

STATE OF THE ART OF PREVENTION AND CONTROL OF CARDIOVASCULAR DISEASES IN ARGENTINA

WORKSHOP ON NON- COMMUNICABLE DISEASES

**Rio de Janeiro. Brasil
2012**

Acad. Dr. Marcelo V. Elizari

The cardiovascular disease (CD), as a component of Non- Communicable Diseases, is and will persist in being the leading cause of mortality in the Western world. Detection, prevention and management of CD as it developed in the last century has significantly reduced its impact on younger age but have displaced its manifestations to the elderly population.

From the beginning of the last century to the mid of the 1950s most developed countries experienced a dramatic increase in deaths mainly due to premature coronary artery disease and stroke. After the fifties, different strategies including population-based approaches, management of high-risk patients and public education led to a clear-cut drop in the rates of coronary heart disease deaths and stroke in many Western countries.

Despite paramount advances in prevention and management, CD mortality is still the major cause of premature death worldwide. Furthermore, many developing countries are undergoing social transformation and, as advances are oriented to avoid childhood deaths due to infection and nutritional deficiencies, increasing numbers of individuals in these countries are reaching adulthood.

It is projected that in the next 20 years, the majority of CD deaths will occur in what is now the developing world. Increasing longevity in developing countries will produce in the years to come a significant rise in the prevalence of CDs and disability unless preventive measures are taken to control this demographic trend.

Besides, with the ageing of the population, a higher proportion of events will occur in the elderly and also in women. In these two groups, the RFs for coronary heart disease and stroke may be somewhat different from the data obtained in younger individuals. In fact, abnormalities of glucose metabolism are perhaps greater in women, older individuals and certain ethnic groups such as South Asians.

This information suggests a changing pattern in epidemiology of disease, the relative importance of various risk factors (RFs) and preventive strategies. Due to this changing pattern that will modify RFs, there is still a lot to be done in the area to identify newer RFs in the elderly, women and different ethnic backgrounds.

Hypertension, vascular disease of the coronary, cerebral and peripheral circulation are the most significant non-communicable diseases in the western world.

Although some populations demonstrate a genetic predisposition to develop hypertension and accelerated atherosclerosis, the vast majority is acquired through lifestyle behaviors and their clinical manifestations appear in later life.

Compelling observational data from several landmark studies suggest that tobacco use, elevation of cholesterol, hypertension and diabetes are important causal RFs for clinical vascular disease. Despite each RF independently influences the development of atherosclerosis, the progression is increased when two or more RFs are present simultaneously.

- Kannel WS, Mc Gee D, Gordon T. A cardiovascular risk profile in the Framingham study. Am J Cardiol 1976; 38: 46-51.
- Keys A. Coronary heart disease – the global picture. Atherosclerosis 1975; 22: 149-192.

RFs AND ATHEROSCLEROSIS

UNMODIFIABLE FACTORS	MODIFIABLE FACTORS	CONTRIBUTING FACTORS
Genetics	Smoking	Obesity
Sex	Hypertension	Sedentary lifestyle
Race	High Cholesterol	Stress
Age	Diabetes	Pollution

Known Biological Determinants of Atherosclerosis

Tobacco

Cigarette smoking is a powerful and independent causal factor for the development of two of the most important chronic disease worldwide: atherosclerosis and cancer.

Cholesterol

Large prospective observational studies have demonstrated the strong direct relationship between serum cholesterol and atherosclerosis. Results from comparisons between different populations indicate that the lower the mean cholesterol concentration, the lower the risk of atherosclerosis.

- Keys A. Seven Countries. A Multivariate Analysis of Death and Coronary Heart Disease 1980. Harvard University Press, Boston.
- Chen Z, Peto R, Collins R et al. Serum cholesterol concentrations and coronary heart disease in a population with low cholesterol concentrations. BMJ 1991; 303: 276-282.

Hypertension

Increasing levels of diastolic and systolic blood pressure predict atherosclerosis. Framingham data demonstrated correlation between hypertension and coronary artery disease and a progressive increase in cardiovascular risk with every increment of systolic pressure.

Kannel WB, Dawber TR, Mc Gee DL. Perspectives on systolic hypertension. The Framingham Study. Circulation 1980; 60: 1183-1187.

However, a seven countries study shows how mortality is significantly different in northern Europe, in Japan or in the United States of America in the presence of the same blood pressure measurements. This indicates that isolated blood pressure measurements can't account for this fact but they force you to think about other phenomena such as cultural aspects, local customs, stress and lifestyle habits of a society as the underlying causes.

Diabetes

Diabetics are at much higher risk of CD and death for any given level of the other major cardiovascular RFs than non diabetics. The absolute risk of cardiovascular death is three times higher for diabetics than non-diabetics across all ages even after adjustment of serum cholesterol, hypertension and cigarette smoking.

Stamler J, Vaccaro O, Neaton J, Wentworth D. Diabetes, other RFs and 12 years cardiovascular mortality for men screened in the Multiple Risk Factor Intervention Trial. Diabetes Care 1993; 16: 434-442.

Socioeconomic status and disease

Individuals' lifestyle choices are closely associated with their socioeconomic status. It is a universal finding across all nations that all-cause mortality and morbidity follow a gradient across socioeconomic classes. Lower income and lower social status are associated with poorer overall health and heart disease.

Marmot M, Shipley MJ, Rose G. Inequalities in death –specific explanations of a general pattern? Lancet 1984; I: 1003-1006.

Psychological stress and CD

There is an enormous amount of literature on psychological stress on CD in terms of the effects of acute and long-term stressors on cardiac functioning. A search on PubMed reveals approximately 40,000 citations.

Relevance of non communicable-diseases (NCD)

In Argentina, NCD account for more than 60% of deaths. Cardiovascular diseases are responsible for 32% of deaths, most of them occurring in productive age.

Cardiovascular diseases represent an important public health load since they account for a significant loss (16%) of healthy productive years, which results in a high cost not only for the health system but also for the society on the whole.

NATIONAL RFs SURVEYS IN ARGENTINA

Since it is of paramount importance to weight the magnitude of the determining factors of CDs on the population, two national surveys were carried out in Argentina, one in 2005 and the other one in 2009.

2nd NATIONAL SURVEY ON RISK FACTORS 2009

For Non Communicable Diseases



Surveillance Area

Dirección de Promoción de la Salud y Control de ENT
Subsecretaría de Prevención y Control de Riesgos



200 AÑOS
BICENTENARIO
ARGENTINO



Ministerio de
Salud
Presidencia de la Nación

In 2009, the National Ministry of Health conducted the second National RF Survey.

The aim of the 2009 national survey was to monitor the evolution of the main RFs of chronic diseases and describe the distribution of major RFs in subgroups. A probabilistic sample was performed including general urban population in cities with more than 5,000 inhabitants, aged 18 and over across the country. The survey included 34,372 respondents with a response rate of 75%. Out of 304,525 deaths in 2009, 89,916 were due to cardiovascular causes.

The main results of this survey, which are of paramount importance for the decision-taking in health at a national, provincial and municipal level as well as for other ministries (Interior, Education, Social Welfare, Sports Secretariat, etc.). It is necessary to strengthen the response to stop and revert the advance of obesity and diabetes, which are the result of a reduction in physical activity, less healthy eating and a decrease in fruit and vegetable intake. The more measurements of blood pressure, glycemia levels, cholesterol levels, the more significant the advances. It was observed that smoking prevalence was reduced. This reduction could be even more important if smoking control actions are strengthened.

National Surveys on Risk factors

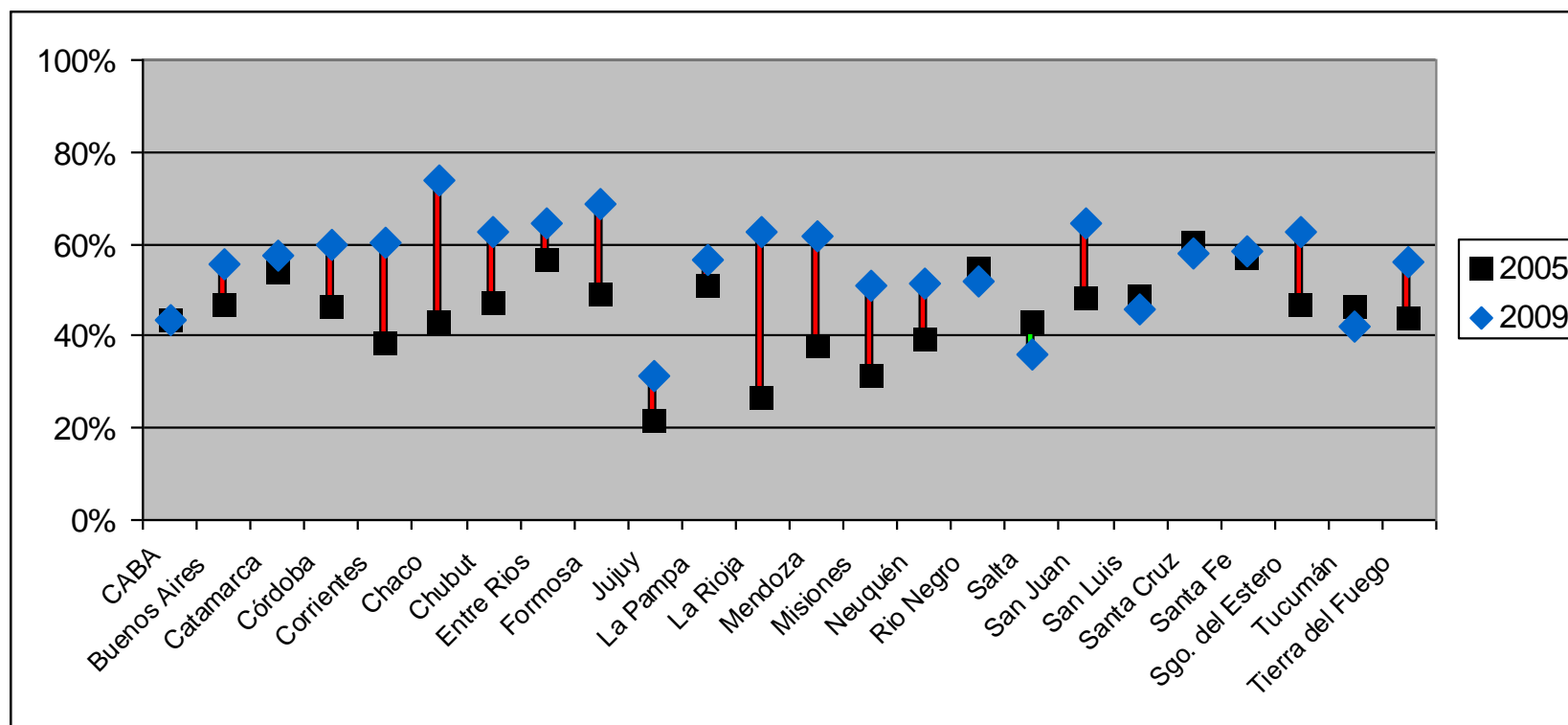
Evolution from 2005 to 2009 of the main indicators

Main indicators (1)	2005	2009
Social security or private health insurance coverage	64,6%	74,9%
Poor or fair general health	19,9%	19,2%
Low physical activity	46,2%	54,9%
Smoking 18-64 years	33.4%	30.1%
Exposure to second-hand smoke	52,0%	40,4%
% daily fruit intake	36,3%	35,7%
% daily vegetable intake	40.0%	37,6%
Intake of 5 daily fruit and vegetable portions	-----	4.8%
Always salt	23,1%	25,3%
Overweight (body mass index -BMI >25 and <30)	34,4%	35,4%
Obesity (BMI ≥30)	14,6%	18,0%

Main indicators (2)	2005	2009
Blood pressure control in the last 2 years	78,7%	81,4%
Prevalence of high blood pressure	34,5%	34,8%
Cholesterol level control (occasionally)	72,9%	76,6%
High cholesterol levels (among those measured)	27,9%	29,1%
Glycemia control	69,3%	75,7%
Diabetes (overall population)	8,4%	9,6%
Anxiety depression (moderate to severe)	21,8%	19,2%

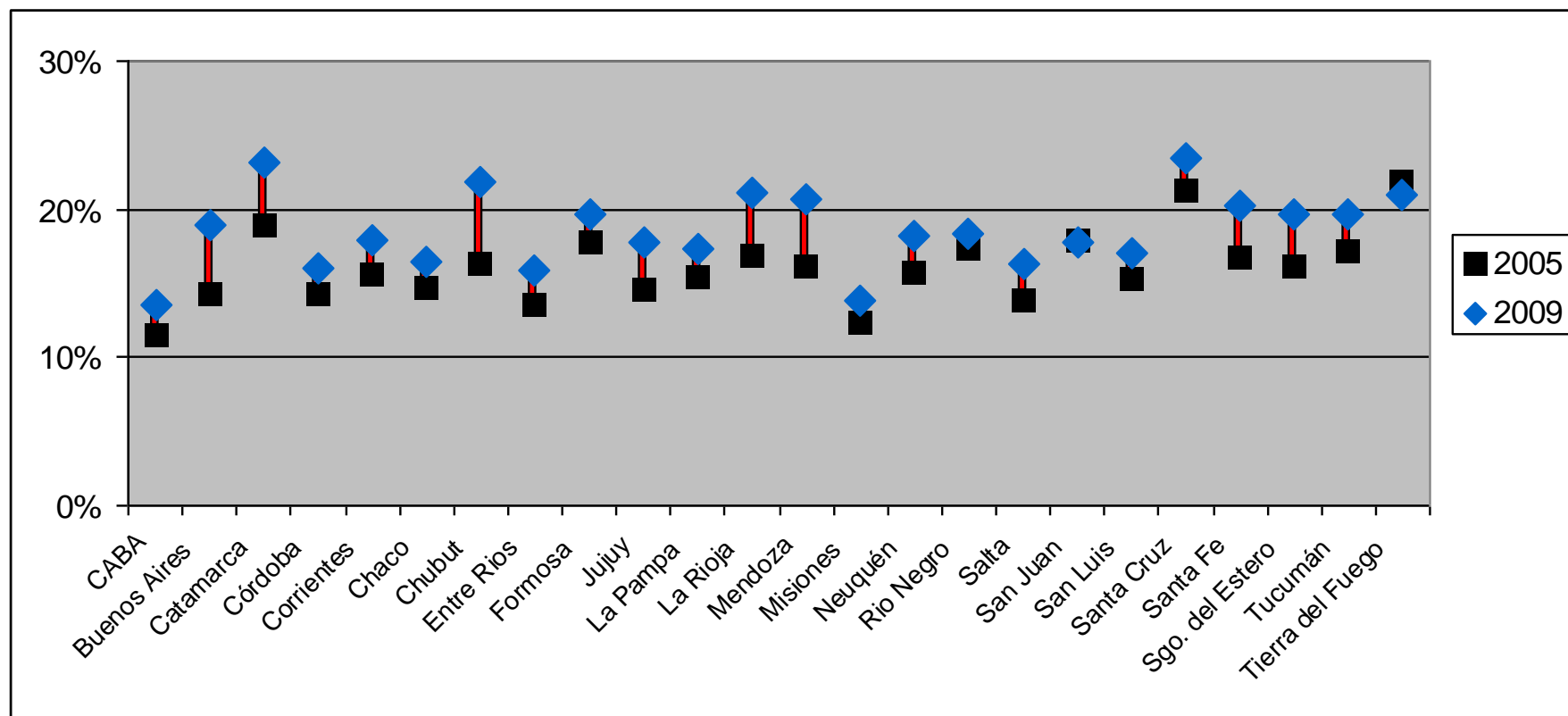
Comparison NSRF 2005-2009

Physical inactivity



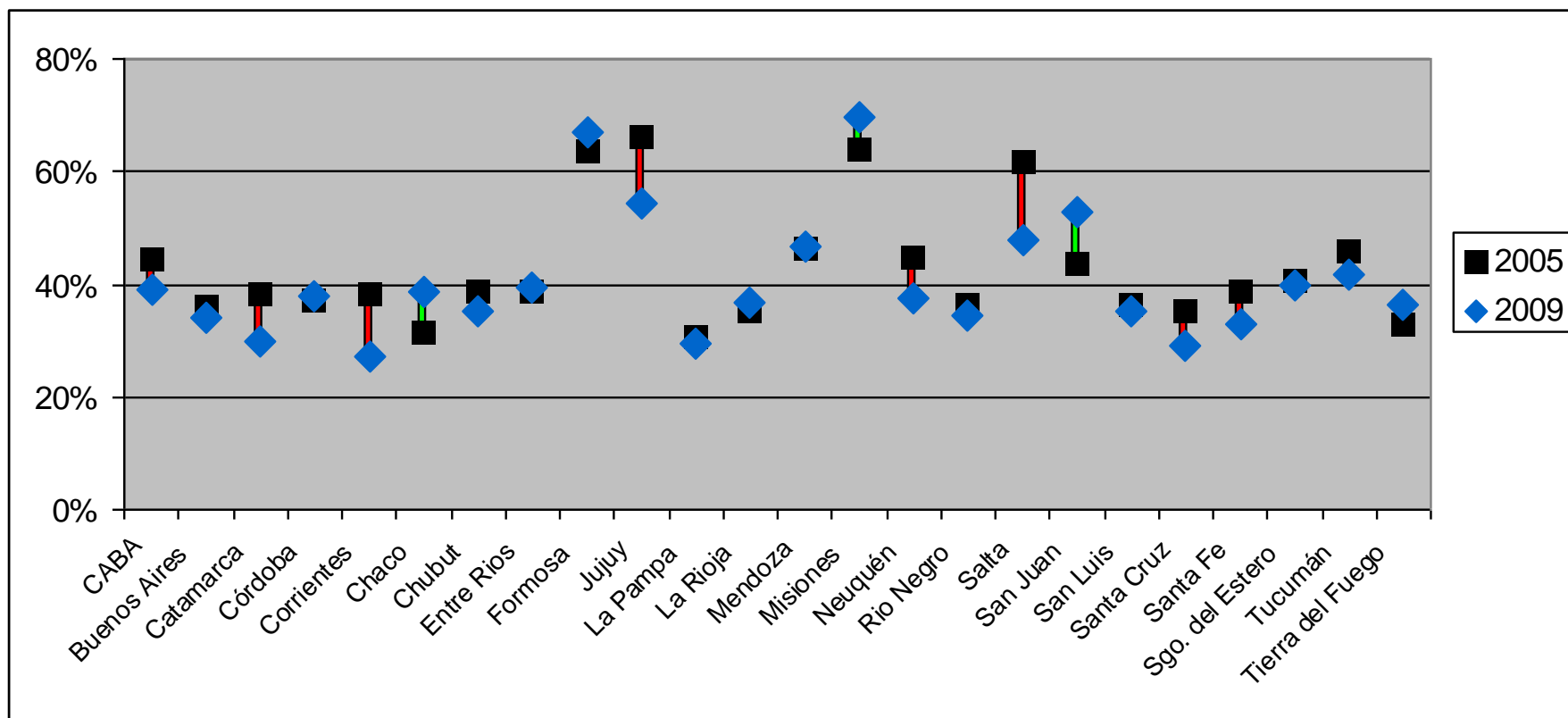
Comparison NSRF 2005-2009

Obesity (BMI >25)



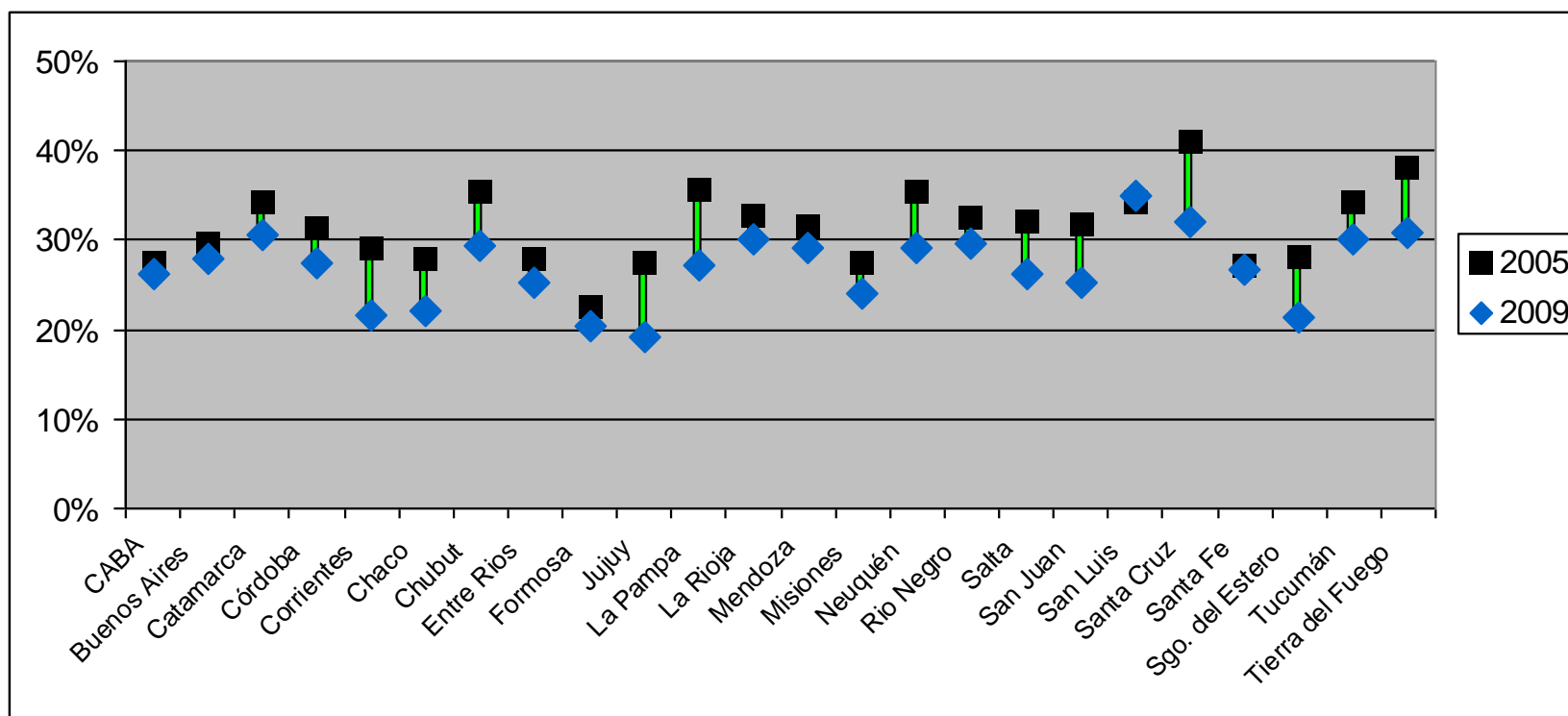
Comparison NSRF 2005-2009

Vegetables daily intake



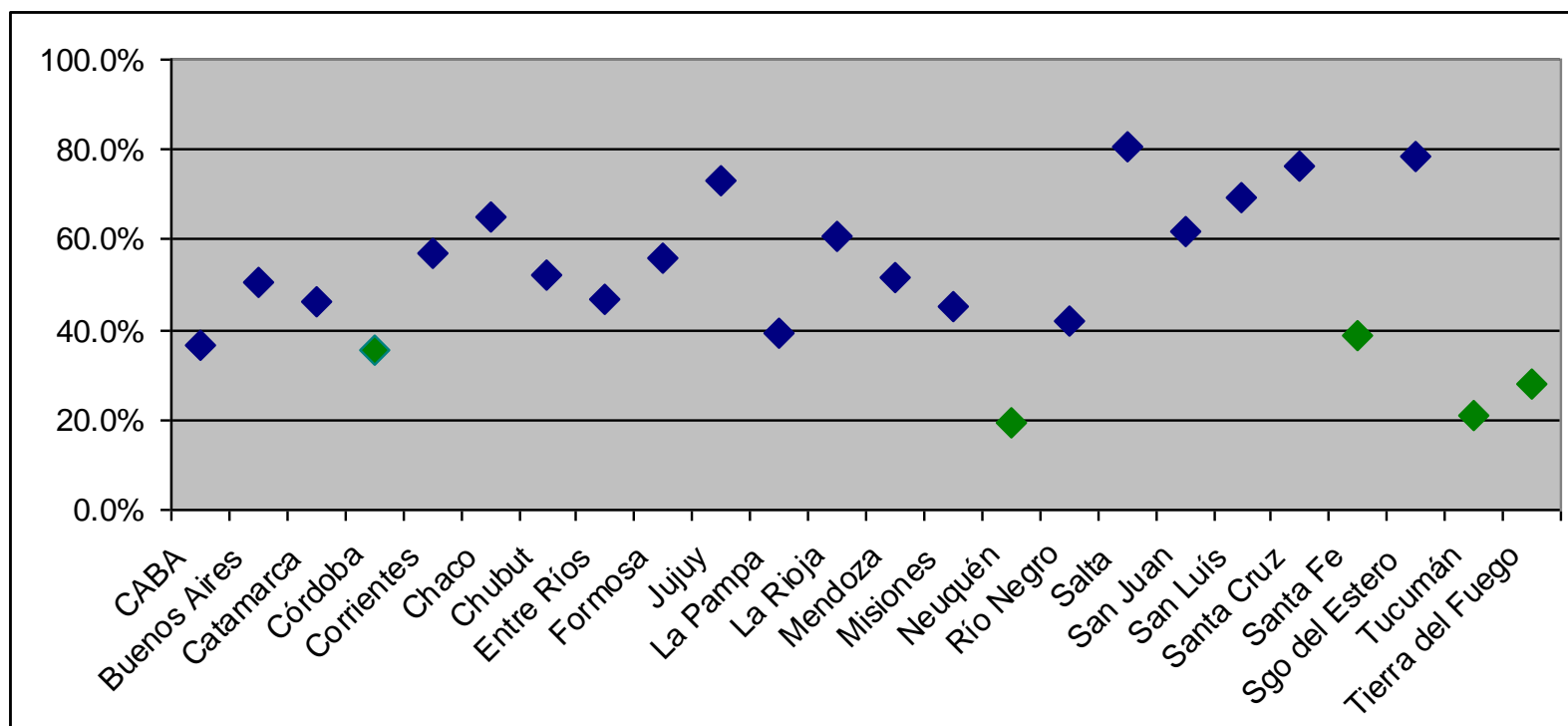
Comparison NSRF 2005-2009

Smoking



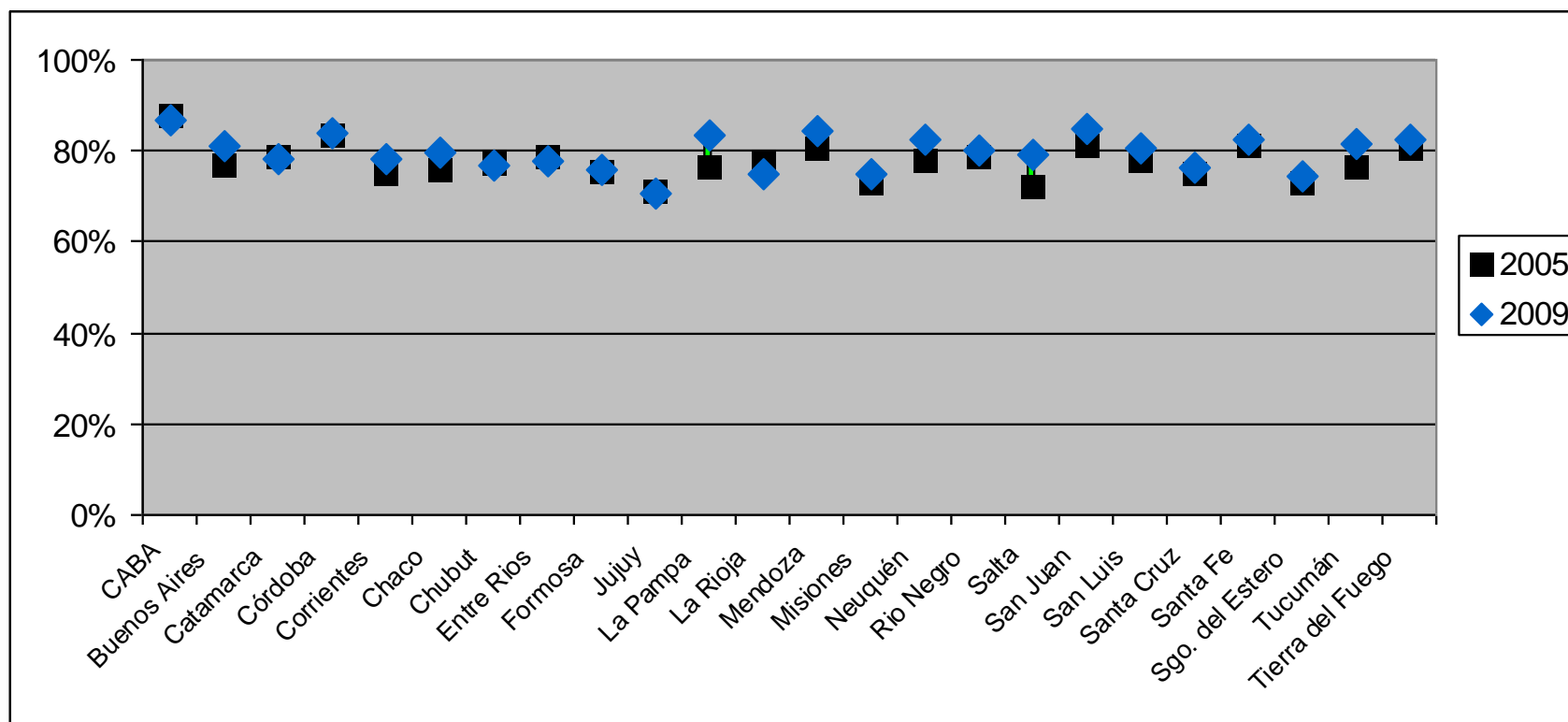
NSRF 2009

Involuntary exposure to tobacco smoke, bars and restaurants



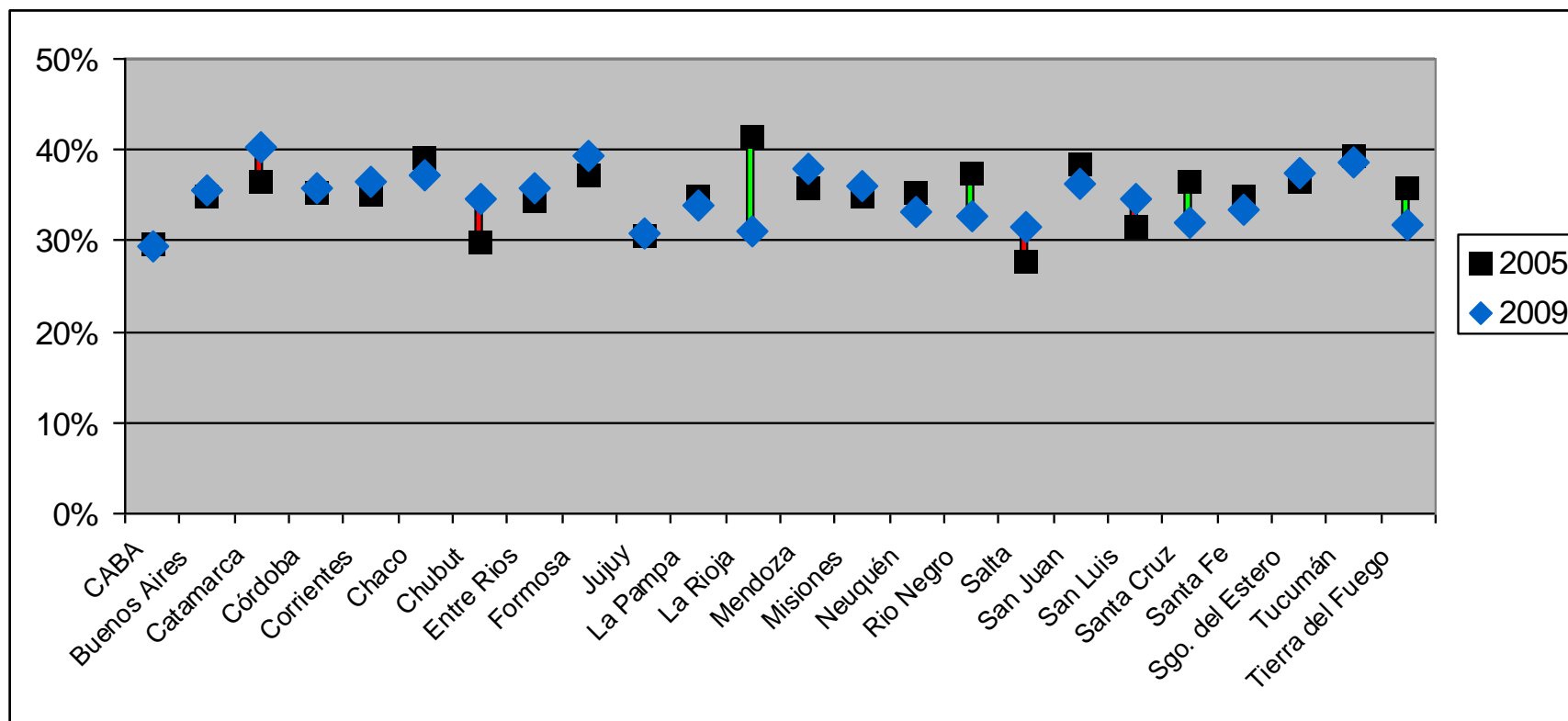
◆ 100% smoke-free Laws with over a year of implementation

Comparison NSRF 2005-2009 Blood Pressure Measurement



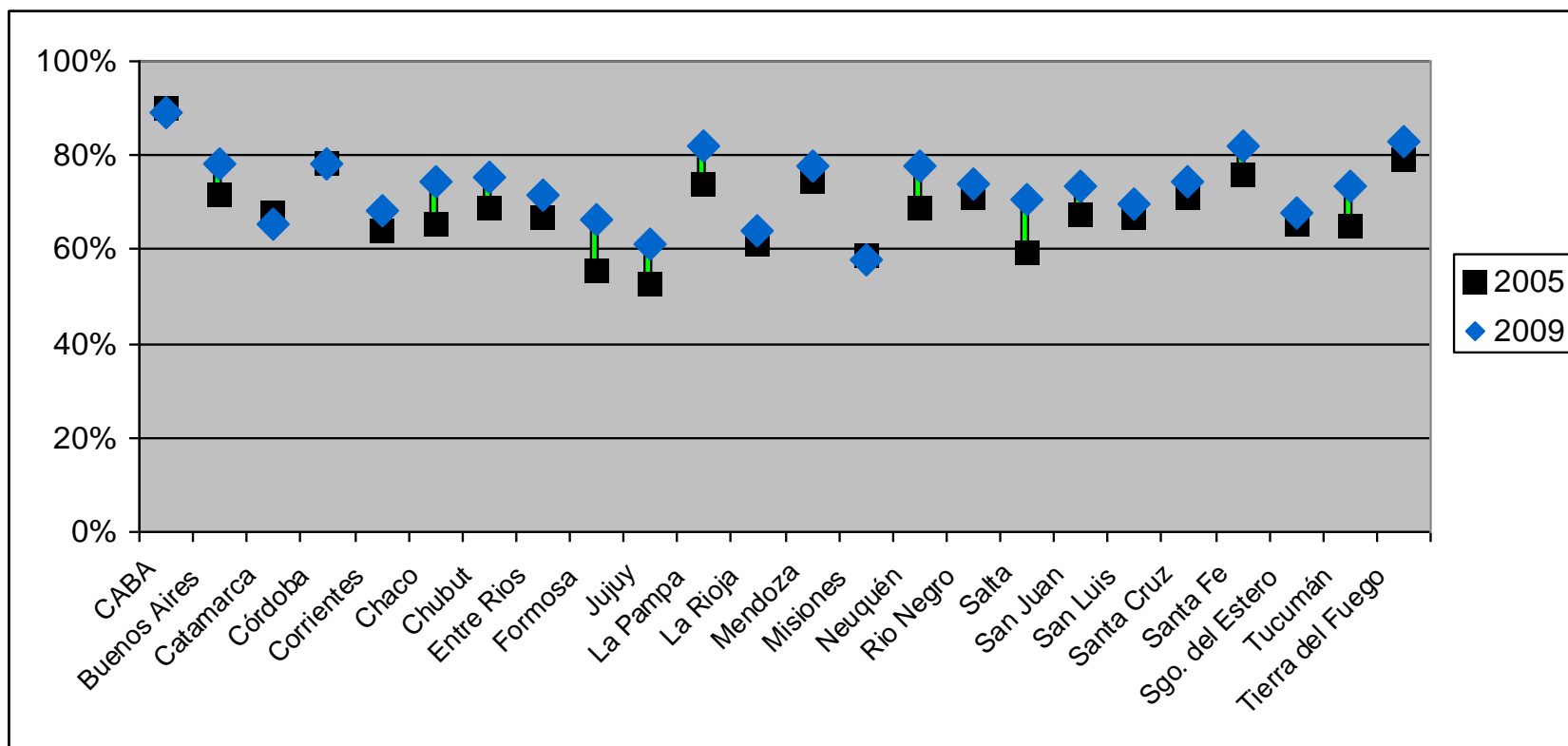
Comparison NSRF 2005-2009

Hypertension



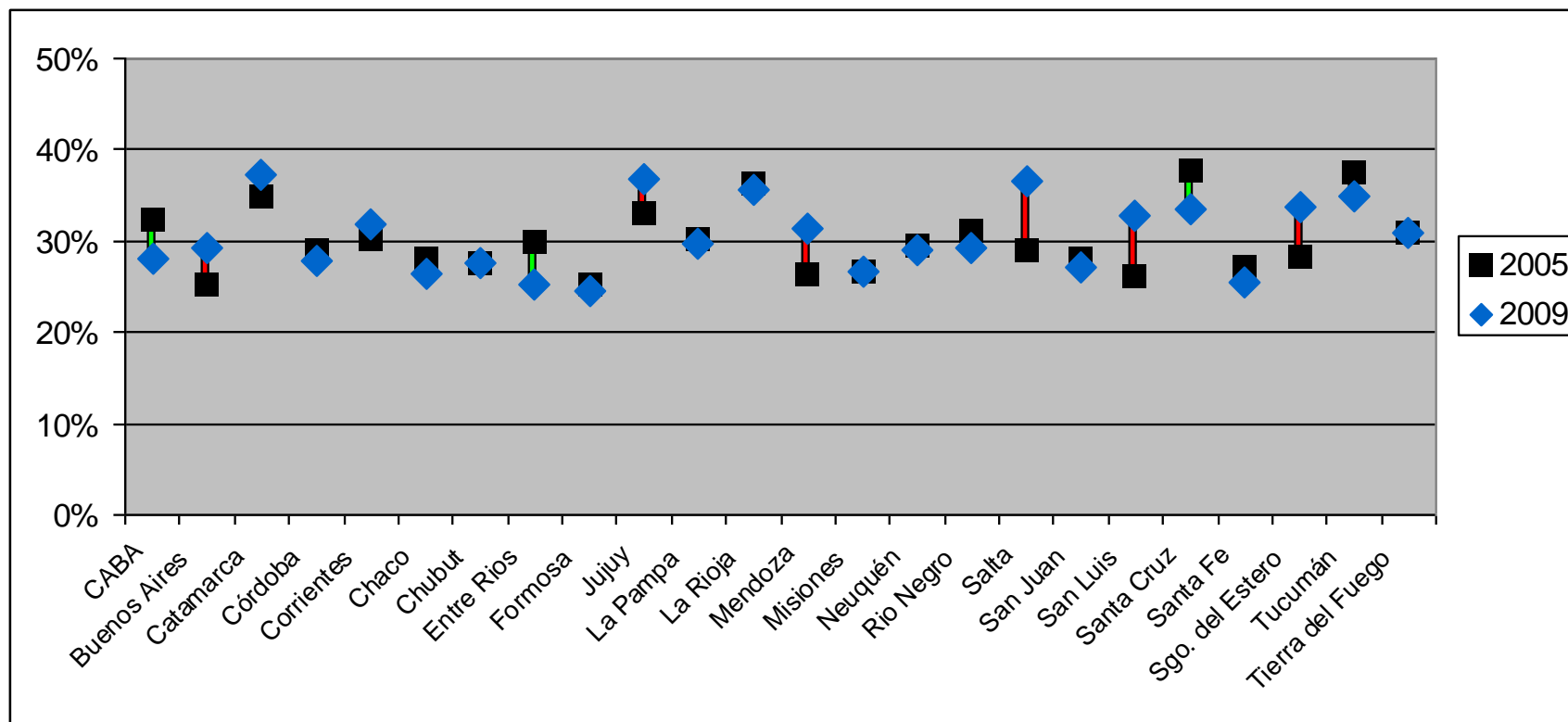
Comparison NSRF 2005-2009

Cholesterol level measurement



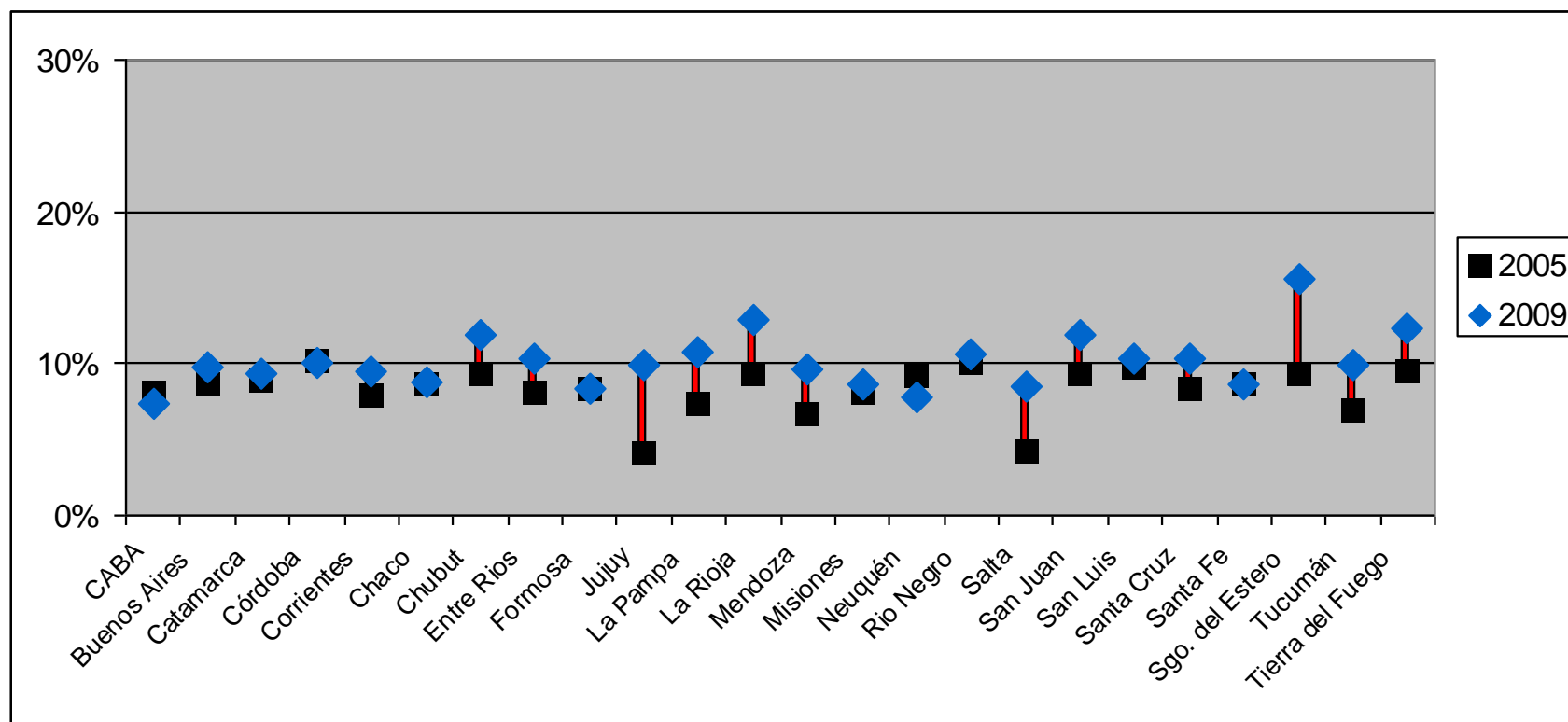
Comparison NSRF 2005-2009

High cholesterol level



Comparison NSRF 2005-2009

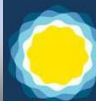
Diabetes or hyperglycemia



Based on the results of the NSRFs, the Ministry of Health designed and approved the National Program of Prevention of Cardiovascular Diseases by Resolution 801/2011.

The expenses resulting from the performance of this programme will be financed by the Ministry of Health, special money items assigned by law and eventually by other international or national agencies.

The National Programme on Prevention of CDs of the Ministry of Health of the Argentine Republic offers an integral approach of this problematic involving all the main aspects that determine the heavy load of cardiovascular morbi-mortality in Argentina.



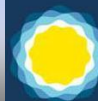
The main strategic guidelines of the programme are:

1. Promotion and regulation of healthy processed foods;
2. Promotion of a healthy diet and an active life;
3. Surveillance of RFs and CD;
4. Epidemiology and surveillance of health systems, health care quality and strengthening of health care networks;
5. Mass communication and intersectorial articulation. Development of communication strategies and material for different audiences;
6. Health professional training in medical residencies and other pre and post-grade training instances.

The programme comprises a set of components operating on these main determinants, such as:

1. Promotion of a healthy diet. Promotion and regulation of processed healthy foods;
2. Promotion of physical activity and an active life;
3. Promotion of smoking control;
4. Prevention and control of RF in the health system;
5. Surveillance and control of RF in CDs;
6. Health care: epidemiology/surveillance of health care, health care attention and strengthening of health care networks;
7. Community actions and of mass communication;
8. Training for health professionals and pocket guidelines for prevention of CDs;
9. Prioritization of research areas.

Some Examples of Mass Communications of the Argentine Ministry of Health for Prevention and Control of CD



Population-based interventions. Health promotion

LOCAL INTERVENTIONS

PHYSICAL ACTIVITY

- Communication campaigns.
- Señales: promoviendo la AF.
- Availability of recreational parks, streets and green areas.
- Promotion of the use of non-motorized transportation such as bicycles, cycle lanes and pedestrian paths.



HEALTHY EATING

- Workshops of healthy cooking for the community.
- Communication campaigns and promotional activities in local events.
- Promotion of healthy food in schools and workplaces.
- Regulation of food, size of portions and sanitary warnings.



SMOKING CONTROL

- *Public ambients and workplaces 100% smoke free.*
- Promulgate local rules of smoke free public ambients and workplaces.
- Regulation of tobacco publicity, promotion and sponsorship.



Promotion of salt intake reduction

¿SABÍAS QUÉ EN EL PAN LA REDUCCION DE SAL NO MODIFICA SU SABOR Y MEJORA TU SALUD?

DISMINUIR EL CONSUMO DIARIO DE SAL REDUCE EL RIESGO DE ENFERMEDADES CARDIACAS Y DE ACCIDENTES CEREBROVASCULARES TANTO EN PERSONAS CON HIPERTENSIÓN COMO CON PRESIÓN ARTERIAL NORMAL

-Sal + Vida

ESTA PANADERÍA:

- Reduce el contenido de sal en la elaboración de pan.
- Le ofrece pan sin sal.

Y RECUERDE:

- Cocinar sin sal. Reemplazar por perejil, tomillo, etc.
- Evitar el uso del salero en la mesa.
- Elegir alimentos y bebidas con menor contenido de sodio.



RECOMENDACIONES PARA LA ELABORACIÓN DE PAN

Para la elaboración del pan utilizar hasta 750 g. de sal por cada bolsa de 50 Kg. de harina.

Para la elaboración del pan sin sal no debe agregarle ese ingrediente en ninguna cantidad, y puede recurrir a condimentos naturales para sazonar la masa: ajo, cebolla,

- Salt intake reduction is one of the most cost-effective strategies (WHO)
- Estimated salt consumption in Argentina is about 12/13 g a day/inhabitant (WHO recommends up to 5 g)
- Reduction by 3 g in the population's daily salt intake would drop cardiovascular mortality by 10%.
- 1g reduction in salt intake could be achieved by bringing the salt in bread to 1.5%, which would avoid 20.000 strokes as well as 2.000 deaths a year.

Promotion of fruit and vegetable consumption

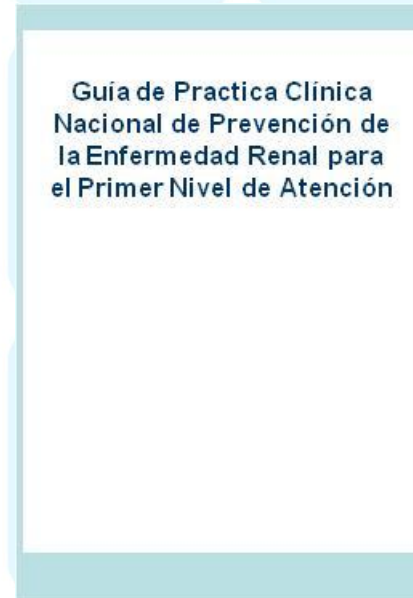
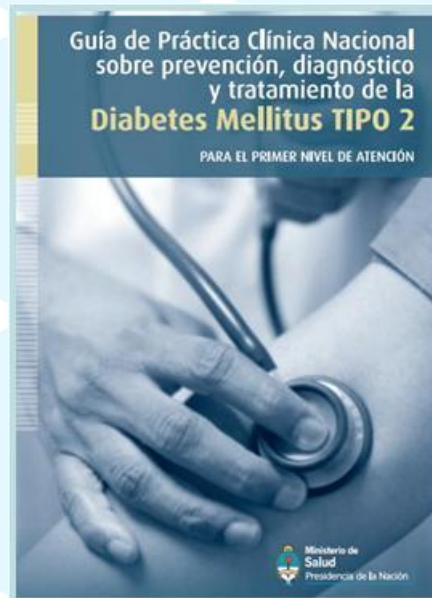
- Agreement with Fenaomfra. Seasonal materials distributed from the central markets to the green grocers
- Posters for the shops
- Triptychest with recipes for consumers



- Evidence and the WHO recommend an intake of 400g daily of fruit and vegetables.
- In Argentina people's consumption is about 200 g/day/inhabitant

Reorientation of services and health care

DEVELOPMENTS AND SET UP OF PRACTICAL GUIDES



Conclusions

In order to guarantee sustainability it will be necessary to coordinate strategies with the areas devoted to nutrition and foods in the Ministry of Health, such as maternity and infant care scheme, foods control (National Food Institute) and the National Food and Nutrition Commission. At the same time, it will be indispensable to coordinate an effective institutional articulation with other state actors in this area: the National Institute of Industrial Technology, the Ministry of Agriculture, Livestock, Fisheries and Foods, the Ministry of Economy, the Ministry of Social Welfare, the Sports Secretariat. It is important to carry out actions that truly guide the health care pattern toward a more comprehensive approach integrated by these entities.

Regarding local interventions, it is necessary to articulate with the Provinces in the frame of the Federal Council of Health and with the different municipalities through the Argentine Network of Healthy Municipalities and Communities. Agreements with the food industry are under discussion to refine processed foods by reducing sodium further to all the above mentioned measures. Of note, all bars, restaurants, discos and public institutions are already smoke-free in Argentina. It is also necessary to work hard in health promotion and concentrate on the development of healthy environments.

The evidence presented for changes that have already occurred in Argentina in health behavior, RFs and CD is cause of optimism that a continued decrease in cardiovascular risk can be achieved. However, some pessimism can be engendered by the awareness of barriers intrinsic to social norms and commercial and political pressures. Political action to education aimed at the entire public with emphasis on precursors to RFs is the most important step for the prevention and control of CD .