DEVELOPMENT OF PUBLIC POLICIES FOR PROMOTION OF PHYSICAL ACTIVITY IN BOGOTA, 2008-2011

- **Policies at the local and national level with multisectoral collaboration are necessary for the sustainability of programs with impact on promotion of physical activity.**

- **For example, the community has been a great advocate for Ciclovía, by reclaiming the streets every week. This continued support makes it difficult for any policy-maker to risk making an unpopular decision concerning the program.**

Source: Díaz del Castillo A, Sarmiento OL, Reis RS, Brownson RS (2011) Translating evidence to policy: urban interventions and physical activity promotion in Bogotá, Colombia and Curitiba, Brazil, TBM, 2011 p. 350-360

DEVELOPMENT OF PUBLIC POLICIES FOR PHYSICAL ACTIVITY PROMOTION IN BOGOTA, 2005

- **The interaction of community and government is very significant for the sustainability of the programs. Both are necessary but neither is sufficient on its own.**
- **For example, the Ciclovía has now been replicated in at least 98 cities of the Americas yet only a few well-done research studies have been conducted on its effects.**

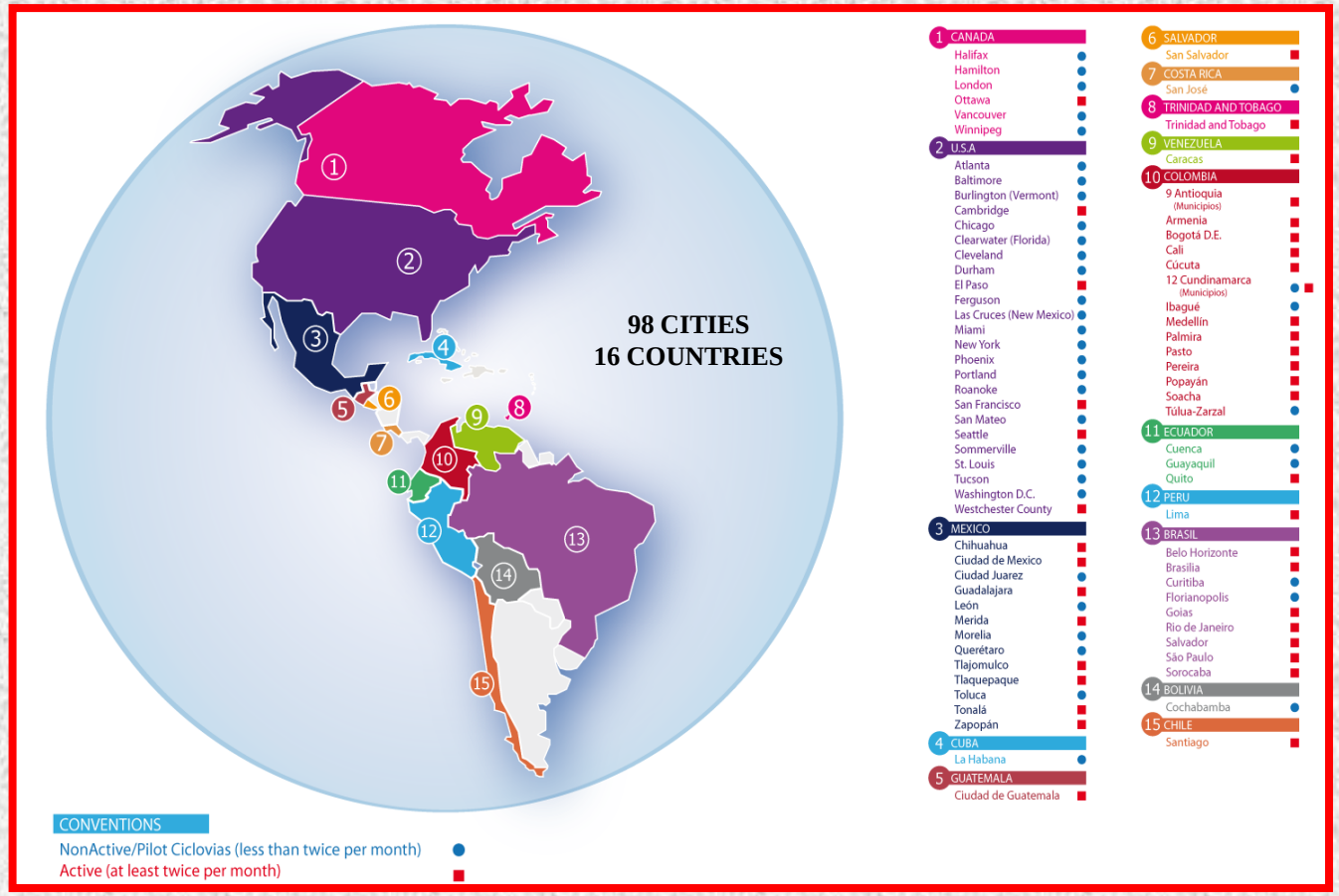
Source: Source: Díaz del Castillo A, Sarmiento OL, Reis RS, Brownson RS (2011) Translating evidence to policy: urban interventions and physical activity promotion in Bogotá, Colombia and Curitiba, Brazil, TBM, 2011 p. 350-360

DEVELOPMENT OF PUBLIC POLICIES FOR PHYSICAL ACTIVITY PROMOTION IN BOGOTA, 2005

- Programs like Ciclovía are examples that communal activities with public health benefits can exist in sectors different from health, such as recreation and sports, urban planning, or education.

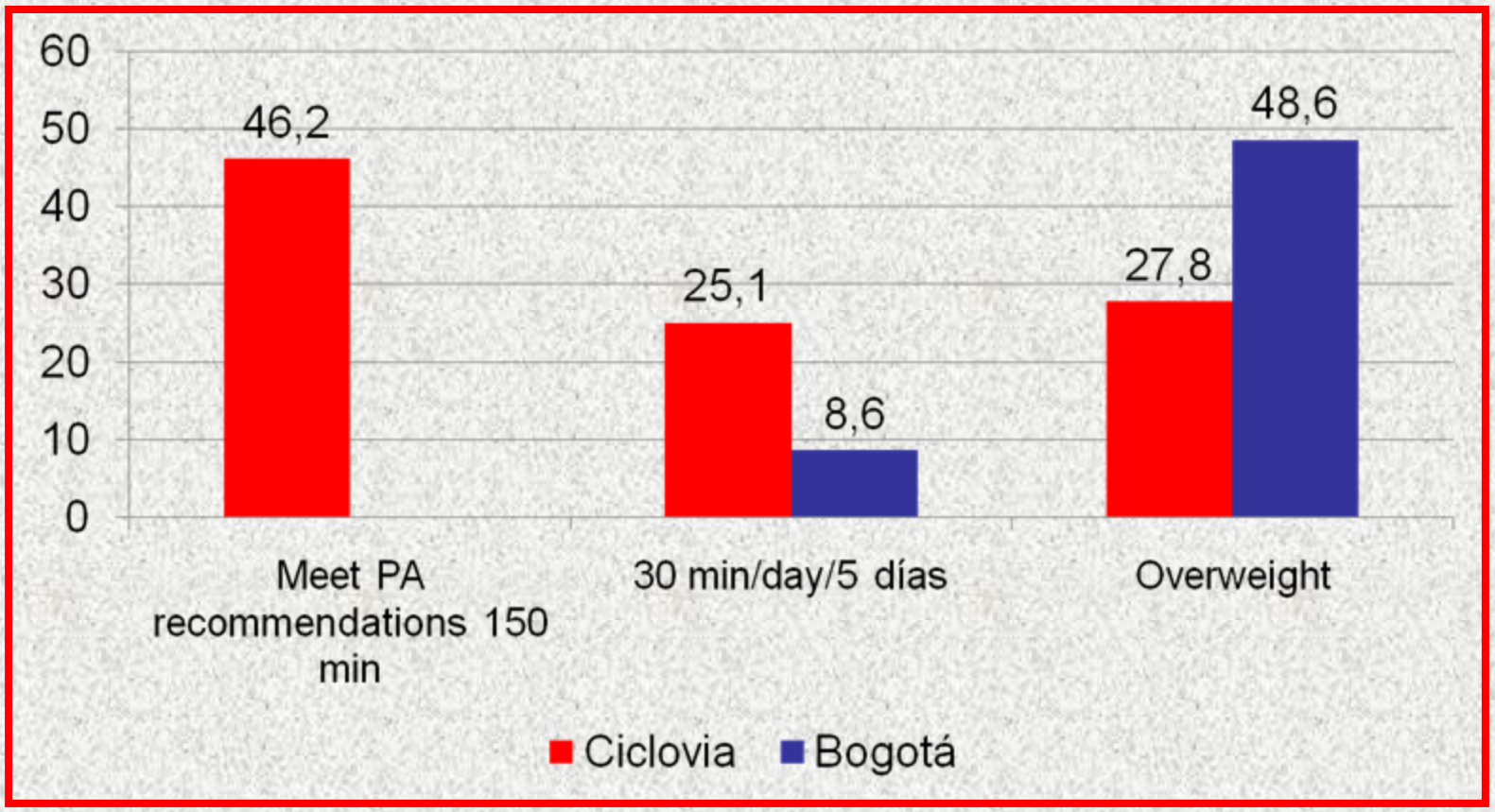
Source: Díaz del Castillo A, Sarmiento OL, Reis RS, Brownson RS (2011) Translating evidence to policy: urban interventions and physical activity promotion in Bogotá, Colombia and Curitiba, Brazil, TBM, 2011 p. 350-360

CICLOVÍAS PROGRAMS CURRENTLY ACTIVE IN LATIN AMERICA AND THE CARIBBBEAN 2010



Source: Sarmiento OL, Torres A, Jacoby E, Pratt M, Schmid T, Stierling G. The Ciclovía-recreativa: a mass recreational program with public health potential. *Journal of Physical Activity & Health 2010, 7 (suppl 2) S163-S180.*

PHYSICAL ACTIVITY AND OVERWEIGHT AMONG CICLOVIA PARTICIPANTS IN THE CITY OF BOGOTA 2010



Source: Sarmiento OL, Torres A, Jacoby E, Pratt M, Schmid T, Stierling G. The Ciclovía-recreativa: a mass recreational program with public health potential. *Journal of Physical Activity & Health 2010, 7 (suppl 2) S163-S180*

COSTS

Annual operational costs: US 1,714,591

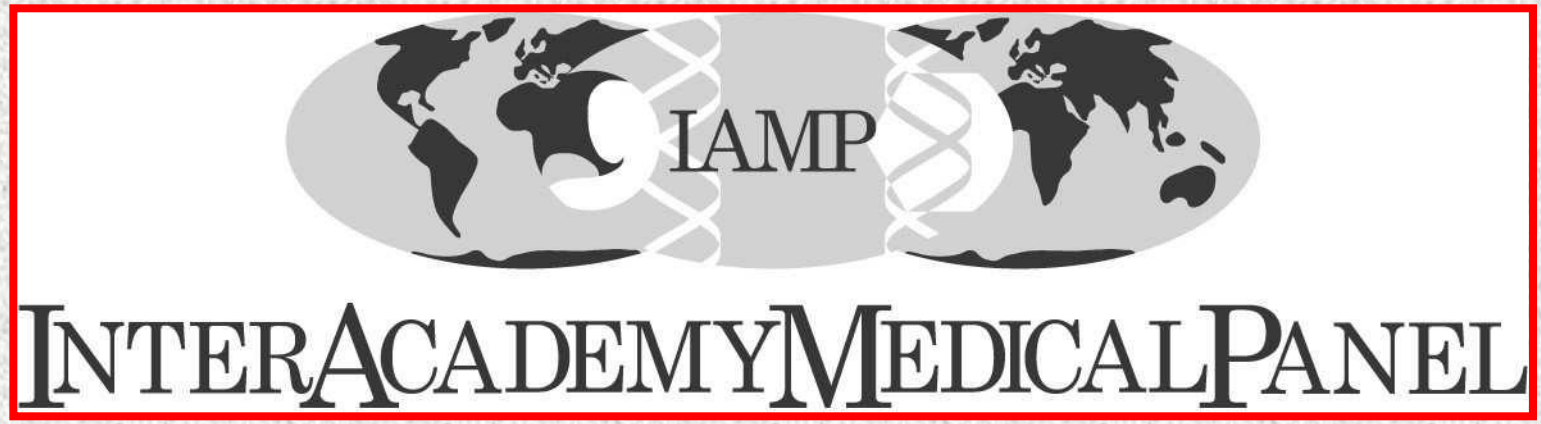
Users per event: 600,000 to 1 400,273

Cost per user per event US 0.08 – US 0.09

Cost benefit ratio: For every dollar invested in the Ciclovia Program in Bogota (operational and users costs): US 3.23 - US4.26 dollars are saved on direct medical costs due to physical activity.

Mean annual benefit for mortality prevention: US 3,196,956 - 21,292,660

Source: Sarmiento OL, Torres A, Jacoby E, Pratt M, Schmid T, Stierling G. The Ciclovía-recreativa: a mass recreational program with public health potential. *Journal of Physical Activity & Health 2010, 7 (suppl 2) S163-S180.*



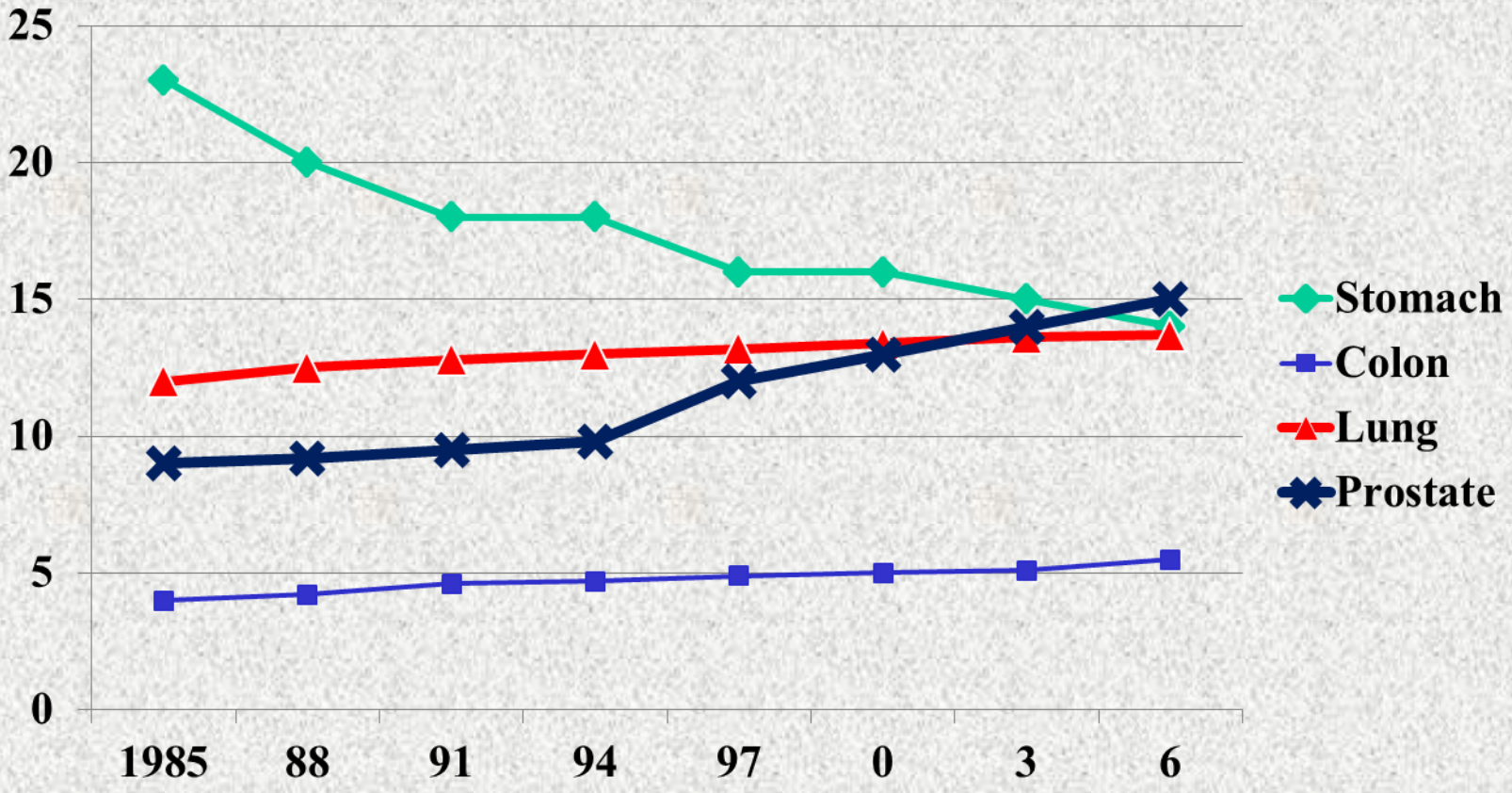
Prevention and Control of Cancer
COLOMBIA

CANCER MORTALITY 2008

- More than two thirds of all cancer deaths occur in low- and middle-income countries.
- Lung, breast, colorectal, stomach and liver cancers cause the majority of cancer deaths.
- In high-income countries, the leading causes of cancer deaths are lung cancer among men and breast cancer among women.

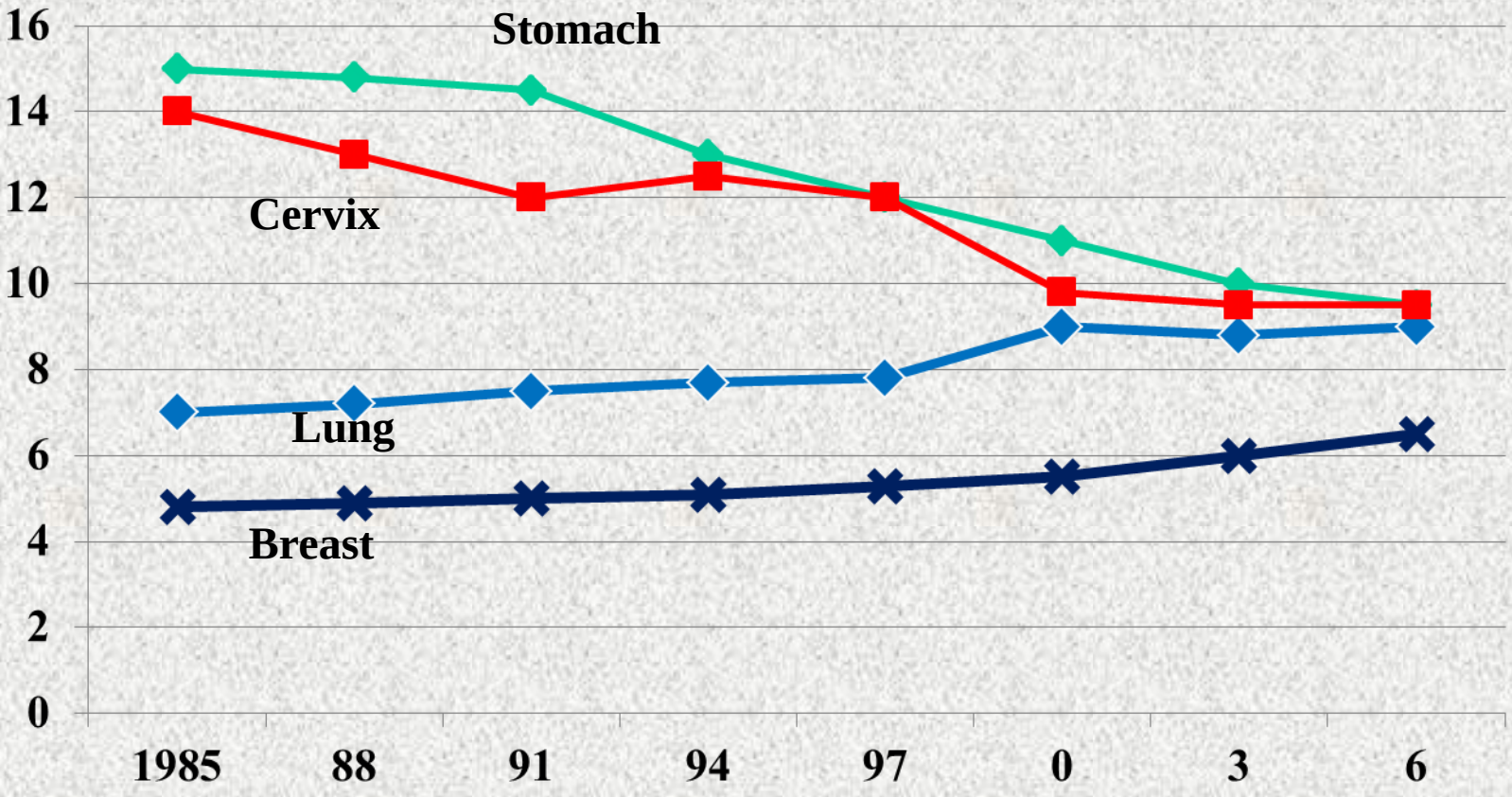
Source: WHO Global Status Report on Non Communicable Diseases 2010 p. 10

CANCER MORTALITY COLOMBIA 1985-2006
Age-adjusted rate x 100 000 MEN



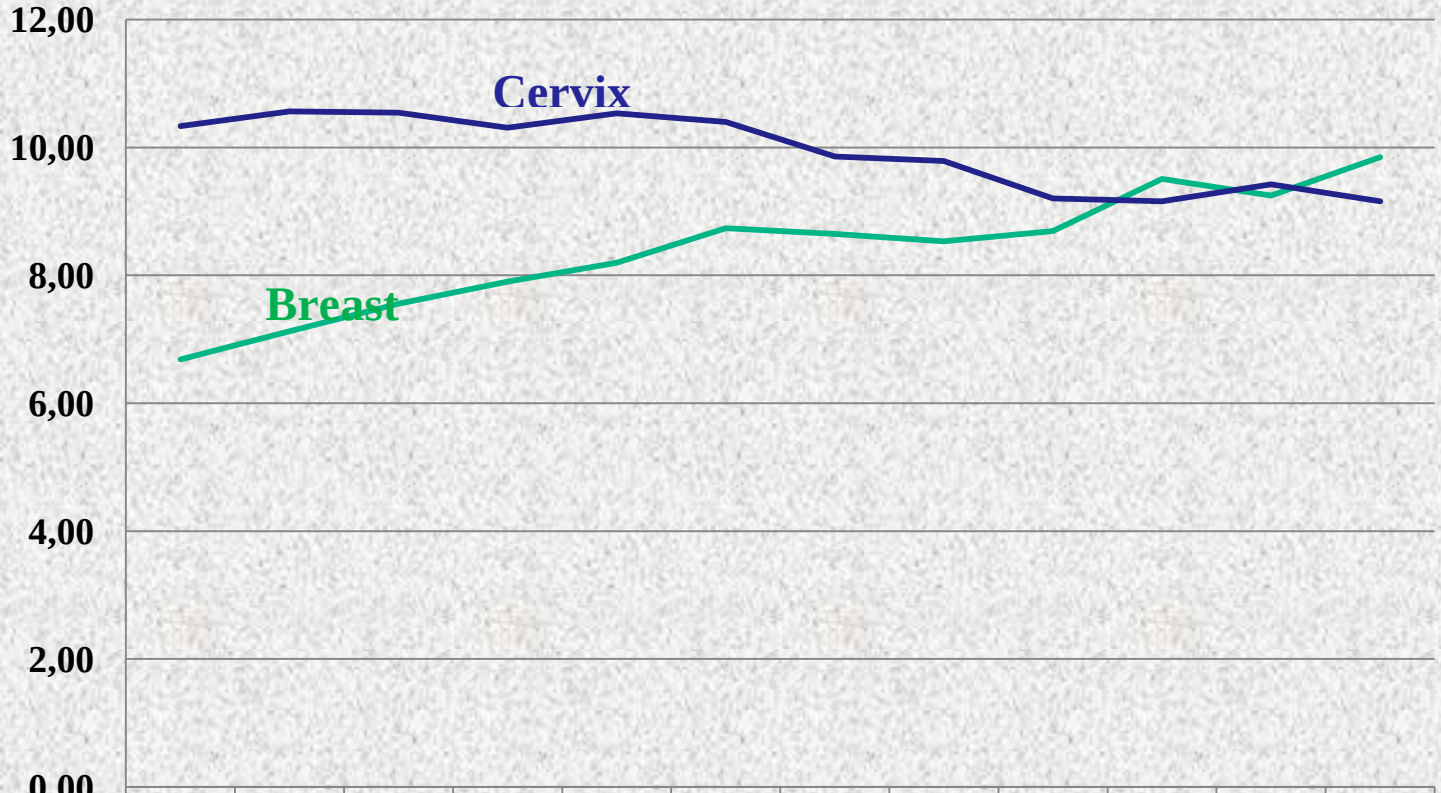
Source: Ministerio de Salud, Colombia, Plan de Control de Cáncer 1985-2006, p. 10

CANCER MORTALITY COLOMBIA 1985-2006
Age-adjusted rate x 100 000 WOMEN



Source: Ministerio de Salud, Colombia, Plan de Control de Cáncer 1985-2006, p. 10

MORTALITY RATES BY CERVIX AND BREAST CANCER x 100 000 WOMEN Colombia 1998 -2009



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Ca. Mama	6,69	7,13	7,55	7,90	8,20	8,74	8,65	8,53	8,69	9,51	9,25	9,85
Ca. Cuello Uterino	10,33	10,56	10,54	10,31	10,53	10,40	9,86	9,79	9,20	9,16	9,42	9,16

Source: DANE, Estadísiticas Vitales, Bogotá 1998-2009

CANCER MORTALITY COLOMBIA 1999-2011
Age-adjusted rate x 100 000 MEN

	99	00	01	02	03-06	07	08	09	11
Stomach		18,8	18.1	17.2	15.4				
Colon		5.2	5.2	5.3	11.9				
Lung		13.4	13.6	13.7	12.6				
Prostate		14.6	14.2	14.3	12.9				

Source: Ministerio de Salud, Colombia, Ministerio de Salud, Incidencia y Mortalidad por Cáncer 2002-2006 p. 118, 126

CANCER MORTALITY COLOMBIA 1999-2011
Age-adjusted rate x 100 000 WOMEN

	99	00	01	02	03-06	07	08	09	11
Stomach		10.6	9.6	9.3	9.1				
Cervix		11.2	11.0	10.8	10.0				
Lung		6.8	6.8	6.9	8.6				
Breast		9.1	9.1	9.2	9.5				

Source: Ministerio de Salud, Colombia, Incidencia y Mortalidad por Cáncer 2002-2006 p. 119,122

CANCER INCIDENCE COLOMBIA 1999-2011
Age-adjusted rate x 100 000 MEN

	99	00	01	02	03-06	07	08	09	11
Stomach					26.5		23.4		
Colon					5.3		10.6		
Lung					18.6				
Prostate					12.9		40.0		

Source: WHO IARC GLOBOCAN PROJECT 2008; Ministerio de Salud, Colombia, Incidencia y Mortalidad por Cáncer 2002-2006 p- 106, 108, 118

CANCER INCIDENCE COLOMBIA 1999-2011
Age-adjusted rate x 100 000 WOMEN

	99	00	01	02	03-06	07	08	09	11
Stomach					15.4		12.5		
Cervix					28.2		21.5		
Lung					10.3		8.6		
Breast					36.4		31.2		

Source: WHO IARC GLOBOCAN PROJECT 2008; Ministerio de Salud Incidencia y Mortalidad por Cáncer 2002-2006, p. 106, 119 , 122

BREAST CANCER: INEQUITY OF ACCES TO DIAGNOSIS BY LEVEL OF INCOME, COLOMBIA 2009 (%)

CLINICAL STAGE	CONTRIBUTORY (*) N (%)	SUBSIDISED (**) N (%)	POOR WITHOUT SOCIAL SEGURITY (***) N (%)
In situ	11 (3.3)	4 (1.6%)	0
Early	88 (26.6)	31 (12.8%)	9 (13.4%)
Advanced	206 (62.2)	177 (72.8%)	47 (70.1%)
Metastasic	26 (7.9)	31 (12.8%)	11 (16.4%)

(*) Patients with high income, (**) Patients with medium income, (***) Patients with lowest income

Source: Velásquez-De Charry, Carrasquilla G, Roca-Garavito S (2009) Equidad en el acceso al tratamiento para el cáncer de mama en Colombia, Salud Pública de México Vol. 51, suplemento 2 de 2009 p. S 249